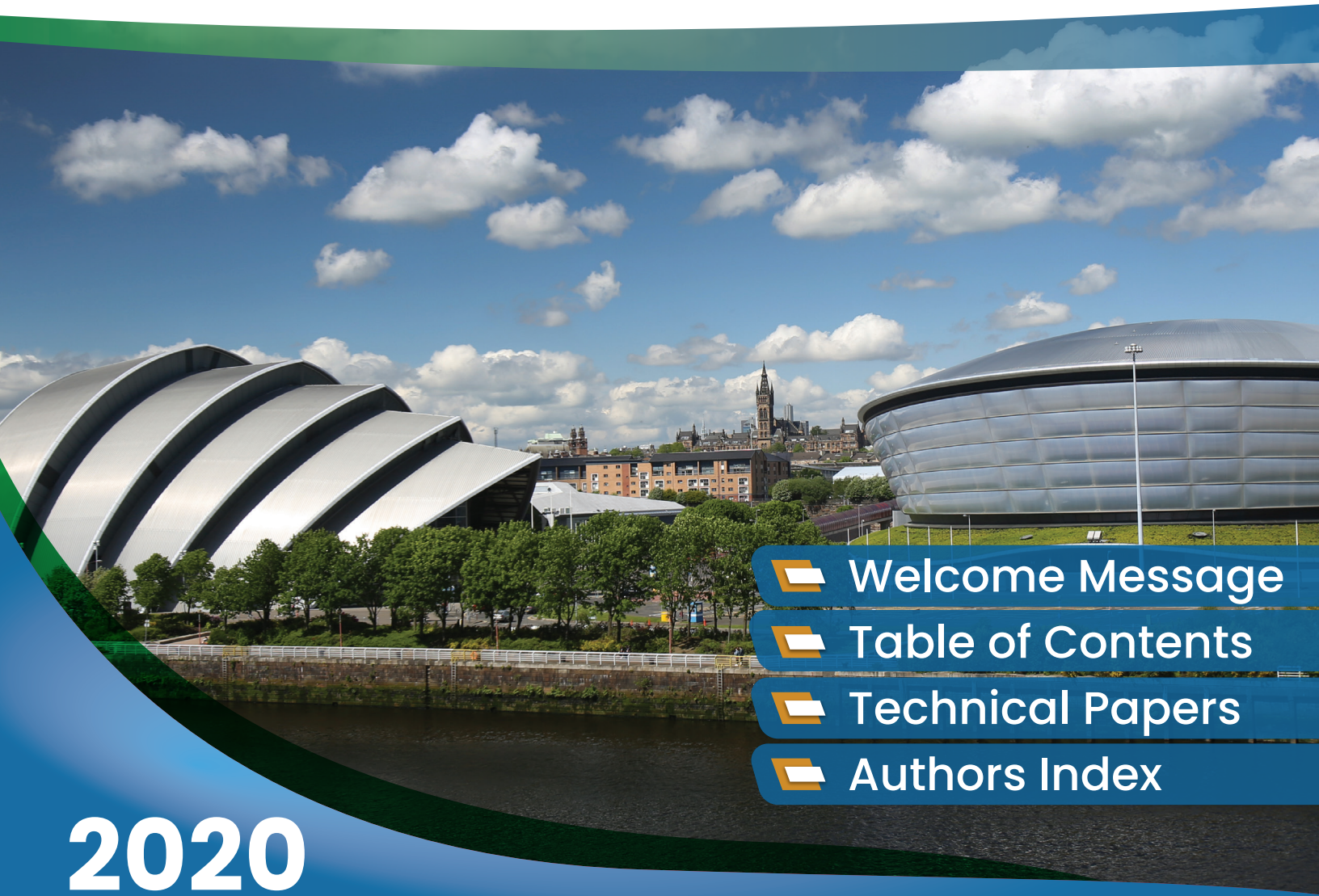
2020 International Joint Conference on Neural Networks (IJCNN)



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2020 CONFERENCE PROCEEDINGS

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WELCOME MESSAGE FROM THE CHAIR

On behalf of the Organizing Committee, it is my greatest pleasure to welcome you to the 2020 International Joint Conference on Neural Networks (IJCNN) held virtually, as part of the IEEE World Congress on Computational Intelligence (IEEE WCCI) 2020. IJCNN 2020 is jointly organized by the IEEE Computational Intelligence Society (CIS) and the International Neural Network Society (INNS). For IJCNN 2020 (and when WCCI is organized in even-numbered years) IEEE CIS is the lead society and financial sponsor. IJCNN 2020 is the major event in the field of neural networks and learning systems, covering all topics in the field from theory to applications.

IJCNN provides a forum for researchers, students and professionals in the field of Neural Network and Learning Systems. The meeting is a unique opportunity to present our research to other colleagues and exchange the latest advances in theories, technologies and practices. It is tremendous opportunity also to know what the trending topics are, the current state-of-the-art and the main applications of Neural Networks and Learning Systems.

IJCNN 2020 accepted 1134 papers for inclusion in the conference program at an acceptance rate of 57%. Out of this, 608 papers are being presented in oral sessions and 526 in poster sessions. The largest contributors by country are China (29.7%), USA (15.7%), UK (15.2%), Brazil (10.1%), Australia (8.8%), Japan (7.8%) and India (7.1%). The country assigned to a paper was the country from which its first author came.

The program of IJCNN 2020 reflects a rich variety of topics: Deep Learning, Extreme Learning Machines, Feed forward NNs and Supervised Learning, Online and Incremental Learning, Spiking Neural Networks, Unsupervised Learning and Clustering, ADP and Reinforcement Learning, Recurrent NNs and Reservoir Networks, Concept Drift, ML Methods Robust to Large Outliers, Complex Valued NNs, Neural Models and Computation, Memory and Sensory Systems, Semi-supervised Learning and Neuromorphic Hardware. Likewise, a large number of papers deal with a great variety of applications.

I would like to express my gratitude to all the authors who submitted their work, to the program committee and reviewers, the organizers of 55 Special Sessions as well as to all the participants of IJCNN 2020. Special thanks to the General Co-Chairs: Amir Hussain, Marios Polycarpou, Xin Yao; to the IJCNN 2020 Technical Chairs: Peter Erdi, Daniel Levine, Seiichi Ozawa, Chrisina Jayne, and Minho Lee, and to all WCCI 2020 chairs. Last but not least, I would like to thank to the plenary speakers – Alexander Gorban, Kunihiko Fukushima, Steve Grossberg, Michael Bronstein and Johan Suykens.

I would also like to acknowledge the support of the IEEE Computational Intelligence Society (CIS), and the International Neural Network Society (INNS).

Asim Roy, IJCNN 2020 Conference Chair

SUNDAY, JULY 19

Workshop I-W1: Workshop: Sentic Computing
Sunday, July 19, 11:30AM-1:30PM, Room: IJCNN Workshop, Chair: Erik Cambria

11:30AM **Deciphering Public Opinion of Nuclear Energy on Twitter [#21074]**
Khatua Aparup, Erik Cambria, Ho Shirley and Na JinCheon
Nanyang Technological University, Singapore

11:50AM **Constrained Manifold Learning for Videos [#21233]**
Iti Chaturvedi and Jin Xiang Choy
James Cook University, Australia; Nanyang Technological University, Singapore

12:10PM **New Avenues in Mobile Tourism [#21736]**
Guerreiro Claudia, Erik Cambria and Nguyen Hien T
Nanyang Technological University, Singapore; Ho Chi Minh City University of Food Industry, Viet Nam

12:30PM **An hardware-aware image polarity detector enhanced with visual attention [#21934]**
Edoardo Ragusa, Tommaso Apicella, Christian Gianoglio, Rodolfo Zunino and Paolo Gastaldo
DITEN, University of genoa, Italy; UDITEN, University of Genoa, Italy

12:50PM **SENSE: a Student Performance Quantifier using Sentiment Analysis [#21964]**
Johanna Watkins, Marcos Fabietti and Mufti Mahmud
Dept. of Computing \& Technology, Nottingham Trent University, Clifton Campus, NG11 8NS - Nottingham, United Kingdom

MONDAY, JULY 20

Session I-R1: Feedforward neural networks
Monday, July 20, 3:30PM-5:30PM, Room: IJCNN Room 1, Chair: Nabin Sharma, Ajith Abraham

3:30PM **New Insights on Learning Rules for Hopfield Networks: Memory and Objective Function Minimisation [#20209]**
Pavel Tolmachev and Jonathan Manton
The University of Melbourne, Australia

3:50PM **Should I Stay or Should I Grow? A Dynamic Self-Governed Growth for Determining Hidden Layer Size in a Multilayer Perceptron [#20971]**
Matt Ross, Nareg Berberian and Chartier Sylvain
University of Ottawa, Canada

4:10PM **NodeDrop: A Method for Finding Sufficient Network Architecture Size [#20689]**
Louis Jensen, Jacob Harer and Chin Sang
Boston University, United States

4:30PM **Crowd Counting from Unmanned Aerial Vehicles with Fully-Convolutional Neural Networks [#20348]**
Giovanna Castellano, Ciro Castiello, Corrado Mencar and Gennaro Vessio
Department of Computer Science, University of Bari, Italy

4:50PM **Nucleus Neural Network: A Data-driven Self-organized Architecture [#20225]**
Jia Liu, Haibo He, Maoguo Gong and Wenhua Zhang
Nanjing University of Science and Technology, China; University of Rhode Island, United States; Xidian University, China

5:10PM **RAPDARTS: Resource-Aware Progressive Differentiable Architecture Search [#20005]**
Sam Green, Craig Vineyard, Ryan Helinski and Cetin Koc
Semiotic AI, United States; Sandia National Laboratories, United States; University of California, Santa Barbara, United States

Special Session I-SS1: Randomization-Based Deep and Shallow Learning Algorithms
Monday, July 20, 3:30PM-5:30PM, Room: IJCNN Room 2, Chair: P. N. Suganthan

3:30PM **Data-Driven Randomized Learning of Feedforward Neural Networks [#20081]**
Grzegorz Dudek
Czestochowa University of Technology, Poland

3:50PM **Multi-Label classifier based on Kernel Random Vector Functional Link Network [#20722]**
Vikas Chauhan, Aruna Tiwari and ShivVrat Arya
Indian Institute of Technology Indore, India; The University of Texas at Dallas, United States

4:10PM **A Non-iterative Radial Basis Function Based Quick Convolutional Neural Network [#21006]**
Toshi Sinha and Brijesh Verma
Central Queensland University, Australia

4:30PM **A Low Complexity Decentralized Neural Net with Centralized Equivalence using Layer-wise Learning [#21449]**
Xinyue Liang, Alireza M. Javid, Mikael Skoglund and Saikat Chatterjee
KTH Royal Institute of Technology, Sweden

4:50PM **Exploring the correlation between random convolutional architectures and the trained equivalent [#21741]**
Nicholas Evans, Jo Plested and Tom Gedeon
Australian National University, Australia

5:10PM **Regularized robust fuzzy least squares twin support vector machine for class imbalance learning [#20756]**
M.A. Ganaie, M. Tanveer and P.N. Suganthan
Indian Institute of Technology Indore, India; NTU Singapore, Singapore

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Xiaobo Shu, Mengge Xue, Yanzeng Li, Zhenyu Zhang and Tingwen Liu
Institute of Information Engineering, Chinese Academy of Sciences. Beijing, China, China

3:50PM **Exploiting Cliques for Granular Computing-based Graph Classification [#21082]**
Luca Baldini, Alessio Martino and Antonello Rizzi
University of Rome "La Sapienza", Italy

4:10PM **Let the Margin SlidE+- for Knowledge Graph Embeddings via a Correntropy Objective Function [#21516]**
Mojtaba Nayyeri, Xiaotian Zhou, Sahar Vahdati, Reza Izanloo, Hamed Shariat Yazdi and Jens Lehmann
University of Bonn, Germany; University of Oxford, United Kingdom; Ferdowsi University of Mashhad, Iran; Fraunhofer IAIS, Bonn, German, Germany

4:30PM **Correlated Mixed Membership Modeling for Somatic Mutations [#21737]**
Rahul Mehta and Muge Karaman
University of Illinois at Chicago, United States

4:50PM **Ring Reservoir Neural Networks for Graphs [#21783]**
Claudio Gallicchio and Alessio Micheli
University of Pisa, Italy

5:10PM **Generalising Recursive Neural Models by Tensor Decomposition [#21358]**
Daniele Castellana and Davide Bacciu
University of Pisa, Italy

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Arthur Caldas, Eanes Pereira, Niago Leite, Arthur Oliveira and Ellen Lucena
Federal University of Campina Grande, Brazil

3:50PM **Active Stacking for Heart Rate Estimation [#20298]**
Dongrui Wu, Chenfeng Guo, Feifei Liu and Chengyu Liu
Huazhong University of Science & Technology, China; Active Stacking for Heart Rate Estimation, China; Southeast University, China

4:10PM **A Hybrid CNN-LSTM Architecture for Detection of Coronary Artery Disease from ECG [#20753]**

Rohan Banerjee, Avik Ghose and Kayapanda Muthana Mandana

Tata Consultancy Services, India; Fortis Hospitals, India

4:30PM **Evaluation criteria for closed-loop adaptive dynamic discrete-continuous brain-computer interfaces: clinical study case with tetraplegic patient. [#20854]**

Felix Martel, Tamara Dupuy, Alexandre Moly, Stephan Chabardes and Tetiana Aksenova

Univ. Grenoble Alpes, CEA, LETI, Clinatec, F-38000 Grenoble, France; Centre Hospitalier Universitaire Grenoble Alpes, 38700, La Tronche, France

4:50PM **Reconstructing Natural Scenes from fMRI Patterns using BigBiGAN [#21307]**

Milad Mozafari, Leila Reddy and Rufin VanRullen

CerCo, CNRS, France; CerCo, CNRS and ANITI, Universite de Toulouse, France

5:10PM **A Novel Blending Hilbert -Kolmogorov Approach for Epileptic Seizures detection [#21546]**

Ahmed Adda and Hadjira Benoudnine

University of Abdelhmaid Ibn Badis, Mostagnem, Algeria, Algeria; University of Abdelhmaid Ibn Badis, Mostagnem, Algeria

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Felix Escalona, Diego Viejo, Robert Fisher and Miguel Cazorla

Universidad de Alicante, Spain; University of Edinburgh, United Kingdom

3:50PM **Human Pose Estimation Based In-Home Lower Body Rehabilitation System [#21585]**

Ying Li, Chenxi Wang, Yu Cao, Benyuan Liu, Joanna Tan and Yan Luo

University of Massachusetts Lowell, United States; Encompass Rehabilitation Hospital, United States

4:10PM **Graph Convolutional Networks for Target-oriented Opinion Words Extraction with Adversarial Training [#21311]**

Yan Zhou, Wei Jiang, Po Song, Yipeng Su, Tao Guo, Jizhong Han and Songlin Hu

Institute of Information Engineering, Chinese Academy of Sciences, China; Department of Energy Internet, State Grid Corporation of China, China

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Pravendra Singh, Pratik Mazumder and Vinay P. Namboodiri

Indian Institute of Technology Kanpur, India

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Xiaocong Du, Shreyas Kolala Venkataramanaiah, Zheng Li, Jae-sun Seo, Frank Liu and Yu Cao

Arizona State University, United States; Oak Ridge National Lab, United States

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Tuan Pham Minh, Daniel Kottke, Anna Tsarenko, Christian Gruhl and Bernhard Sick
University of Kassel, Germany

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James Lindsay and Sidney Givigi
Royal Military College of Canada, Canada; Queen's University, Canada

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Hideki Oki, Motoshi Abe, Jyunichi Miyao and Takio Kurita
Hiroshima University, Japan

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Kun Deng and Shaochun Wu
Shanghai University, China

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Ankita Singh and Shayok Chakraborty
Florida State University, United States

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Henri De Plaen, Michael Fanuel and Johan A. K. Suykens
Department of Electrical Engineering, ESAT-STADIUS, KU Leuven, Belgium

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Masato Ishikawa and Hiroyuki Torikai
Hosei University, Japan

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Kentaro Takeda and Hiroyuki Torikai
Hosei University, Japan

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Marinus Toman, John Joseph Wade, Liam McDaid and Jim Harkin
Ulster University, Northern Ireland

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Zhi-An Huang, Rui Liu and Kay Chen Tan
Department of Computer Science, City University of Hong Kong, Kowloon Tong, Hong Kong, China

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Binbin Qiu, Jinjin Guo, Xiaodong Li and Yunong Zhang

Sun Yat-sen University, China

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Weili Guo, Liping Xie, Zhenyong Fu, Jianhui Guo, Guochen Pang and Jian Yang

1. PCA Lab, Key Lab of Intelligent Perception and Systems for High-Dimensional Information of Ministry of Education, and Jiangsu Key Lab of Image and Video Understanding for Social Security, School of Computer Science and Engineering, Nanjing University o, China; Key Laboratory of Measurement and Control of CSE, Ministry of Education, School of Automation, Southeast University, Nanjing, P.R. China, China; PCA Lab, Key Lab of Intelligent Perception and Systems for High-Dimensional Information of Ministry of Education, and Jiangsu Key Lab of Image and Video Understanding for Social Security, School of Computer Science and Engineering, Nanjing University of S, China; School of Automation and Electrical Engineering, Linyi University, Linyi, P.R. China, China

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Stefan Duffner and Christophe Garcia

LIRIS, University of Lyon, France

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Gitesh Dawer, Yangzi Guo, Sida Liu and Adrian Barbu

Apple Inc., United States; Florida State University, United States

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Kin Wai Cheuk, Agres Kat and Herremans Dorien

SUTD, Singapore; NUS, Singapore

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Steven Thompson, Paul Fergus, Carl Chalmers and Denis Reilly

Liverpool John Moores University, United Kingdom

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Arijit Nandi, Nanda Dulal Jana and Swagatam Das

Department of Computer Science and Engineering, National Institute of Technology Durgapur-713209, India; ECS Unit, Indian Statistical Institute, Kolkata, India

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Anna Sergeevna Bosman, Andries Petrus Engelbrecht and Marde Helbig

University of Pretoria, South Africa; Stellenbosch University, South Africa; Griffith University, Australia

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Ayyaz-Ul-Haq Qureshi, Hadi Larijani, Nhamoinesu Mtetwa, Mehdi Yousefi and Abbas Javed

Glasgow Caledonian University, Glasgow, United Kingdom; COMSATS University Islamabad, Lahore Campus, Pakistan

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Paolo Arena, Carmelo Fabrizio Blanco, Alessia Li Noce, Luca Patane' and Salvatore Taffara

University of Catania, Italy; University of Messina, Italy

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Richard McAllister and John Sheppard

Montana State University, United States

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V. G. Kaburlasos, E. Vrochidou, C. Lytridis, G. A. Papakostas, T. Pachidis, M. Manios, S. Mamalis, T. Merou, S. Koundouras, S. Theocharis, G. Siavalas, C. Sgouros and P. Kyriakidis

International Hellenic University (IHU), HUMAIN-Lab, Greece; International Hellenic University (IHU), School of Agricultural Biotechnology and Oenology, Greece; Euroaction, Thessaloniki, Greece; Ktima Pavlidis, Drama, Greece

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Kin Wai Cheuk, Yin-Jyun Luo, Balamurali B.T., Gemma Roig and Dorien Herremans

SUTD, Singapore; Goethe University Frankfurt am Main, Germany

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Indian Institute of Technology Patna, India; Dublin City University, Ireland

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Marius Jahrens and Thomas Martinetz

University of Luebeck, Germany

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Ismael Araujo and Adenilton da Silva

Universidade Federal Rural de Pernambuco, Brazil; Universidade Federal de Pernambuco, Brazil

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Fernando M De Paula Neto, Gustavo I S Filho and Claudio A. Monteiro

Centro de Informatica, Universidade Federal de Pernambuco, Brazil; Universidade Federal de Pernambuco, Brazil

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Mohit Goyal, Rajan Goyal and Brejesh Lall

University of Illinois at Urbana Champaign, United States; Indian Institute of Technology, Delhi, India

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Varun Bhatt, Shalini Shrivastava, Tanmay Chavan and Udayan Ganguly

University of Alberta, Canada; Indian Institute of Technology Bombay, India

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Naresh Balaji Ravichandran, Anders Lansner and Pawel Herman

KTH Royal Institute of Technology, Sweden; Stockholm University, KTH Royal Institute of Technology, Sweden

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Lei Sha, Chen Shi, Qi Chen, Lintao Zhang and Houfeng Wang

Peking University, China; Microsoft Research, China

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Qianlong Wang and Jiangtao Ren
Sun Yat-sen University, China

P302 A Transfer Learning Method with Multi-feature Calibration for Building Identification [#20136]
Jiafa Mao, Linlin Yu, Hui Yu, Yahong Hu and Weiguo Sheng
Zhejiang University of Technology, China; Hangzhou Normal University, China

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Wenjie Lu, Jie Zhou, Leiying Zhou, Gongshen Liu and Quanhai Zhang
School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, China

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Yong Liao, Kui Meng, Jianshen Zhang and Gongshen Liu
Shanghai Jiao Tong University, China

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Xiaocong Chen, Chaoran Huang, Lina Yao, Xianzhi Wang, Wei Liu and Wenjie Zhang
University of New South Wales, Australia; University of Technology Sydney, Australia

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Zhe Liu, Lina Yao, Xianzhi Wang, Lei Bai and Jake An
University of New South Wales, Australia; University of Technology Sydney, Australia; Raiz Investment, Australia

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Nuno Dionisio, Fernando Alves, Pedro Ferreira and Alysson Bessani
LASIGE, Faculty of Sciences, University of Lisbon, Portugal

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Gabriel Salomon, Rayson Laroca and David Menotti
Federal University of Parana (UFPR), Brazil

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Leonardo S. Paulucio, Thiago M. Paixao, Rodrigo F. Berriel, Alberto F. De Souza, Claudine Badue and Thiago Oliveira-Santos
Universidade Federal do Espirito Santo (UFES), Brazil; Instituto Federal do Espirito Santo (IFES), Brazil

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Sai Narsi Reddy Donthi Reddy and Reza Derakhshani
University of Missouri at Kansas City, United States

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Tianhao Shen and Xiaojie Wang
Beijing University of Posts and Telecommunications, China

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Shuyun Ji, Jinglin Li, Quan Yuan and Jiawei Lu
Beijing University of Posts and Telecommunications, China

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Mikel Gjergji, Vanessa Weber, Luiz Silva, Rodrigo Gomes, Thiago de Araujo, Hemerson Pistori and Marco Alvarez

University of Rhode Island, United States; Dom Bosco Catholic University, Brazil; Brazilian Agricultural Research Corporation, Brazil; Federal University of Ceara, Brazil

P314 Using Self-Attention LSTMs to Enhance Observations in Goal Recognition [#20931]

Leonardo Amado, Gabriel Paludo Licks, Matheus Marcon, Ramon Fraga Pereira and Felipe Meneguzzi

PUCRS, Brazil

P315 Neural Reasoning, Fast and Slow, for Video Question Answering [#20141]

Thao Minh Le, Vuong Le, Svetha Venkatesh and Truyen Tran

Deakin University, Australia

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Anmol Bhasin, Gaurav Mathur, Promod Yenigalla and Bharatram Natarajan

Samsung R&D Institute, Bangalore India, India

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Weiqing Huang, Yi Liu, Shaoyi Zhu, Siye Wang and Yanfang Zhang

School of Computer and Information Technology, Beijing Jiaotong University;Institute of Information Engineering Chinese Academy of Sciences;School of Cyber Security, University of Chinese Academy of Sciences, China; Institute of Information Engineering Chinese Academy of Sciences;School of Cyber Security, University of Chinese Academy of Sciences, China

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Mingjun Duan and Yubai Li

University of Electronic Science and Technology of China, China

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Quanbin Wang and Ying Tan

Key Laboratory of Machine Perception (MOE) Department of Machine Intelligence, School of Electronics Engineering and Computer Science, China

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Mengtao Sun, Ibrahim Hameed and Hao Wang

Norwegian University of Sciences and Technology, Norway

Session I-R4: Deep neural networks

Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Room 1, Chair: Baozhou Zhu, Zaid Al-Ars

5:45PM Improving Discrete Latent Representations With Differentiable Approximation Bridges [#20817]

Jason Ramapuram and Russ Webb

University of Geneva, Switzerland; Apple, United States

6:05PM Meta-Path Generation Online for Heterogeneous Network Embedding [#20411]

Tao Liang and Jin Liu

1.Institute of Information Engineering,Chinese Academy of Sciences.2.School of Cyber Security,University of Chinese Academy of Sciences, China

6:25PM Efficient Search for the Number of Channels for Convolutional Neural Networks [#20102]

Hui Zhu, Zhulin An, Chuanguang Yang, Xiaolong Hu, Kaiqiang Xu and Yongjun Xu

Institute of Computing Technology, Chinese Academy of Sciences, China

6:45PM **Pruning Depthwise Separable Convolutions for MobileNet Compression [#21727]**
Cheng-Hao Tu, Jia-Hong Lee, Yi-Ming Chan and Chu-Song Chen
Institute of Information Science, Academia Sinica, Taiwan

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Andrey Savchenko
National Research University Higher School of Economics, Russia

7:25PM **NASB: Neural Architecture Search for Binary Convolutional Neural Networks [#20551]**
Baozhou Zhu, Zaid Al-Ars and Peter Hofstee
Delft University of Technology, Netherlands; IBM Systems, Netherlands

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Lerina Aversano, Mario Luca Bernardi, Marta Cimitile and Riccardo Pecori
University of Sannio, Italy; Unitelma Sapienza University, Italy

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Bharat Richhariya and M. Tanveer
Indian Institute of Technology Indore, India

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Omar Kawi, Kathy Clawson, Paul Dunn, Daniel Knight, Jonathan Hodgson and Yonghong Peng
University of Sunderland, United Kingdom; Rokshaw Laboratories, United Kingdom; Manchester Metropolitan University, United Kingdom

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Luca Brunese, Francesco Mercaldo, Alfonso Reginelli and Antonella Santone
University of Molise, Italy; IIT-CNR, Italy; University of Campania, Italy

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Ghosia Shaukat, Saeeda Naz, Imran Razzak and Tariq Khan
GPGCC, Pakistan; Deakin, Australia

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Alexandre Maciel-Guerra, Grazziela P. Figueredo, Eliane Marti, Marcos J. C. Alcocer and Jamie Twycross
University of Nottingham, United Kingdom; University of Bern, Switzerland

Special Session I-SS35: Deep and Generative Adversarial Learning
Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Room 3, Chair: Ariel Ruiz-Garcia

5:45PM **Few Features Attack to Fool Machine Learning Models through Mask-based GAN [#20218]**
Feng Chen, Yunkai Shang, Jincheng Hu and Bo Xu
Institute of Automation, Chinese Academy of Sciences, China; College of Electrical and Information Engineering, Hunan University, China

6:05PM **Brain MRI Tumor Segmentation with Adversarial Networks [#20937]**
Edoardo Giacomello, Daniele Loiacono and Luca Mainardi
Politecnico di Milano, Italy

6:25PM **OptiGAN: Generative Adversarial Networks for Goal Optimized Sequence Generation [#21031]**
Mahmoud Hossam, Trung Le, Michael Papasimeon, Viet Huynh and Dinh Phung
Monash University, Australia; The University of Melbourne, Australia

6:45PM **A Guided Learning Approach for Generative Adversarial Networks [#20536]**
Sidhant Nagpal, Siddharth Verma, Shikhar Gupta and Swati Aggarwal
Netaji Subhas Institute of Technology, University of Delhi, India

7:05PM **Catastrophic forgetting and mode collapse in GANs [#20846]**
Hoang Thanh-Tung and Truyen Tran
Deakin University, Australia

7:25PM **Generative Adversarial Stacked Autoencoders for Facial Pose Normalization and Emotion Recognition [#21457]**
Ariel Ruiz-Garcia, Vasile Palade, Mark Elshaw and Mariette Awad
Coventry University, United Kingdom; American University of Beirut, Lebanon

Special Session I-SS59B: Artificial Intelligence and Advanced Machine Learning for Biomedical Signal Processing
Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Room 4, Chair: Larbi Boubchir

5:45PM **A Parallel Method for Anatomical Structure Segmentation based on 3D Seeded Region Growing [#21589]**
Paulo Lacerda, Jose Gonzalez, Nazareth Rocha, Flavio Seixas, Celio Albuquerque, Esteban Clua and Aura Conci
Universidade Federal Fluminense, Brazil

6:05PM **Predicting body measures from 2D images using Convolutional Neural Networks [#21725]**
Joao W. M. de Souza, Gabriel B. Holanda, Roberto F. Ivo, Shara Shami A. Alves, Suane Pires P. da Silva, Virginia X. Nunes, Luiz Lannes Loureiro, C. H. Dias-Silva and P. Pedrosa Reboucas Filho
IFCE, Brazil; UFC, Brazil

6:25PM **An Optimized Approach to Huntington's Disease Detecting via Audio Signals Processing with Dimensionality Reduction [#21760]**
Matheus T. Guimaraes, Aldisio G. Medeiros, Jefferson S. Almeida, Marcos Falcao y Martin, Robertas Damasevicius, Rytis Maskeliunas, Cesar L. Cavalcante and Pedro Pedrosa Reboucas Filho
UFC, Brazil; Kaunas University of Technology, Lithuania; IFCE, Brazil

6:45PM **Gender Classification of EEG Signals using a Motif Attribute Classification Ensemble [#21834]**
Jean Li, Jeremiah Deng, Dirk De Ridder and Divya Adhia
University of Otago, New Zealand

7:05PM **2ST-UNet: 2-Stage Training Model using U-Net for Pneumothorax Segmentation in Chest X-Rays [#21952]**
Ayat Abedalla, Malak Abdullah, Mahmoud Al-Ayyoub and Elhadj Benkhelifa
Jordan University of Science and Technology, Jordan; University of Manchester, United Kingdom; Staffordshire University, United Kingdom

7:25PM **Universal Adversarial Perturbations in Epileptic Seizure Detection [#21413]**
Amir Aminifar
Swiss Federal Institute of Technology (EPFL), Switzerland

Session I-BP : Regular Best Paper Award
Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Room 5, Chair: Daniel Levine

5:45PM **Distributed Fault Accommodation for a Class of Interconnected Nonlinear Systems with Event-Triggered Inter-Communications [#21033]**
Dong Zhao and Marios M. Polycarpou
University of Cyprus, Cyprus

6:05PM **Regularized Training of Convolutional Autoencoders using the Renyi-Stratonovich Value of Information [#20975]**
Isaac Sledge and Jose Principe
University of Florida, United States

6:25PM **A Neurobiological Schema Model for Contextual Awareness in Robotics [#20408]**
Tiffany Hwu, Hirak Kashyap and Jeffrey Krichmar
HRL Laboratories, LLC, United States; University of California, Irvine, United States

6:45PM **On Adversarial Examples and Stealth Attacks in Artificial Intelligence Systems [#21348]**
Ivan Y. Tyukin, Desmond Higham and Alexander N. Gorban
University of Leicester, United Kingdom; University of Edinburgh, United Kingdom

Session I-R5: Supervised learning 2
Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Room 6, Chair: Wei-Chang Yeh

5:45PM **A review of open-source machine learning algorithms for twitter text sentiment analysis and image classification [#20432]**
Conor Lynch, Christian O Leary, Gary Smith, Rose Bain, Jacqueline Kehoe, Alex Vakaloudis and Richard Linger
Cork Institute of Technology, Ireland

6:05PM **ArcGrad: Angular Gradient Margin Loss for Classification [#21234]**
Wu Jiantao and Wang Lin
Shandong Provincial Key Laboratory of Network Based Intelligent Computing, China

6:25PM **Performance measures for evolving predictions under delayed labelling classification [#21549]**
Maciej Grzenda, Heitor Murilo Gomes and Albert Bifet
Warsaw University of Technology, Poland; University of Waikato, New Zealand

6:45PM **CS-ARF: Compressed Adaptive Random Forests for Evolving Data Stream Classification [#20893]**
Maroua Bahri, Heitor Murilo Gomes, Albert Bifet and Silviu Maniu
Telecom Paris, France; University of Waikato, New Zealand; Universite Paris-Sud, France

7:05PM **Decision Surfaces of Localized Classifiers [#21706]**
CScott Brown and Ryan G Benton
University of South Alabama, United States

7:25PM **Multi-target regression via output space quantization [#20199]**
Eleftherios Spyromitros-Xioufis, Konstantinos Sechidis and Ioannis Vlahavas
Aristotle University of Thessaloniki, Greece

Session I-R6: Cognitive Neuroscience and Neurocognition
Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Room 7, Chair: Amit Konar

5:45PM **Analyzing the Capacity of Distributed Vector Representations to Encode Spatial Information [#20450]**
Florian Mirus, Terrence C. Stewart and Jorg Conradt
BMW AG, Germany; Applied Brain Research Inc., Canada; KTH Royal Institute of Technology, Sweden

6:05PM **Adaptive Inner-reward Shaping in Sparse RewardGames [#21045]**
Yang Dong and Tang Yuhua
National University of Defense Technology, China

6:25PM **Joint Representation Learning with Deep Quadruplet Network for Real-Time Visual Tracking [#21877]**
Dawei Zhang and Zhonglong Zheng
Zhejiang Normal University, China

6:45PM **Emotion Recognition under Sleep Deprivation Using a Multimodal Residual LSTM Network. [#21188]**
Le-Yan Tao and Bao-Liang Lu
Shanghai Jiao Tong University, China

7:05PM **Vowel Sound Imagery Decoding by a Capsule Network for the Design of an Automatic Mind-Driven Type-Writer [#21174]**
Sayantani Ghosh, Mousumi Laha, Amit Konar, Pratyusha Rakshit and Atulya K. Nagar
Jadavpur University, India; Liverpool Hope University, United Kingdom

Plenary Poster Session I-P3: Recurrent Neural Networks and SOM
Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Poster Room 1, Chair: Jin Hu

P501 **Multi-Decoder RNN Autoencoder Based on Variational Bayes Method [#20181]**
Daisuke Kaji, Kazuho Watanabe and Masahiro Kobayashi
Denso corporation, Japan; Toyohashi University of Technology, Japan

P502 **Design of a Morlet Wavelet control algorithm using super-twisting sliding modes applied to an induction machine [#21456]**
Daniel Magallon, Carlos Castaneda, Francisco Jurado and Onofre Morfin
Universidad de Guadalajara, Mexico; Tecnologico Nacional de Mexico IT La Laguna, Mexico; Universidad Autonoma de Ciudad Juarez, Mexico

P503 **Sliding Hierarchical Recurrent Neural Networks for Sequence Classification [#21183]**
Bo Li, Zhonghao Sheng, Wei Ye, Jinglei Zhang, Kai Liu and Shikun Zhang
Peking University, China; Clemson University, United States

P504 **The BlockChain Neural Network: Neuron as a Service [#20406]**
Will Serrano
Alumni Imperial College London, United Kingdom

P505 **Wavelet Denoising and Attention-based RNN-ARIMA Model to Predict Forex Price [#21072]**
Zhiwen Zeng and Matloob Khushi
School of Computer Science, The University of Sydney, Australia

P506 **Multi-level Visual Fusion Networks for Image Captioning [#20171]**
Zhou Dongming, Zhang Canlong, Li Zhixin and Wang Zhiwen
Guangxi Normal University, China; Guangxi University of Science and Technology, China

P507 Improve the LSTM and GRU model for small training data by wavelet transformation [#20454]
Tzeng Jengnan, Lai Yen-Ru, Lin Ming-Lai, Lin Yu-Han and Shih Yu-Cheng
Dept. of Mathematical Sciences National Cheng-Chi University, Taiwan

P508 A new batch SOM algorithm for relational data with weighted medoids. [#20485]
Laura Marino and Francisco de Carvalho
Universidade Federal de Pernambuco-UFPE, Brazil

P509 Exploring Time-Series Motifs Through DTW-SOM [#21627]
Maria Ines Silva and Roberto Henriques
Nova Information Management School (NOVA IMS), Portugal

P510 Visualization of topographical internal representation of learning robots [#21206]
Shiori Kuramoto, Hideyuki Sawada and Pitoyo Hartono
Dept. of Applied Physics, School of Advanced Science and Engineering, Waseda University, Japan, Japan; School of Engineering Chukyo University, Japan

P511 A Framework for the Analysis of Deep Neural Networks in Aerospace applications using Bayesian Statistics [#21610]
Yuning He and Johann Schumann
NASA ARC, United States; KBR, NASA Ames, United States

P512 Bio-Inspired System for Electricity Price Forecast in the Brazilian Market [#21909]
Lidio Mauro Lima Campos, Roberto Celio Limao de Oliveira, Jherson Haryson Almeida Pereira and Danilo Souza Duarte
UFPA, Brazil

P513 RCapsNet: A Recurrent Capsule Network for Text Classification [#20543]
Junfeng Hu, Jun Liao, Li Liu and Wenchao Ma
Chongqing University, China

Plenary Poster Session I-P4: Applications of deep networks, big data
Monday, July 20, 5:45PM-7:45PM, Room: IJCNN Poster Room 2, Chair: Dhruval Jain

P701 Poem Generation Using Transformers and Doc2Vec Embeddings [#21219]
Marvin Santillan and Arnulfo Azcarraga
De La Salle University, Philippines

P702 Hybrid Pooling Networks for Few-shot Learning [#20394]
Tan Shaoqing and Yang Ruoyu
Nanjing University, China

P703 Redistributing and Re-Stylizing Features for Training a Fast Photorealistic Stylizer [#20420]
Chunpeng Wu, Bin Ni and Hai Li
Duke University, United States; Quantil Inc., United States

P704 Conditional Transferring Features: Scaling GANs to Thousands of Classes with 30% Less High-Quality Data for Training [#21333]
Chunpeng Wu and Hai Li
Duke University, United States

P705 On-device Filtering of Social Media Images for Efficient Storage [#21708]
Dhruval Jain, Debi Mohanty, Sanjeev Roy, Naresh Purre and Sukumar Moharana
Samsung R&D Institute Bengaluru, India; Samsung Research Institute Bangalore, India

P706 Single Image Super-Resolution with Hierarchical Receptive Field [#20167]
Ding Qin and Xiaodong Gu
Fudan University, China

P707 A Simplified Deep Network Architecture on Optic Cup and Disc Segmentation [#21148]

Guan-Ru Huang and Tien-Ruey Hsiang

National Taiwan University of Science and Technology, Taiwan

P708 Acoustic Scene Classification using Single Frequency Filtering Cepstral Coefficients and DNN [#20072]

Chandrasekhar Paseddula and Suryakanth.V Gangashetty

nternational Institute of Information Technology, Hyderabad, India

P709 Towards Real-time Video Content Detection in Resource Constrained Devices [#20123]

Jhonatan Geremias, Eduardo Viegas, Altair Santin and Alceu Britto Jr

Pontifical Catholic University of Parana, Brazil

P710 Cross-Representation Transferability of Adversarial Attacks: From Spectrograms to Audio Waveforms [#21007]

Karl Michel Koerich, Mohammad Esmailpour, Sajjad Abdoli, Souza Britto Jr. Alceu and Alessandro Lameiras Koerich

McGill University, Canada; ETS Montreal, Canada; PUCPR, Brazil

P711 CQ-VQA: Visual Question Answering on Categorized Questions [#21852]

Aakansha Mishra, Ashish Anand and Prithwijit Guha

IIT Guwahati, India

P712 Generating Chinese Poetry from Images via Concrete and Abstract Information [#20631]

Yusen Liu, Dayiheng Liu, Jiancheng Lv and Yongsheng Sang

Sichuan University, China

P713 BDANN: BERT-Based Domain Adaptation Neural Network for Multi-Modal Fake News Detection [#21911]

Tong Zhang, Di Wang, Huanhuan Chen, Zhiwei Zeng, Wei Guo, Chunyan Miao and Lizhen Cui

Shandong University, China; Nanyang Technological University, Singapore; University of Science and Technology of China, China

P714 Dynamic Attention Aggregation with BERT for Neural Machine Translation [#20431]

JiaRui Zhang, HongZheng Li, ShuMin Shi, HeYan Huang, Yue Hu and XiangPeng Wei

Institute of Information Engineering, Chinese Academy of Sciences, China; School of Computer Science and Technology, Beijing Institute of Technology, China

P715 Novel Fast Binary Hash for Content-based Solar Image Retrieval [#21646]

Rafal Grycuk and Rafal Scherer

Czestochowa University of Technology, Poland

P716 Predicting Outcomes of Chemical Reactions: A Seq2Seq Approach with Multi-view Attention and Edge Embedding [#21896]

Xiao Xia, Shang Chao, Bi Jinbo and Rajasekaran Sanguthevar

University of Connecticut, United States

P717 Improving Barnes-Hut t-SNE Scalability in GPU with Efficient Memory Access Strategies [#21581]

Bruno Meyer, Aurora Pozo and Wagner Zola

Federal University of Parana, Brazil

P718 Learning Word Representation for the Cyber Security Vulnerability Domain [#21599]

Sara Mumtaz, Carlos Rodriguez, Boualem Benatallah, Mortada Al-Banna and Shayan Zamanirad

University of New South Wales, Sydney, Australia; Catholic University, Paraguay

P719 A Large-scale Simulation Dataset: Boost the Detection Accuracy for Special Weather Conditions [#20913]

Dongfang Liu, Yiming Cui, Cao ZHiwen and Yingjie Chen

Purdue University, United States; University of Florida, United States

P720 Bio-inspired technique for improving machine learning speed and big data processing [#20562]

Andronicus A. Akinyelu

University of the Free State, Department of Computer Science and Informatics, South Africa

P721 Deep Representation of Hierarchical Semantic Attributes for Zero-shot Learning [#21262]

Zhang Zhaocheng and Yang Gang

Renmin University of China, China

Session I-R7: Deep neural networks

Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Room 1, Chair: Karol Checinski, Pawel Wawrzynski

8:00PM When Explainability Meets Adversarial Learning: Detecting Adversarial Examples using SHAP Signatures [#20917]

Gil Fidel, Ron Bitton and Asaf Shabtai

Ben-Gurion university of the Negev, Israel

8:20PM Gated Graph Pooling with Self-Loop for Graph Classification [#20162]

Xiaolong Fan, Maoguo Gong, Hao Li, Yue Wu and Shanfeng Wang

School of Electronic Engineering, Key Laboratory of Intelligent Perception and Image Understanding of Ministry of Education Xidian University, Xi'an, Shaanxi Province 710071, China, China; School of Computer Science and Technology, Xidian University, Xi'an, Shaanxi Province 710071, China, China; School of Cyber Engineering, Xidian University, Xi'an, Shaanxi Province 710071, China, China

8:40PM GCN-LRP explanation: exploring latent attention of graph convolutional networks [#21026]

Jinlong Hu, Tenghui Li and Shoubin Dong

South China University of Technology, China

9:00PM Enhancing Textual Representation for Abstractive Summarization: Leveraging Masked Decoder [#20777]

Ruipeng Jia, Yanan Cao, Fang Fang, Jinpeng Li, Yanbing Liu and Pengfei Yin

Institute of Information Engineering, Chinese Academy of Sciences & School of Cyber Security, University of Chinese Academy of Sciences, China; Institute of Information Engineering, Chinese Academy of Sciences, China

9:20PM Adversarial Robustness of Model Sets [#21561]

Istvan Megyeri, Istvan Hegedus and Mark Jelasity

University of Szeged, Hungary

9:40PM DCT-Conv: Coding filters in convolutional networks with Discrete Cosine Transform [#20335]

Karol Checinski and Pawel Wawrzynski

Warsaw University of Technology, Poland

Special Session I-SS3: Current Trend of Machine Learning in Computer Vision

Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Room 2, Chair: Mukesh Prasad

8:00PM YOLOv3 Precision Improvement by the Weighted Centers of Confidence Selection [#21492]

Adrian Horzyk and Efe Ergun

AGH University of Science and Technology in Krakow, Poland

8:20PM **Discrepancy-Aware Collaborative Representation for Unsupervised Domain Adaptation [#20095]**

Han Chao, Zhou Deyun, Xie Yu, Lei Yu, Shi Jiao and Gong Maoguo

Northwestern Polytechnical University, China; Xidian university, China

8:40PM **FasTrCaps: An Integrated Framework for Fast yet Accurate Training of Capsule Networks [#21392]**

Alberto Marchisio, Beatrice Bussolino, Alessio Colucci, Muhammad Abdullah Hanif, Maurizio Martina, Guido Masera and Muhammad Shafique

TU Wien, Austria; Politecnico di Torino, Italy

9:00PM **Video object segmentation using spatio-temporal deep network [#21402]**

Akshaya Ramaswamy, Jayavardhana Gubbi and Balamurali Purushothaman

TCS Research and Innovation, India

9:20PM **Multi-Path Multi Deep Convolutional Neural Networks for Large Scale Plant Species Identification in Wild [#21901]**

Syeda Allena Riaz, Seeda Naz and Imran Razzak

GPGC, Pakistan; UTS, Australia

9:40PM **One-Shot Learning for Surveillance Anomaly Recognition using Siamese 3D CNN [#20401]**

Amin Ullah, Khan Muhammad, Kilichbek Haydarov, Ijaz Ul Haq, Miyoung Lee and Sung Wook Baik

Intelligent Media Laboratory, Digital Contents Research Institute, Sejong University, Korea (South)

Special Session I-SS32: Healthcare Analytics: Improving Healthcare outcomes using Big Data Analytics

Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Room 3, Chair: Imran Razzak

8:00PM **K-mer Neural Embedding Performance Analysis Using Amino Acid Codons [#21702]**

Muhammad Asim, Muhammad Malik, Andreas Dengel and Sheraz Ahmed

German Research Center for Artificial Intelligence (DFKI), 67663 Kaiserslautern, Germany, Germany; Center for Artificial Intelligence (NCAI), National University of Sciences and Technology, Islamabad, Pakistan, Pakistan; German Research Center for Artificial Intelligence (DFKI), Germany

8:20PM **G1020: A Benchmark Retinal Fundus Image Dataset for Computer-Aided Glaucoma Detection [#21483]**

Muhammad Naseer Bajwa, Gur Amrit Pal Singh, Wolfgang Neumeier, Muhammad Imran Malik, Andreas Dengel and Sheraz Ahmed

German Research Center for Artificial Intelligence GmbH, Germany; Opthalmology Clinic, Germany; National University of Science and Technology, Pakistan; German Research Center for Artificial Intelligence (DFKI), Germany

8:40PM **Exploiting Residual Edge Information in Deep Fully Convolutional Neural Networks For Retinal Vessel Segmentation [#21810]**

Tariq Khan, Syed Naqvi, Muhammad Arsalan, Muhammad Khan, Haroon Khan and Adnan Haider

Deakin University, Australia; COMSATS University Islamabad, Pakistan; Dongguk University, Korea (South); Lancaster University, United Kingdom

9:00PM **Data-Driven Approach based on Feature Selection Technique for Early Diagnosis of Alzheimer's Disease [#20592]**

Surendrabikram Thapa, Priyanka Singh, Deepak Kumar Jain, Neha Bharill, Akshansh Gupta and Mukesh Prasad

Delhi Technological University, India; University of Technology Sydney, Australia; Chongqing University of Posts and Telecommunications, China; Mahindra Ecole Centrale, India; Jawaharlal Nehru University, India

9:20PM **Biomedical Named-Entity Recognition by Hierarchically Fusing BioBERT Representations and Deep Contextual-Level Word-Embedding [#21145]**

Usman Naseem, Katarzyna Musial, Peter Eklund and Prasad Mukesh

University of Technology Sydney, Australia; Deakin University, Australia

9:40PM **Convolutional Neural Network for Medical Image Classification using Wavelet Features [#21617]**

Amin Khatami, Asef Nazari, Amin Beheshti, Thanh Thi Nguyen, Saeid Nahavandi and Zieba Jerzy

Deakin Unicersity, Australia; Macquary University, Australia; University of New South Wales, Australia

Special Session I-SS60: Learning from Difficult Data Streams

Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Room 4, Chair: Bartosz Krawczyk

8:00PM **Online Meta-Forest for Regression Data Streams [#21146]**

Shaker Ammar, Gaertner Christoph, He Xiao and Yu Shujian

NEC Laboratories Europe GmbH, Germany; BridgingIT GmbH, Germany; Alibaba Group, China

8:20PM **Fake News Detection from Data Streams [#21166]**

Pawel Ksieniewicz, Pawel Zyblewski, Michal Choras, Rafal Kozik, Agata Gielczyk and Michal Wozniak

Wroclaw University of Science and Technology, Poland; UTP University of Science and Technology, Poland

8:40PM **Online Oversampling for Sparsely Labeled Imbalanced and Non-Stationary Data Streams [#21427]**

Lukasz Korycki and Bartosz Krawczyk

Virginia Commonwealth University, United States

9:00PM **Employing dropout regularization to classify recurring drifted data streams [#21435]**

Filip Guzy and Michal Wozniak

Wroclaw University of Science and Technology, Poland

9:20PM **Discovering Sequential Patterns by Neural Networks [#21350]**

Jakub Nowak, Marcin Korytkowski and Rafal Scherer

Czestochowa University of Technology, Poland

9:40PM **Analysis of Information-Seeking Conversations with Process Mining [#20471]**

Alexander Holstrup, Lasse Starklit and Andrea Burattin

Technical University of Denmark, Denmark

Special Session I-SS36-7: Deep Learning for Wildlife Bioacoustics, Ecology and Crop Science
Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Room 5, Chair: Dan Stowell, Valerio Giuffrida

8:00PM **Vision-Based Analysis on Leaves of Tomato Crops for Classifying Nutrient Deficiency using Convolutional Neural Networks [#20969]**
Claudio Cevallos, Hiram Ponce, Ernesto Moya-Albor and Jorge Brieva
Universidad Panamericana, Mexico

8:20PM **Learning Deep Models from Synthetic Data for Extracting Dolphin Whistle Contours [#21005]**
Pu Li, Xiaobai Liu, K. Palmer, Erica Fleishman, Douglas Gillespie, Eva-Marie Nosal, Yu Shiu, Holger Klinck, Danielle Cholewiak, Tyler Helble and Marie Roch
San Diego State University, United States; Colorado State University, United States; University of St. Andrews, Scotland; University of Hawaii, United States; Cornell University, United States; f Northeast Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States; US Navy Naval Information Warfare Center Pacific, United States

8:40PM **An Auto Encoder For Audio Dolphin Communication [#20738]**
Daniel Kohlsdorf, Denise Herzing and Thad Starner
Freelance Data Scientist, Germany; Wild Dolphin Project, United States; Georgia Institute of Technology, United States

9:00PM **DOCC10: Open access dataset of marine mammal transient studies and end-to-end CNN classification [#21412]**
Maxence Ferrari, Herve Glotin, Ricard Marxer and Mark Asch
Universite Amiens, CNRS, LAMFA, France, France; Universite Toulon, Aix Marseille Univ., France

9:20PM **Deep Learning and Domain Transfer for Orca Vocalization Detection [#21414]**
Paul Best, Maxence Ferrari, Marion Poupard, Sebastien Paris, Ricard Marxer, Helena Symonds, Paul Spong and Herve Glotin
UTLN, France; LAMFA, France; Orcalab, Canada

9:40PM **Deep Learning-based Object Detection for Crop Monitoring in Soybean Fields [#21248]**
Muhammad Taufiq Pratama, Sangwook Kim, Seiichi Ozawa, Takenao Ohkawa, Yuya Chonan, Hiroyuki Tsuji and Noriyuki Murakami
Kobe University, Japan; National Agriculture and Food Research Organization, Japan

Session I-R8: Supervised learning 3
Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Room 6, Chair: Abir Hussain, Wei-Chang Yeh

8:00PM **Integrating Informativeness, Representativeness and Diversity in Pool-Based Sequential Active Learning for Regression [#20391]**
Ziang Liu and Dongrui Wu
Huazhong University of Science & Technology, China

8:20PM **Harnessing Adversarial Distances to Discover High-Confidence Errors [#20782]**
Walter Bennette, Karsten Maurer and Sean Sisti
US Air Force Research Lab, United States; Miami University, United States

8:40PM **DIOPT: Extremely Fast Classification Using Lookups and Optimal Feature Discretization [#21501]**
Johan Garcia and Topi Korhonen
Karlstad University, Sweden

9:00PM Information Ranking Using Optimum-Path Forest [#21235]

Nathalia Ascencao, Luis Afonso, Danilo Colombo, Luciano Oliveira and Joao Papa

UNESP - Sao Paulo State University, Brazil; UFSCar - Federal University of Sao Carlos, Brazil; Petrobras - Petroleo Brasileiro, Brazil; UFBA - Federal University of Bahia, Brazil

9:20PM O(m log m) instance selection algorithms -- RR-DROPs [#21422]

Marek Orlinski and Jankowski Norbert

Department of Informatics, Nicolaus Copernicus University in Torun, Poland

9:40PM General Fair Empirical Risk Minimization [#20457]

Luca Oneto, Donini Michele and Massimiliano Pontil

University of Genoa, Italy; Amazon, United States; IIT, Italy

Session I-R9: Visual System

Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Room 7, Chair: Ajith Abraham

8:00PM Simultaneous Neural Spike Encoding and Decoding Based on Cross-modal Dual Deep Generative Model [#20163]

Qiongyi Zhou, Changde Du, Dan Li, Haibao Wang, Jian Liu and Huiguang He

Research Center for Brain-Inspired Intelligence, National Laboratory of Pattern Recognition, CASIA, School of Artificial Intelligence, University of Chinese Academy of Sciences, China; Research Center for Brain-Inspired Intelligence, National Laboratory of Pattern Recognition, CASIA, School of Artificial Intelligence, University of Chinese Academy of Sciences, Huawei Cloud BU EI Innovation Lab, China; Centre for Systems Neuroscience, Department of Neuroscience, Psychology and Behaviour, University of Leicester, United Kingdom; Research Center for Brain-Inspired Intelligence, National Laboratory of Pattern Recognition, CASIA, School of Artificial Intelligence, University of Chinese Academy of Sciences, Center for Excellence in Brain Science and Intelligence Technology, CAS, China

8:20PM Competition between ON and OFF Neural Pathways Enhancing Collision Selectivity [#20421]

Fang Lei, Zhiping Peng, Vassilis Cutsuridis, Mei Liu, Yicheng Zhang and Shigang Yue

School of Computer Science, University of Lincoln, United Kingdom; Guangdong University of Petrochemical Technology, China

8:40PM HLNet: Modeling High and Low Frequencies for Scene Parsing [#21395]

Kaiqiang Xu, Zhulin An, Hui Zhu, Xiaolong Hu and Yongjun Xu

Institute of Computing Technology, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China, China; Institute of Computing Technology, Chinese Academy of Sciences, China; Institute of Computing Technology, Chinese Academy of Sciences, China, China

9:00PM Cognitive Architecture for Video Games [#20974]

Hongming Li, Ying Ma and Jose Principe

University of Florida, United States

9:20PM Voice over LTE Quality Evaluation Using Convolutional Neural Networks [#21445]

Thomas Gorman, Hadi Larijani and Ayyaz-Ul-Haq Qureshi

Glasgow Caledonian University, United Kingdom

9:40PM A Viewport Prediction Framework for Panoramic Videos [#20818]

Jinting Tang, Yongkai Huo, Shaoshi Yang and Jianmin Jiang

Shenzhen University, China; Beijing University of Posts and Telecommunications, China

Plenary Poster Session I-P5: Different Neural Networks - fuzzy, large scale, RBF
Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Poster Room 1, Chair: Sreela Sasi

P901 Hessian-based Bounds on Learning Rate for Gradient Descent Algorithms [#21290]
Prayag Gowgi and Shayan Srinivasa Garani
Indian Institute of Science, India

P902 ReFuzzTiD: A Recurrent Neurofuzzy Model for Anomaly Detection in Time Series [#20156]
George Kandilogiannakis and Paris Mastorocostas
University of West Attica, Dpt. og Informatics & Computer Eng., Greece

P903 Intrusion Detection with Segmented Federated Learning for Large-Scale Multiple LANs [#21025]
Yuwei Sun, Hideya Ochiai and Hiroshi Esaki
The University of Tokyo, Japan

P904 Visualisation and knowledge discovery from interpretable models [#20880]
Sreejita Ghosh, Peter Tino and Kerstin Bunte
Bernoulli Institute, University of Groningen, Netherlands; School of Computer Science, University of Birmingham, United Kingdom

P905 LALR: Theoretical and Experimental validation of Lipschitz Adaptive Learning Rate in Regression and Neural Networks [#21363]
Snehanshu Saha, Tejas Prashanth, Suraj Aralihalli, Sumedh Basarkod, T.S.B Sudarshan and Soma S Dhavala
BITS Pilani K K Birla Goa Campus, India; PES University, India; ML Square, India

P906 Heterogeneous Information Network Embedding with Convolutional Graph Attention Networks [#20261]
Meng Cao, Xiying Ma, Kai Zhu, Ming Xu and Chongjun Wang
Nanjing University, China

P907 Neural Networks for the Retrieval of Methane from the Sentinel-5 Precursor Satellite. [#21609]
Rose Fenwick, Hartmut Boesch and Ivan Tyukin
University of Leicester, United Kingdom

P908 Are Modern Deep Learning Models for Sentiment Analysis Brittle? An Examination on Part-of-Speech [#21837]
Ahoud Alhazmi, Wei Emma Zhang, Quan Z. Sheng and Abdulwahab Aljubairy
Department of Computing, Macquarie University Sydney, NSW 2109, Australia; School of Computer Science, The University of Adelaide, SA 5005, Australia; Department of Computing, Macquarie University Sydney, NSW 2109,, Australia; Department of Computing, Macquarie University Sydney, Australia

P909 DAPAS : Denoising Autoencoder to Prevent Adversarial attack in Semantic Segmentation [#20293]
Seungju Cho, Tae Joon Jun, Byungsoo Oh and Daeyoung Kim
School of computing, Korea (South); Asan Medical Center, Korea (South)

P910 Generalized Neural Framework for Learning with Rejection [#21030]
Amina Asif and Fayyaz ul Amir Afsar Minhas
Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad, Pakistan; University of Warwick, United Kingdom

P911 Analyzing the Sensitivity of Deep Neural Networks for Sentiment Analysis: A Scoring Approach [#21814]

Ahoud Alhazmi, Wei Emma Zhang, Quan Z. Sheng and Abdulwahab Aljubairy

Department of Computing, Macquarie University Sydney, NSW 2109, Australia; School of Computer Science, The University of Adelaide, SA 5005, Australia; Department of Computing, Macquarie University Sydney, NSW 2109,, Australia; Department of Computing, Macquarie University Sydney, Australia

P912 Adaptive Neural Consensus Control for Nonlinear Strict-Feedback Multiagent Systems With Switching Directed Topology [#20781]

Wei Zhang and Zhaoxu Yu

East China University of Science and Technology, China

P913 Probabilistic Neural Network - parameters adjustment in classification task [#21598]

Piotr Kowalski, Maciej Kusy, Szymon Kubasiak and Szymon Lukasik

Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Poland; Faculty of Electrical and Computer Engineering, Rzeszow University of Technology, Poland

P914 Multilayer GMDH-neuro-fuzzy System Based on Extended Neo-fuzzy Neurons and Its Learning in Online Facial Expression Recognition [#20014]

Yevgeniy Bodyanskiy, Yuriy Zaychenko, Nonna Kulishova and Galib Hamidov

Control Systems Research Laboratory Kharkiv National University of Radio Electronics, Ukraine; Institute for Applied System Analysis Igor Sikorski Kyiv Polytechnic Institute, Ukraine; Media Systems and Technologies Department Kharkiv National University of Radio Electronics, Ukraine; Information Technologies Department Igor Sikorski Kyiv Polytechnic Institute, Azerbaijan

Plenary Poster Session I-P6:

Monday, July 20, 8:00PM-10:00PM, Room: IJCNN Poster Room 2, Chair: Alma Alanis

P1101 Bioinformatics-inspired non-parametric modelling of pharmacokinetics-pharmacodynamics systems using differential neural networks [#21167]

Mariel Alfaro-Ponce and Isaac Chairez

Tecnologico de Monterrey, Mexico; Instituto Politecnico Nacional, Mexico

P1102 A New Methodology for Classifying QRS Morphology in ECG Signals [#20868]

Weslley Caldas, Joao Paulo Madeiro, Cesar Mattos and Joao Paulo Gomes

Federal University of Ceara, Brazil

P1103 Joint Heart Sounds Segmentation and Murmur Detection with Masked Loss Function [#20155]

Tomasz Grzywalski, Adam Maciaszek, Riccardo Belluzzo, Krzysztof Szarzynski, Mateusz Piecuch and Honorata Hafke-Dys

StethoMe, Poznan, Poland; Institute of Acoustics, Faculty of Physics, Adam Mickiewicz University, Poznan, Poland

P1104 Breast Cancer Histopathological Image Classification Based on Deep Second-order Pooling Network [#20204]

Jiasen Li, Jianxin Zhang, Qiule Sun, Hengbo Zhang, Jing Dong, Chao Che and Qiang Zhang

Dalian University, China; Dalian Minzu University, China; Dalian University of Technology, China; Dalian University of Technology, Canada

P1105 Discovering biomedical causality by a generative Bayesian causal network under uncertainty [#21015]

Ting Ye, Jun Liao, Xuewen Yan, Hao Luo, Wenbing Zhang and Li Liu

School of Big Data & Software Engineering Chongqing University, China

P1106 A Probabilistic Beat-to-Beat Filtering Model for Continuous and Accurate Blood Pressure Estimation [#21770]

Zehua Chen, Bruno Scalzo Dees and Danilo Mandic

Department of EEE, Imperial College London, United Kingdom

P1107 RED: Deep Recurrent Neural Networks for Sleep EEG Event Detection [#21940]

Nicolas Igor Tapia and Pablo Antonio Estevez

Universidad de Chile, Chile

P1108 An App to Detect Melanoma Using Deep Learning: An Approach to Handle Imbalanced Data Based on Evolutionary Algorithms [#20786]

Pedro B.C. Castro, Breno Krohling, Andre G.C. Pacheco and Renato A. Krohling

UFES - Federal University of Espirito Santo, Brazil

P1109 Sleep Apnea Event Prediction Using Convolutional Neural Networks and Markov Chains [#21831]

Rim Haidar, Irena Koprinska and Bryn Jeffries

The University of Sydney, Australia

P1110 Deep Learning based fully automatic efficient Burn Severity Estimators for better Burn Diagnosis [#21749]

Joohi Chauhan and Puneet Goyal

Indian Institute of Technology Ropar, India

P1111 A Comparative Study of U-Net Topologies for Background Removal in Histopathology Images [#20384]

Abtin Riasatian, Maral Rasoolijaberi, Morteza Babaie and Hamid R. Tizhoosh

Kimia Lab, University of Waterloo, Canada, Canada

P1112 HIME: Mining and Ensembling Heterogeneous Information for Protein-Protein Interactions Prediction [#20692]

Huaming Chen, Yaochu Jin, Lei Wang, Chi-Hung Chi and Jun Shen

University of Wollongong, Australia; University of Surrey, United Kingdom; CSIRO, Australia

P1113 Deep Learning Based Unsupervised and Semi-supervised Classification for Keratoconus [#20788]

Hallett Nicole, Yi Kai, Dick Josef, Hodge Christopher, Sutton Gerard, Wang Yu Guang and You Jingjing

The University of Sydney, Australia; The University of New South Wales, Australia

P1114 Cognitive Identity Management: Synthetic Data, Risk and Trust [#21009]

Svetlana Yanushkevich, Adrian Stoica, Peter Shmerko, W. Gareth Howells, Keeley Crockett and Richard Guest

University of Calgary, Canada; NASA's JPL/California Institute of Technology, United States; University of Kent, United Kingdom; Manchester Metropolitan University, United Kingdom

P1115 An Adaptive Control Approach for Intelligent Wheelchair Based on BCI Combining with QoO [#21047]

Fei Wang, Zongfeng Xu, Weiwei Zhang, Shichao Wu, Yahui Zhang and Sonya Coleman

Northeastern University, China; Ulster University, United Kingdom

TUESDAY, JULY 21

Session I-R10: Deep neural networks
Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Room 1, Chair: Jiabo He, Sarah Erfani

2:30PM **Convolutional Transformer with Sentiment-aware Attention for Sentiment Analysis [#20442]**
Pengfei Li, Peixiang Zhong, Jiaheng Zhang and Kezhi Mao
Nanyang Technological University, Singapore

2:50PM **Enhancing Perceptual Loss with Adversarial Feature Matching for Super-Resolution [#21833]**
Ravi Tej Akella, Shirsendu Sukanta Halder, Arunav Pratap Shandeelya and Vinod Pankajakshan
Indian Institute of Technology Roorkee, India; Carnegie Mellon University, United States; International Institute of Information Technology Bhubaneswar, India

3:10PM **On the Information Plane of Autoencoders [#21963]**
Nicolas Igor Tapia and Pablo Antonio Estevez
Universidad de Chile, Chile

3:30PM **Hierarchical Group Sparse Regularization for Deep Convolutional Neural Networks [#20499]**
Kakeru Mitsuno, Junichi Miyao and Takio Kurita
Hiroshima University, Japan

3:50PM **An Ensemble of Knowledge Sharing Models for Dynamic Hand Gesture Recognition [#21533]**
Kenneth Lai and Svetlana Yanushkevich
University of Calgary, Canada

4:10PM **Learning Non-Unique Segmentation with Reward-Penalty Dice Loss [#20351]**
Jiabo He, Sarah Erfani, Sudanthi Wijewickrema, Stephen O'Leary and Kotagiri Ramamohanarao
University of Melbourne, Australia

Special Session I-SS4A: Feature Extraction and Learning on Image and Text Data
Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Room 2, Chair: Mukesh Prasad

2:30PM **Remote Extraction of Latent Fingerprints (RELF) [#20806]**
Matthew McGuigan and Jacqueline Christmas
University of Exeter, United Kingdom

2:50PM **YOLO-ASC: You Only Look Once And See Contours [#21070]**
Petr Hurtik, Vojtech Molek and Pavel Vlasanek
University of Ostrava, Czech Republic

3:10PM **Improving Diversity and Reducing Redundancy in Paragraph Captions [#21087]**
Chandresh Shambhubhai Kanani, Sriparna Saha and Pushpak Bhattacharyya
Indian Institute of Technology, Patna, India

3:30PM **Towards Improved Deep Contextual Embedding for the identification of Irony and Sarcasm [#21115]**
Usman Naseem, Imran Razzak, Peter Eklund and Katarzyna Musial
University of Technology Sydney, Australia; Deakin University, Australia

3:50PM **Transfer learning in hierarchical dialogue topic classification with neural networks [#21484]**

Cesar Montenegro, Roberto Santana and Jose Antonio Lozano

University of the Basque Country UPV/EHU, Spain; University of the Basque Country UPV/EHU and BCAM, Spain

4:10PM **Effects of Architecture and Training on Embedding Geometry and Feature Discriminability in BERT [#21493]**

Maksim Podkorytov, Daniel Bis, Jinglun Cai, Kobra Amirizirtol and Xiuwen Liu

Florida State University, United States

Special Session I-SS50: Machine Learning and Deep Learning Approaches to for Ambient Assisted Living

Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Room 3, Chair: Hiram Ponce

2:30PM **Representing Temporal Dependencies in Smart Home Activity Recognition for Health Monitoring [#21361]**

Glenn Forbes, Stewart Massie, Susan Craw, Lucy Fraser and Graeme Hamilton

Robert Gordon University, United Kingdom; Albyn Housing Society Ltd, United Kingdom

2:50PM **Uncovering Human Multimodal Activity Recognition with a Deep Learning Approach [#21098]**

Caetano Mazzoni Ranieri, Patricia Amancio Vargas and Roseli Aparecida Francelin Romero

University of Sao Paulo, Brazil; Heriot Watt University, Brazil

3:10PM **Neural Recurrent Approches to Noninvasive Blood Pressure Estimation [#21227]**

Annunziata Paviglianiti, Vincenzo Randazzo, Giansalvo Cirrincione and Eros Pasero

DET - Politecnico di Torino, Italy; Lab. LTI - Universite' de Picardie Jules Verne Amiens, France University of South Pacific, Suva, Fiji, France

3:30PM **Online Testing in Machine Learning Approach for Fall Detection [#20382]**

Lourdes Martinez-Villasenor, Hiram Ponce, Jose Nunez-Martinez and Sofia Pacheco

Universidad Panamericana, Mexico

3:50PM **Comparative Analysis of Artificial Hydrocarbon Networks versus Convolutional Neural Networks in Human Activity Recognition [#21902]**

Hiram Ponce and Lourdes Martinez-Villasenor

Universidad Panamericana, Mexico

4:10PM **Enhancing Multivariate Time Series Classification Using LSTM and Evidence Feed Forward HMM [#20571]**

Achyut Mani Tripathi

Indian Institute of technology Guwahati, India

Special Session I-SS13: Computational Intelligence for Applied Time Series Forecasting

Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Room 4, Chair: Cristian Rodriguez Rivero

2:30PM **Baseline win rates for neural-network based trading algorithms [#20761]**

Andreas Krause and Michael Fairbank

University of Bath, United Kingdom; University of Essex, United Kingdom

2:50PM **Pattern-based Long Short-term Memory for Mid-term Electrical Load Forecasting [#20263]**

Pawel Pelka and Grzegorz Dudek

Czestochowa University of Technology, Poland

3:10PM **Granger Causality Analysis based on Neural Networks Architectures for bivariate cases [#21650]**

Alvaro David Orjuela-Canon, Andres Jutinico, Alexander Cerquera and Jan A. Freund

Universidad del Rosario, Colombia; Universidad Antonio Narino, Colombia; University of Florida, United States; Carl von Ossietzky Universitat Oldenburg, Germany

3:30PM **On the evaluation of dynamic selection parameters for time series forecasting [#21400]**

Eraylson Galdino da Silva, George D. C. Cavalcanti, Joao Fausto L. de Oliveira and Paulo S. G. de Mattos Neto

Universidade Federal de Pernambuco, Brazil; Universidade de Pernambuco, Brazil

3:50PM **New Perspectives on the Use of Online Learning for Congestion Level Prediction over Traffic Data [#20568]**

Eric L. Manibardo, Ibai Lana, Jesus L. Lobo and Javier Del Ser

TECNALIA, Basque Research and Technology Alliance (BRTA), Spain; University of the Basque Country (UPV/EHU), Spain

4:10PM **ADMM Consensus for Deep LSTM Networks [#21332]**

Antonello Rosato, Federico Succetti, Marcello Barbirotta and Massimo Panella

University of Rome "La Sapienza", Italy

Special Session I-SS39: Challenges in Reservior Computing

Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Room 5, Chair: Claudio Gallicchio

2:30PM **Spatial distribution of information effective for logic function learning in spin-wave reservoir computing chip utilizing spatiotemporal physical dynamics [#21140]**

Takehiro Ichimura, Ryosho Nakane, Gouhei Tanaka and Akira Hirose

The University of Tokyo, Japan

2:50PM **Hierarchical-Task Reservoir for Anytime POS Tagging from Continuous Speech [#21404]**

Luca Pedrelli and Xavier Hinaut

INRIA Bordeaux Sud-Ouest., France

3:10PM **Tree Echo State Autoencoders with Grammars [#20950]**

Benjamin Paassen, Irena Koprinska and Kalina Yacef

The University of Sydney, Australia

3:30PM **Deep Echo State Networks with Multi-Span Features for Nonlinear Time Series Prediction [#21214]**

Ziqiang Li and Gouhei Tanaka

The University of Tokyo, Japan

3:50PM **Cross-Situational Learning with Reservoir Computing for Language Acquisition Modelling [#21728]**

Alexis Juven and Xavier Hinaut

INRIA Bordeaux, France

Session I-R11: Supervised learning 4

Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Room 6, Chair: Eyad Elyan

2:30PM **Data Augmentation for Histopathological Images Based on Gaussian-Laplacian Pyramid Blending [#21432]**

Steve Tsham Mpinda Ataky, Jonathan de Matos, Alceu de Souza Britto Jr, Luiz Eduardo S Oliveira and Alessandro Lameiras Koerich

Ecole de Technologie Superieure, Canada; Pontifical Catholic University of Parana, Brazil; Federal University of Parana, Brazil

2:50PM **Adaptive XGBoost for Evolving Data Streams [#21153]**
Jacob Montiel, Rory Mitchell, Eibe Frank, Bernhard Pfahringer, Talel Abdessalem and Albert Bifet
University of Waikato, New Zealand; Telecom ParisTech, France

3:10PM **Multi-criteria analysis involving Pareto-optimal misclassification tradeoffs on imbalanced datasets [#20385]**
Marcos M. Raimundo and Fernando J. Von Zuben
University of Campinas, Brazil

3:30PM **Online Learning for Anomaly Detection via Subdivisible Convex Hulls [#21305]**
David Novoa-Paradela, Oscar Fontenla-Romero and Bertha Guijarro-Berdinas
CITIC, University of A Coruna, Spain

3:50PM **Unsupervised Embeddings for Categorical Variables [#20889]**
Hannes De Meulemeester and Bart De Moor
KU Leuven, Belgium

4:10PM **Generating Compact Tree Ensembles via Annealing [#20954]**
Gitesh Dawer, Yangzi Guo and Adrian Barbu
Apple Inc., United States; Florida State University, United States

Session I-R12: Attention
Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Room 7, Chair: Marco Gori

2:30PM **Multivariate Time Series Classification With An Attention-Based Multivariate Convolutional Neural Network [#21040]**
Achyut Mani Tripathi and Rashmi Dutta Baruah
Indian Institute of technology Guwahati, India; Indian Institute of Technology Guwahati, India

2:50PM **Federated Multi-task Learning with Hierarchical Attention for Sensor Data Analytics [#20981]**
Yujing Chen, Yue Ning, Zheng Chai and Huzefa Rangwala
George Mason University, United States; Stevens Institute of Technology, United States

3:10PM **Attention Before and After Feature Extraction for Action Recognition [#21506]**
Zichen Zhou, Yiling Xu and Le Yang
Shanghai Jiao Tong University, China; University of Canterbury, New Zealand

3:30PM **GuideSQL: Utilizing Tables to Guide the Prediction of Columns for Text-to-SQL Generation [#20771]**
Huajie Wang, Lei Chen, Mei Li and Mengnan Chen
East China Normal University, China

3:50PM **Toward Improving the Evaluation of Visual Attention Models: a Crowdsourcing Approach [#20504]**
Dario Zanca, Stefano Melacci and Marco Gori
University of Siena, Italy

Plenary Poster Session I-P7: Spiking Neural Networks
Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Poster Room 1, Chair: Zhijun Yang

P1301 **Deep Spiking Neural Network Using Spatio-temporal Backpropagation with Variable Resistance [#20455]**
Xianglan Wen, Pengjie Gu, Rui Yan and Huajin Tang
Sichuan University, China; Zhejiang University of Technology, China; Zhejiang University, China

P1302 Spiking Inception Module for Multi-layer Unsupervised Spiking Neural Networks [#20706]

Mingyuan Meng, Xingyu Yang, Shanlin Xiao and Zhiyi Yu

Sun Yat-sen University, China

P1303 A critical survey of STDP in Spiking Neural Networks for Pattern Recognition [#21590]

Vigneron Alexandra and Martinet Jean

Universite de Lille, France; Universite Cote d'Azur, France

P1304 Online Evolving Spiking Neural Networks for Incremental Air Pollution Prediction [#21817]

Piotr S. Maciag, Marzena Kryszkiewicz and Robert Bembenik

Warsaw University of Technology, Poland

P1305 Minibatch Processing for Speed-up and Scalability of Spiking Neural Network Simulation [#21640]

Daniel Saunders, Cooper Sigrist, Kenneth Chaney, Robert Kozma and Hava Siegelmann

BINDS Lab, UMass Amherst, Amherst, MA, USA and Fomoro AI, San Francisco, CA, USA, United States; BINDS Lab, UMass Amherst, Amherst, MA, USA, United States; GRASP, University of Pennsylvania, Philadelphia, PA, USA, United States; BINDS Lab, UMass Amherst, Amherst, MA, USA and CLION, University of Memphis, Memphis, TN, USA, United States

P1306 Neural Coding: Adapting Spike Generation for Embedded Hardware Classification [#21535]

Nassim Abderrahmane and Benoit Miramond

University of Cote d'Azur, CNRS, LEAT, France, France

P1307 Classifying Neuromorphic Datasets with Tempotron and Spike Timing Dependent Plasticity [#21743]

Laxmi R. Iyer and Yansong Chua

Institute of Infocomms Research, Singapore; Huawei Technologies, China

P1308 Sleep Stage Classification using NeuCube on SpiNNaker: a Preliminary Study [#21017]

Sugam Budhraja, Basabdatta Sen Bhattacharya, Simon Durrant, Zohreh Doborjeh, Maryam Doborjeh and Nikola Kasabov

BITS Pilani, Goa Campus, India; University of Lincoln, United Kingdom; The University of Auckland, New Zealand; Auckland University of Technology, New Zealand

P1309 Recognizing Scoring in Basketball Game from AER Sequence by Spiking Neural Networks [#21222]

Jiangrong Shen, Yu Zhao, Jian Liu and Yueming Wang

The College of Computer Science and Technology, the Qiushi Academy for Advanced Studies, Zhejiang University;Centre for Systems Neuroscience, Department of Neuroscience, Psychology and Behaviour, University of Leicester., China; The College of Computer Science and Technology, the Qiushi Academy for Advanced Studies, Zhejiang University., China; Centre for Systems Neuroscience, Department of Neuroscience, Psychology and Behaviour, University of Leicester., United Kingdom; The Qiushi Academy for Advanced Studies, Zhejiang University;State Key Lab of CAD&CG, Zhejiang University;Zhejiang Lab., China

P1310 Improving STDP-based Visual Feature Learning with Whitening [#21791]

Pierre Falez, Pierre Tirilly and Ioan Marius Bilasco

Universite de Lille - CNRS - Centrale Lille - UMR 9189 - CRIStAL - Centre de Recherche en Informatique, Signal et Automatique de Lille, France

P1311 Faster and Simpler SNN Simulation with Work Queues [#20016]

Dennis Bautembach, Iason Oikonomidis, Nikolaos Kyriazis and Antonis Argyros

FORTH-ICS & CSD-UOC, Greece; FORTH-ICS, Greece

P1312 Automated Design of Neuromorphic Networks for Scientific Applications at the Edge [#20577]

Catherine Schuman, J. Parker Mitchell, Maryam Parsa, James Plank, Samuel Brown, Garrett Rose, Robert Patton and Thomas Potok

Oak Ridge National Laboratory, United States; Purdue University, United States; University of Tennessee, United States

P1313 Implementing a foveal-pit inspired filter in a Spiking Convolutional Neural Network: a preliminary study [#21556]

Shriya Gupta and Basabdatta Bhattacharya

BITS Pilani Goa Campus, India

P1314 Application of Spiking Neural Networks for Action Recognition from Radar Data [#21391]

Dighanchal Banerjee, Smriti Rani, Arun M. George, Arijit Chowdhury, Sounak Dey, Arijit Mukherjee, Tapas Chakravarty and Arpan Pal

TCS Research & Innovation, India

P1315 A Hardware/Application Overlay Model for Large-Scale Neuromorphic Simulation [#20607]

Alexander Rast, Mahyar Shahsavari, Graeme M. Bragg, Mark L. Vousden, David Thomas and Andrew Brown

Oxford Brookes University, United Kingdom; Imperial College London, United Kingdom; University of Southampton, United Kingdom

P1316 Synaptic Integration of Spatiotemporal Features with a Dynamic Neuromorphic Processor [#21471]

Mattias Nilsson, Foteini Liwicki and Fredrik Sandin

Lulea University of Technology, Sweden

P1317 PyCARL: A PyNN Interface for Hardware-Software Co-Simulation of Spiking Neural Network [#20903]

Adarsha Balaji, Prathyusha Adiraju, Hirak Kashyap, Anup Das, Jeffrey Krichmar, Nikil Dutt and Francky Catthoor

Drexel University, United States; Stichting IMEC Nederland, Netherlands; University of California, Irvine, United States; IMEC, Belgium

P1318 Bio-inspired Gait Imitation of Hexapod Robot using Event-Based Vision Sensor and Spiking Neural Network [#21858]

Justin L. Ting, Yan Fang, Ashwin Sanjay Lele and Arijit Raychowdhury

Georgia Institute of Technology, United States

P1319 An Efficient Spiking Neural Network for Recognizing Gestures with a DVS Camera on the Loihi Neuromorphic Processor [#21574]

Riccardo Massa, Alberto Marchisio, Maurizio Martina and Muhammad Shafique

Politecnico di Torino, Italy; TU Wien, Austria

P1320 Toward Hardware Spiking Neural Networks with Mixed-Signal Event-Based Learning Rules [#21567]

Pierre Lewden, Adrien F Vincent, Charly Meyer, Jean Tomas and Sylvain Saighi

Laboratoire IMS, Univ. Bordeaux, Bordeaux INP, CNRS, France

P1321 Leveraging the Manycore Architecture of the Loihi Spiking Processor to Perform Quasi-Complete Constraint Satisfaction [#21635]

Chris Yakopcic, Nayim Rahman, Tanvir Atahary, Tarek M. Taha and Scott Douglass

University of Dayton, United States; Air Force Research Lab, United States

Plenary Poster Session I-P8:
Tuesday, July 21, 2:30PM-4:30PM, Room: IJCNN Poster Room 2, Chair: Joao Bertini

P1501 Conventional and Structure Based Sentiment Analysis: A Survey [#20474]
Omar Ali, Alexander Gegov, Haig Ella and Khusainov Rinat
University of Portsmouth, School of Computing, United Kingdom

P1502 IARNet: An Information Aggregating and Reasoning Network over Heterogeneous Graph for Fake News Detection [#20714]
Yu Junshuai, Huang Qi, Zhou Xiaofei and Sha Ying
Institute of Information Engineering, Chinese Academy of Sciences, China; Huazhong Agricultural University, China

P1503 Discriminative Feature Pyramid Network For Object Detection In Remote Sensing Images [#20825]
Xiaoqian Zhu, Xiangrong Zhang, Tianyang Zhang, Peng Zhu, Xu Tang and Chen Li
Xidian University, China; Xi'an Jiaotong University, China

P1504 Sentiment-Driven Price Prediction of the Bitcoin based on Statistical and Deep Learning Approaches [#20356]
Giulia Serafini, Ping Yi, Qingquan Zhang, Marco Brambilla, Jiayue Wang, Yiwei Hu and Beibei Li
Shanghai Jiao Tong University, China; University of Illinois, United States; Politecnico di Milano, Italy; Beijing International Studies University, China; University of California, United States; Carnegie Mellon University, United States

P1505 Cluster Developing 1-Bit Matrix Completion [#21793]
Chengkun Zhang, Junbin Gao and Steven Lu
the Univerisity of Sydney, Australia

P1506 Scene Text Recognition by Attention Network with Gated Embedding [#20836]
Cong Wang and Cheng-Lin Liu
Institute of Automation of Chinese Academy of Sciences, China

P1507 An End-to-End Approach for Recognition of Modern and Historical Handwritten Numeral Strings [#20232]
Andre G. Hochuli, Alceu S. Britto Jr., Jean P. Barddal, Luiz E. S. Oliveira and Robert Sabourin
Pontificia Universidade Catolica do Parana, Brazil; Universidade Federal do Parana, Brazil; Ecole de Technologie Superieure, Canada

P1508 Cross-Domain Recommendation with Multiple Sources [#21751]
Qian Zhang, Jie Lu and Guangquan Zhang
University of Technology Sydney, Australia

P1509 Early Failure Detection of Belt Conveyor Idlers by Means of Ultrasonic Sensing [#20857]
Daniel Ericeria, Filipe Rocha, Andrea Bianchi and Gustavo Pessin
Federal University of Ouro Preto, Brazil; Federal University of Rio de Janeiro, Brazil; Instituto Tecnologico Vale, Brazil

P1510 Information Enhanced Graph Convolutional Networks for Skeleton-based Action Recognition [#21089]
Dengdi Sun, Fanchen Zeng, Zhuanlian Ding, Jin Tang and Bin Luo
Anhui University, China

P1511 Personalized Destination Prediction Using Transformers in a Contextless Data Setting [#20082]
Athanasios Tsiligkaridis, Jing Zhang, Hiroshi Taguchi and Daniel Nikovski
Boston University, United States; Mitsubishi Electric Research Labs, United States; Mitsubishi Electric Corporation, Japan

P1512 Improving the Style Adaptation for Unsupervised Cross-Domain Person Re-Identification [#20258]

Wenyuan Zhang, Li Zhu and Lu Lu

Xi'an Jiaotong University, China

P1513 Low Resolution Handwritten Digit String Recognition based on Object Detection Network [#21314]

Yingjie Xu and Jun Guo

East China Normal University, China

P1514 Transfer Learning in Smart Home Scenario [#21280]

Sonia Sonia and Rashmi Dutta Baruah

University of Petroleum and Engineering Dehradun, India; Indian Institute of Technology Guwahati, India

P1515 Machine Learning Algorithms in Quantum Computing: A Survey [#21372]

Somayeh Bakhtiari Ramezani, Alexander Sommers, Harish Kumar Manchukonda, Shahram Rahimi and Amin Amirlatifi

Mississippi State University, United States

P1516 Predicting Gentrification in Mexico City using Neural Networks [#21803]

Leon Palafox and Pedro Ortiz-Monasterio

Universidad Panamericana, Facultad de Ingenieria, Mexico

Session I-R13: Deep neural networks

Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Room 1, Chair: Wei Lu, Yan Hu

4:45PM Lightweight Action Recognition with Sequence-Specific Global Context [#20362]

Yao Chen, Hefei Ling, Jiazhong Chen, Lei Wu and Yuxuan Shi

Huazhong University of Science and Technology, China

5:05PM End-to-End JPEG Decoding and Artifacts Suppression Using Heterogeneous Residual Convolutional Neural Network [#20059]

Jun Niu

Amazon.com, Inc., United States

5:25PM An Improved Template Representation-based Transformer for Abstractive Text Summarization [#21657]

Jiaming Sun, Yunli Wang and Zhoujun Li

Beihang University, China

5:45PM Component Analysis for Visual Question Answering Architectures [#20925]

Camila Kolling, Jonatas Wehrmann and Rodrigo C. Barros

Pontificia Universidade Catolica do Rio Grande do Sul, Brazil

6:05PM Feature Map Transform Coding for Energy-Efficient CNN Inference [#20035]

Brian Chmiel, Chaim Baskin, Evgenii Zheltonozhskii, Ron Banner, Yevgeny Yermolin, Alex Karbachevsky, Alex M. Bronstein and Avi Mendelson

Intel -- Artificial Intelligence Products Group (AIPG), Israel; Technion -- Israel Institute of Technology, Israel

6:25PM Multi-type Feature Mining and Fusion Model for Temporal Prediction [#21083]

Wei Lu and Yan Hu

University of Electronic Science and Technology of China, China

Special Session I-SS4B: Feature Extraction and Learning on Image and Text Data
Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Room 2, Chair: Mukesh Prasad

4:45PM **Deep Analysis of Handwriting Notes for Early Diagnosis of Neurological Disorders [#21698]**
Kamran Iqra, Saeeda Naz and Razzak Imran
GPGCC, Pakistan; GPGCC, Australia; Deakin, Australia

5:05PM **A Pilot Study for Investigating Gait Signatures in Multi-Scenario Applications [#21088]**
Sumit Hazra, Priyankar Roy, Anup Nandy and Rafal Scherer
MIBM Lab, Dept. of CSE, National Institute Of Technology, Rourkela, India; Dept. of Information Technology, IIEST Shibpur, Howrah, India; Czestochowa University of Technology, Poland

5:25PM **DRG2vec: Learning Word Representations from Definition Relational Graph [#20387]**
Xiaobo Shu, Bowen Yu, Zhenyu Zhang and Tingwen Liu
Institute of Information Engineering, Chinese Academy of Sciences. Beijing, China, China

5:45PM **A Multi-Population FA for Automatic Facial Emotion Recognition [#21155]**
Kamlesh Mistry, Baqar Rizvi, Chris Rook, Sadaf Iqbal, Li Zhang and Colin Paul Joy
Dept. of computer and information sciences, Northumbria University, United Kingdom; Transitional and Clinical Institute- Faculty of Medical Newcastle University, United Kingdom; Dept. of Computer Science & Information System Teesside University, United Kingdom

6:05PM **Improving Image Autoencoder Embeddings with Perceptual Loss [#20229]**
Gustav Grund Pihlgren, Fredrik Sandin and Marcus Liwicki
Lule\r{a} University of Technology, Sweden

6:25PM **Relative Vehicle Velocity Estimation using Monocular Video Stream [#20731]**
Deepak Kumar Jain, Rachna Jain, Linqin Cai, Meenu Gupta and Yash Upadhyay
Chongqing University of Posts and Telecommunications, China; Bharati Vidyapeeth's College of Engineering, India; Chandigarh University, India

Special Session I-SS42: Artificial Neural Networks for Healthcare and Bio-signals Analysis
Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Room 3, Chair: Francesco Carlo Morabito

4:45PM **A comparative analysis of multi-backbone Mask R-CNN for surgical tools detection [#21295]**
Gioele Ciaparrone, Francesco Bardozzo, Mattia Delli Priscoli, Juanita Londono Kallewaard, Maycol Ruiz Zuluaga and Roberto Tagliaferri
DISA-MIS, University of Salerno, Italy; Faculty of Engineering, Technological University of Pereira, Colombia

5:05PM **1D Convolutional Neural Network approach to classify voluntary eye blinks in EEG signals for BCI applications [#21315]**
Michele Lo Giudice, Giuseppe Varone, Cosimo Ieracitano, Nadia Mammone, Arcangelo Ranieri Bruna, Valeria Tomaselli and Francesco Carlo Morabito
Magna Graecia University of Catanzaro, Italy; Mediterranean University of Reggio Calabria, Italy; STMicroelectronics, Italy

5:25PM **Motor strength classification with machine learning approaches applied to anatomical neuroimages [#21362]**
Francesco Bardozzo, Sebastian Cano Uribe, Andrea G. Russo, Mateo Jimenez Castano, Mattia Delli Priscoli, Fabrizio Esposito and Roberto Tagliaferri
University of Salerno, Italy; UTP, Colombia

5:45PM **Towards Uncovering Feature Extraction From Temporal Signals in Deep CNN: the ECG Case Study [#21580]**

Jacopo Ferretti, Pietro Barbiero, Vincenzo Randazzo, Giansalvo Cirrincione and Eros Pasero

Dipartimento di Scienze Chirurgiche, Universita di Torino, Italy; Depertment of Mathematical Sciences, Politecnico di Torino, Italy; DET, Politecnico di Torino, Italy; Lab. LTI, University of Picardie Jules Verne, France; Elpro, Italy

6:05PM **Unveiling Parkinson's Disease Features from a Primate Model with Deep Neural Networks [#21615]**

Caetano Mazzoni Ranieri, Renan Cipriano Moioli, Roseli Aparecida Francelin Romero, Mariana Ferreira Pereira de Araujo, Maxwell Barbosa de Santana, Jhielson Montino Pimentel and Patricia Amancio Vargas

University of Sao Paulo, Brazil; Federal University of Rio Grande do Norte, Brazil; Federal University of Espirito Santo, Brazil; Federal University of Western Para, Brazil; Heriot Watt University, United Kingdom

6:25PM **A Convolutional Neural Network based self-learning approach for classifying neurodegenerative states from EEG signals in dementia [#21962]**

Cosimo Ieracitano, Nadia Mammone, Amir Hussain and Francesco Carlo Morabito

University Mediterranea of Reggio Calabria, Italy; Edinburgh Napier University, United Kingdom

Special Session I-SS12: Cybersecurity in Complex Environments

Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Room 4, Chair: Francesco Mercaldo

4:45PM **Hourly Global Solar Radiation Reconstruction Applying Machine Learning [#20844]**

Francesco Mercaldo, Antonella Santone, Francesco Tariello and Vanoli Giuseppe Peter

IIT-CNR, Italy; University of Molise, Italy

5:05PM **Malicious Collusion Detection in Mobile Environment by means of Model Checking [#20847]**

Rosangela Casolare, Fabio Martinelli, Francesco Mercaldo and Antonella Santone

University of Molise, Italy; IIT-CNR, Italy

5:25PM **Identify Potential Attacks from Simulated Log Analysis [#21448]**

Cinzia Bernardeschi, Andrea Domenici, Francesco Mercaldo and Antonella Santone

University of Pisa, Italy; IIT-CNR, Italy; University of Molise, Italy

5:45PM **Enhanced Privacy and Data Protection using Natural Language Processing and Artificial Intelligence [#21548]**

Fiammetta Marulli, Stefano Marrone, Fabio Martinelli, Antonella Santone and Francesco Mercaldo

University of Campania, Italy; IIT-CNR, Italy; University of Molise, Italy

6:05PM **DQR: Deep Q-Routing in Software Defined Networks [#21253]**

Syed Qaisar Jalil, Mubashir Husain Rehmani and Stephan Chalup

School of Electrical Engineering and Computing, The University of Newcastle, Australia; Department of Computer Science, Cork Institute of Technology (CIT), Ireland

6:25PM **Machine Learning Based MIMO Equalizer for High Frequency (HF) Communications [#21812]**

Samuel Spillane, Jung Kristopher, Bowers Kate, Peken Ture, Marefat Michael and Bose Tamal

University of Massachusetts Dartmouth, United States; Indiana University, United States; Oberlin College, United States; University of Arizona, United States

Special Session I-SS49: Validation, Explanation and Correction of Artificial Intelligence Systems
Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Room 5, Chair: Ivan Tyukin

4:45PM **Artificial Neural Network Pruning to Extract Knowledge [#20541]**
Evgeny M. Mirkes
University of Leicester, United Kingdom

5:05PM **Machine learning evaluating evolutionary fitness in complex biological systems [#20933]**
Oleg Kuzenkov, Andrew Morozov and Galina Kuzenkova
Lobachevsky State University of Nizhni Novgorod, Russia; University of Leicester, United Kingdom

5:25PM **Linear and Fisher Separability of Random Points in the d-dimensional Spherical Layer [#20953]**
Sergey Sidorov and Nikolai Zolotykh
Lobachevsky State University of Nizhni Novgorod, Russia

5:45PM **Local intrinsic dimensionality estimators based on concentration of measure [#21312]**
Jonathan Bac and Andrei Zinovyev
Institut Curie, France

6:05PM **Eigen-CAM: Class Activation Map using Principal Components [#20103]**
Mohammed Bany Muhammad and Mohammed Yeasin
University of Memphis, United States

6:25PM **Risk and Trust Perceptions of the Public of Artifical Intelligence Applications [#20374]**
Keeley Crockett, Matt Garratt, Annabel Latham, Edwin Colyer and Sean Goltz
Manchester Metropolitan University, United Kingdom; University of New South Wales, Australia; Manchester Metropolitan Univeristy, United Kingdom; Edith Cowan University, Australia

Session I-R14: Unsupervised learning and clustering 1
Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Room 6, Chair: Jeffrey Chan

4:45PM **Supervised Discriminative Sparse PCA with Adaptive Neighbors for Dimensionality Reduction [#20127]**
Zhenhua Shi, Dongrui Wu, Jian Huang, Yu-Kai Wang and Chin-Teng Lin
Huazhong University of Science and Technology, China; University of Technology, Sydney, Australia

5:05PM **Hubness-based Sampling Method for Nystrom Spectral Clustering [#20573]**
Hongmin Li, Xiucai Ye, Akira Imakura and Tetsuya Sakurai
University of Tsukuba, Japan

5:25PM **Improving Single and Multi-View Blockmodelling by Algebraic Simplification [#21719]**
Rishabh Ramteke, Peter J. Stuckey, Jeffrey Chan, Ramamohanarao Kotagiri, James Bailey, Christopher Leckie and Emir Demirovic
Indian Institute of Technology, Bombay, India; Monash University, Australia; RMIT University, Australia; University of Melbourne, Australia

5:45PM **Anomaly Detection in Trajectory Data with Normalizing Flows [#21507]**
Madson Dias, Cesar Lincoln Mattos, Ticiana da Silva, Jose Antonio Macedo and Wellington Silva
Federal University of Ceara, Brazil; National Department of Public Security, Brazil

6:05PM **A Structure of Restricted Boltzmann Machine for Modeling System Dynamics [#20809]**
Guillaume Padiolleau, Olivier Bach, Alain Hugget, Denis Penninckx and Frederic Alexandre
CEA-CESTA, France; INRIA, France

6:25PM **Dual-Triplet Metric Learning for Unsupervised Domain Adaptation in Video Face Recognition [#21868]**
George Ekladious, Hugo Lemoine, Eric Granger, Kaveh Kamali and Salim Moudache
ETS, Canada; Nuvoola, Canada

Session I-R15: Learning, Memory, Spatial Cognition
Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Room 7, Chair: Jeffrey Krichmar

4:45PM **Knowledge-based Context-aware Multi-turn Conversational Model with Hierarchical Attention [#20198]**
Chunquan Chen and Si Li
Beijing University of Posts and Telecommunications, China

5:05PM **Discrete Memory Addressing Variational Autoencoder for Visual Concept Learning [#20646]**
Yanze Min, Hang Su, Jun Zhu and Bo Zhang
Tsinghua University, China

5:25PM **A Computational Model for Latent Learning based on Hippocampal Replay [#20506]**
Pablo Scleidorovich, Martin Llofriu, Jean Marc Fellous and Alfredo Weitzenfeld
University of South Florida, United States; University of Arizona, United States

5:45PM **One Shot Spatial Learning through Replay in a Hippocampus-Inspired Reinforcement Learning Model [#21809]**
Adedapo Alabi, Ali Minai and Dieter Vanderelst
University of Cincinnati, United States

6:05PM **Neuromodulated Patience for Robot and Self-Driving Vehicle Navigation [#20552]**
Jinwei Xing, Xinyun Zou and Jeffrey Krichmar
University of California, Irvine, United States

6:25PM **Autonomous Programming for General Purposes: Theory and Experiments [#21884]**
Juyang Weng, Zejia Zheng, Wu Xiang and Castro-Garcia Juan
Michigan State University, United States; Nanjing University of Science and Technology, China

Plenary Poster Session I-P9: Deep neural networks
Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Poster Room 1, Chair: Xu Zhang

P1701 **Crowd Flow Forecasting with Multi-Graph Neural Networks [#20255]**
Xu Zhang, Ruixu Cao, Zuyu Zhang and Ying Xia
Chongqing University of Posts and Telecommunications, China

P1702 **Stylised Image Generation From Deep Neural Networks [#20591]**
Yameng Peng and Vic Ciesielski
RMIT University, Australia

P1703 **Transformation Based Deep Anomaly Detection in Astronomical Images [#21959]**
Esteban Reyes and Pablo Estevez
Universidad de Chile, Chile

P1704 **Adaptive Pooling Is All You Need: An Empirical Study on Hyperparameter-insensitive Human Action Recognition Using Wearable Sensors [#20487]**
Mubarak G. Abdu-Aguye, Walid Gomaa, Yasushi Makihara and Yasushi Yagi
Ahmadu Bello University, Nigeria; Egypt-Japan University of Science and Technology, Egypt; The Institute of Scientific and Industrial Research, Osaka University, Japan

P1705 Dynamic Graph Attention-Aware Networks for Session-Based Recommendation [#21855]

Ahed Abugabah, Xiaochun Cheng and Jianfeng Wang

Zayed University, United Arab Emirates; Middlesex University, United Kingdom; Sun Yat-sen University, China

P1706 Squeezed Deep 6DoF Object Detection using Knowledge Distillation [#21583]

Heitor Felix, Walber Rodrigues, David Macedo, Francisco Simoes, Adriano Oliveira, Veronica Teichrieb and Cleber Zanchettin

Voxar Labs, Centro de Informatica, Universidade Federal de Pernambuco, Recife, Brazil; RoboCIn, Centro de Informatica, Universidade Federal de Pernambuco, Recife, Brazil; Centro de Informatica, Universidade Federal de Pernambuco, Recife, Brazil; Instituto Federal de Pernambuco - Campus Belo Jardim, Belo Jardim, Brazil

P1707 Learning Arithmetic Operations With A Multistep Deep Learning [#21566]

Bastien Nollet, Mathieu Lefort and Frederic Armetta

LIRIS, France

P1708 A Classification Surrogate Model based Evolutionary Algorithm for Neural Network Structure Learning [#20403]

Wenyue Hu, Aimin Zhou and Guixu Zhang

East China Normal University, China

P1709 Stochastic Adversarial Learning for Domain Adaptation [#20638]

Jen-Tzung Chien and Ching-Wei Huang

National Chiao Tung University, Taiwan

P1710 Construct Convolutional Neural Networks Using Low-yield Binary Memristor Crossbars [#20775]

Sheng-Yang Sun, Hui Xu, Jiwei Li, Qingjiang Li, Hongqi Yu and Haijun Liu

National University of Defense Technology, China

P1711 EvoQ: Mixed Precision Quantization of DNNs via Sensitivity Guided Evolutionary Search [#20784]

Yong Yuan, Chen Chen, Xiyuan Hu and Silong Peng

Institute of Automation, Chinese Academy of Sciences, China

P1712 Cross Message Passing Graph Neural Network [#20576]

Zeyu Zhang, Zheng Liu, Qiyun Zhou and Yanwen Qu

School of Computer Information and Engineering ,Jiangxi Normal University, China; Jiangsu Key Laboratory of BDSIP, Nanjing University of Posts and Telecommunications, China

P1713 Towards Best Practice in Explaining Neural Network Decisions with LRP [#21469]

Maximilian Kohlbrenner, Alexander Bauer, Shinichi Nakajima, Alexander Binder, Wojciech Samek and Sebastian Lapuschkin

Fraunhofer Heinrich Hertz Institute, Germany; Technische Universitaet Berlin, Germany; Singapore University of Technology and Design, Singapore

P1714 Efficient Evolution for Neural Architecture Search [#21850]

Zihao Chen and Bin Li

University of Science and Technology of China, China

P1715 Predicting Solar X-ray Flux Using Deep Learning Techniques [#21866]

Sumi Dey and Olac Fuentes

University of Texas at El Paso, United States

Plenary Poster Session I-P10:
Tuesday, July 21, 4:45PM-6:45PM, Room: IJCNN Poster Room 2, Chair: Hoon Chung

P1901 Multi-Dialect Arabic Speech Recognition [#20118]
Abbas Raza Ali
Bournemouth University, United Kingdom

P1902 End-to-End Phoneme Recognition using Models from Semantic Image Segmentation [#21784]
Wei Gao, Ahmad Hashemi-Sakhtsari and Mark D. McDonnell
University of South Australia, Australia; Defence Science and Technology Group, Australia

P1903 Semi-supervised Training for Sequence-to-Sequence Speech Recognition Using Reinforcement Learning [#20011]
Hoon Chung, Hyeong-Bae Jeon and Jeon Gue Park
ETRI, Korea (South)

P1904 Vocoder-free End-to-End Voice Conversion with Transformer Network [#21847]
June-Woo Kim, Ho-Young Jung and Minho Lee
Kyungpook National University, Korea (South)

P1905 Two-stage Strategy for Small-footprint Wake-up-word Speech Recognition System [#20900]
Xinya You, Yajie Zhao and Mingyuan Sun
Heilongjiang University, China; Columbia University, United States; Northeastern University, China

P1906 Attention-based WaveNet-CTC for Tibetan multi-dialect multitask speech recognition [#21039]
Jianjian Yue, Yue Zhao, Xiaona Xu, Licheng Wu, Xiali Li, Bo Liu and Qiang Ji
Minzu University of China, China; Rensselaer Polytechnic Institute, United States

P1907 Effective Post-Training Quantization Of Neural Networks For Inference on Low Power Neural Accelerator [#20920]
Alexander Demidovskij and Smirnov Eugene
Higher School of Economics, Russia; Intel Corporation, Russia

P1908 Real-time Trajectory Tracking of a Quadrotor using Adaptive Backstepping Controller and RNN based Uncertainty Observer [#21844]
Subhash Chand Yogi, Vibhu Kumar Tripathi, Archit Krishna Kamath and Laxmidhar Behera
Indian Institute of Technology Kanpur, India

P1909 Learning to Play Precision Ball Sports from scratch: a Deep Reinforcement Learning Approach [#21097]
Liliana Antao, Armando Sousa, Luis Paulo Reis and Gil Goncalves
SYSTEC - Research Center for Systems and Technologies, Portugal; INESC TEC - INESC Technology and Science, Portugal; LIACC - Artificial Intelligence and Computer Science Laboratory, Portugal

P1910 Combined Online and Offline Inverse Dynamics Learning for a Robot Manipulator [#21862]
Amrut Sekhar Panda, Ravi Prakash, Laxmidhar Behera and Ashish Dutta
Indian Institute of Technology Kanpur, India

P1911 A Few-shot Dynamic Obstacle Avoidance Strategy in Unknown Environments [#20206]
Xiaoxiao Li, Sheng Bi, Yongxing Wang, Min Dong and Zhangshao Chen
South China University of Technology, China

P1912 Low-Quality Rendering-Driven 6D Object Pose Estimation from Single RGB Image [#21096]

Guoyu Zuo, Chengwei Zhang, Hongxing Liu and Daoxiong Gong

Beijing University of Technology, China

P1913 Control of Complex Nonlinear Dynamic Systems with Incremental Deep Learning Neural Networks [#20068]

Antonio Moran and Masao Nagai

Pontifical Catholic University of Peru, Peru; Tokyo University of Agriculture and Technology, Japan

P1914 GRANT: Ground-Roaming Autonomous Neuromorphic Targeter [#20523]

Jonathan Ambrose, Adam Foshie, Mark Dean, James Plank, Garrett Rose, John Mitchell, Catherine Schuman and Grant Bruer

The University of Tennessee, United States; Oak Ridge National Laboratory, United States; Georgia Institute of Technology, United States

P1915 Indoor Navigation for Mobile Agents: A Multimodal Vision FusionModel [#20719]

Dongfang Liu, Yiming Cui, Zhiwen Cao and Yingjie Chen

Purdue University, United States; University of Florida, United States

P1916 A comparative evaluation of time-delay, deep learning and echo state neural networks when used as simulated transhumeral prosthesis controllers [#21073]

Charles Day, Edward Chadwick and Dimitra Blana

Keele University, United Kingdom; University of Aberdeen, Scotland

P1917 Neural Network Control of Teleoperation Systems with Delay and Uncertainties based on Multilayer Perceptron Estimations [#20758]

Parham Kebria, Abbas Khosravi and Saeid Nahavandi

IISRI, Deakin University, Australia

P1918 Temporal Fusion Pointer network-based Reinforcement Learning algorithm for Multi-Objective Workflow Scheduling in the cloud [#20278]

Binyang Wang, Huifang Li, Zhiwei Lin and Yuanqing Xia

Beijing Institute of Technology, China

P1919 Approximating Optimisation Solutions for the Travelling Officer Problem with Neural Networks [#21565]

Wei Shao, Jeffrey Chan and Flora Salim

School of Science, RMIT University, Australia

Session I-R16: Deep neural networks

Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Room 1, Chair: Zeyu Zhang, Zheng Liu

7:00PM Adversarial Named Entity Recognition with POS label embedding [#20703]

Yuxuan Bai, Yu Wang, Bin Xia, Yun Li and Ziye Zhu

Nanjing University of Posts and Telecommunications, China

7:20PM RegionSparse: Leveraging Sparse Coding and Object Localization to Counter Adversarial Attacks [#21055]

Yunjian Zhang, Yanwei Liu, Liming Wang, Zhen Xu and Qiuqing Jin

Institute of Information Engineering, Chinese Academy of Sciences; School of Cyber Security, University of Chinese Academy of Sciences, China; Institute of Information Engineering, Chinese Academy of Sciences, China

7:40PM **Unseen Target Stance Detection with Adversarial Domain Generalization [#20153]**
Zhen Wang, Qiansheng Wang, Chengguo Lv, Xue Cao and Guohong Fu
Heilongjiang University, China; Institute of Artificial Intelligence, Soochow University, China

8:00PM **Dynamic Global-Local Attention Network Based On Capsules for Text Classification [#20060]**
Ji Wang, Qiaohong Chen, Haolei Pei, Qi Sun and Yubo Jia
Zhejiang Sci-Tech University, China

8:20PM **A Transformer based Approach for Identification of Tweet Acts [#21266]**
Tulika Saha, Aditya Prakash Patra, Sriparna Saha and Pushpak Bhattacharyya
IIT Patna, India

8:40PM **Cognitive Analysis of Mental States of People According to Ethical Decisions Using Deep Learning Approach [#21345]**
Dipayan Dewan, Lidia Ghosh, Biswadeep Chakraborty, Abir Chowdhury, Amit Konar and Atulya K. Nagar
Jadavpur University, India; Liverpool Hope University, United Kingdom

Special Session I-SS6: Bayesian Neural Networks: The Interplay between Bayes' Theorem and Neural Networks
Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Room 2, Chair: Junyu Xuan

7:00PM **Amortized Mixture Prior for Variational Sequence Generation [#20644]**
Jen-Tzung Chien and Chih-Jung Tsai
National Chiao Tung University, Taiwan

7:20PM **CosmoVAE: Variational Autoencoder for CMB Image Inpainting [#20776]**
Yi Kai, Guo Yi, Fan Yanan, Hamann Jan and Wang Yu Guang
University of New South Wales, Australia

7:40PM **ATT: Attention-based Timbre Transfer [#21116]**
Deepak Jain, Akshi Kumar, Linqin Cai, Siddharth Singhal and Vaibhav Kumar
Key Laboratory of Intelligent Air-Ground Cooperative Control for Universities in Chongqing College of Automation, Chongqing University of Posts and Telecommunications, Chongqing, China; Delhi Technological University, India; Key Laboratory of Industrial Internet of Things and Networked Control, Ministry of Education, Chongqing University of Posts and Telecommunications, Chongqing, China

8:00PM **Bayesian Graph Convolutional Neural Network based Patent Valuation Model [#21319]**
Weidong Liu, Xin Liu and Wenbo Qiao
Inner Mongolia University, China

8:20PM **Fast Switch Naive Bayes to Avoid Redundant Update for Concept Drift Learning [#21705]**
Liu Anjin, Zhang Guangquan, Wang Kun and Lu Jie
CAI, FEIT, UTS, Australia

8:40PM **The Variational Deficiency Bottleneck [#20941]**
Pradeep Kr. Banerjee and Guido Montufar
Max Planck Institute for Mathematics in the Sciences, Germany; UCLA, United States

Special Session I-SS38: Adversarial Machine Learning and Cyber Security
Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Room 3, Chair: Wei Liu

7:00PM **Lightweight Crypto-Assisted Distributed Differential Privacy for Privacy-Preserving Distributed Learning [#20992]**

Lingjuan Lyu

National University of Singapore, Singapore

7:20PM **Adversarial Reinforcement Learning under Partial Observability in Autonomous Computer Network Defence [#20306]**

Yi Han, David Hubczenko, Paul Montague, Olivier De Vel, Tamas Abraham, Benjamin Rubinstein, Christopher Leckie, Tansu Alpcan and Sarah Erfani

School of Computing and Information Systems, The University of Melbourne, Australia; Defence Science and Technology Group, Australian Department of Defence, Australia; Department of Electrical and Electronic Engineering, The University of Melbourne, Australia

7:40PM **Compressive Recovery Defense: Defending Neural Networks Against ℓ_2, ℓ_∞, and ℓ_0 Norm Attacks [#21100]**

Jasjeet Dhaliwal and Kyle Hambrook

San Jose State University, United States

8:00PM **Relative Robustness of Quantized Neural Networks Against Adversarial Attacks [#21429]**

Kirsty Duncan, Ekaterina Komendantskaya, Robert Stewart and Michael Lones

Department of Computer Science,Heriot-Watt University, Scotland

8:20PM **Detection of Adversarial Examples in Deep Neural Networks with Natural Scene Statistics [#21745]**

Anouar Kherchouche, Sid Ahmed Fezza, Wassim Hamidouche and Olivier Deforges

National Institute of Telecommunications and ICT, Algeria; Univ. Rennes, INSA Rennes, CNRS, IETR - UMR 6164, France

8:40PM **Targeted Forgetting and False Memory Formation in Continual Learners through Adversarial Backdoor Attacks [#21907]**

Muhammad Umer, Glenn Dawson and Robi Polikar

Rowan University, United States

Special Session I-SS15A: Deep Learning and Computational Intelligence for Medical Image Analysis
Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Room 4, Chair: Stanislaw Osowski

7:00PM **Textural and Deep Learning Methods in Recognition of Renal Cancer Types Based on CT Images [#20376]**

Aleksandra Osowska-Kurczab, Tomasz Markiewicz, Miroslaw Dziekiewicz and Malgorzata Lorent

Warsaw University of Technology, Poland; Warsaw University of Technology, Military Institute of Medicine, Poland; Military Institute of Medicine, Poland

7:20PM **Multidomain CT Metal Artifacts Reduction Using Partial Convolution Based Inpainting [#20934]**

Artem Pimkin, Alexander Samoylenko, Natalia Antipina, Anna Ovechkina, Andrey Golanov, Alexandra Dalechina and Mikhail Belyaev

Skolkovo Intitute of Science and Technology, Moscow Institute of Physics and Technology, Russia; Moscow Institute of Physics and Technology, Russia; N.N.Burdenko Center for Neurosurgery, Russia; Lomonosov Moscow State University, Russia; Moscow Gamma Knife Center at N.N.Burdenko Center for Neurosurgery, Russia; Skolkovo Institute of Science and Technology, Russia

7:40PM **Axis projection for Kidney-Region-Of-Interest detection in computed tomography [#21099]**

Tomasz Les, Tomasz Markiewicz, Miroslaw Dziekiewicz and Malgorzata Lorent

Warsaw University of Technology, Poland; Military Institute of Medicine, Poland

8:00PM **YOLO and Morphing-based Method for 3D Individualised Bone Model Creation. [#21529]**

Zuzanna Krawczyk and Jacek Starzynski

Warsaw University of Technology, Poland

8:20PM **PGD-UNet: A Position-Guided Deformable Network for Simultaneous Segmentation of Organs and Tumors [#21688]**

Ziqiang Li, Hong Pan, Yaping Zhu and A. K. Qin

School of Automation, Southeast Univeristy, China; Department of Computer Science and Software Engineering, Swinburne University of Technology, Australia; School of Information and Communication Engineering, Communication University of China, China

8:40PM **Deep Learning Ensemble for Melanoma Recognition [#20223]**

Stanislaw Osowski and Tomasz Les

Warsaw University of Technology, Military University of Technology, Poland; Warsaw University of Technology, Poland

Special Session I-SC7: CI in Transactive Energy Management and Smart Energy Network (CITESEN 2020)

Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Room 5, Chair: Fanlin Meng

7:00PM **Attitudinal Choquet Integral-Based Stochastic Multicriteria Acceptability Analysis [#20599]**

Xiaomei Mi, Huchang Liao and Xiao-Jun Zeng

Business School, Sichuan University, Chengdu 610064, China; Department of Computer Science, The Univerisity of Manchester Manchester, M13 9PL, United Kingdom

7:20PM **Exploring Smart Grid Time-of-Use Tariffs using a Robust Optimisation Framework [#20915]**

Paula Carroll

UCD, Ireland

7:40PM **Cross-Domain Data Fusion On Distribution Network Voltage Estimation with D-S Evidence Theory [#21263]**

Yuanbin Zhu, Chenghong Gu and Furong Li

The University of Bath, United Kingdom

8:00PM **An Inverse Prospect Theory Based-Approach for Linear Ordinal Ranking Aggregation with Its Application in Site Selection of Electric Vehicle Charging Station [#20160]**

Nana Liu, Zeshui Xu, Hangyao Wu, Peijia Ren and Fanlin Meng

Business School, Sichuan University, China; School of Business,Adnimistration South China University of Technology, China; Department of Mathematical Sciences,University of Essex, United Kingdom

8:20PM **Energy Forecasting with Building Characteristics Analysis [#21775]**

Shuang Dai and Fanlin Meng

University of Essex, United Kingdom

8:40PM **A Computational Intelligence Characterization of Solar Magnetograms [#20887]**

Julio J. Valdes, Ljubomir Nikolic, Simone Disabato and Manual Roveri

National Research Council Canada, Canada; Natural Resources Canada, Canada; Politecnico di Milano, Italy

Session I-R17: Unsupervised learning and clustering 2
Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Room 6, Chair: Jamil Al Shaqsi, Lehel Csato

7:00PM **k-Nearest Neighbor based Clustering with Shape Alternation Adaptivity [#21849]**
Yifeng Lu, Yao Zhang, Richter Florian and Seidl Thomas
LMU Munich, Germany

7:20PM **Quantum Collaborative K-means [#21336]**
Kaoutar Benlamine, Younes Bennani, Nistor Grozavu and Basarab Matei
Paris 13 University, France

7:40PM **Tweet to News Conversion: An Investigation into Unsupervised Controllable Text Generation [#21455]**
Zishan Ahmad, Mukuntha Narayanan Sundararaman, Asif Ekbal and Pushpak Bhattacharyya
Indian Institute of Technology Patna, India

8:00PM **Unified Multi-Domain Learning and Data Imputation using Adversarial Autoencoder [#20373]**
Andre Mendes, Julian Togelius and Coelho Leandro
New York University, United States; Pontifical Catholic University of Parana, Brazil

8:20PM **An Automatic Type-Inferential General Latent Feature Model [#21526]**
Neil Dhir, Tomasz Rudny, Davide Zilli and Alessandra Tosi
Alan Turing Institute, United Kingdom; Mind Foundry, United Kingdom

8:40PM **Black-box Evolutionary Search for Adversarial Examples against Deep Image Classifiers in Non-Targeted Attacks [#21608]**
Stepan Prochazka and Roman Neruda
Institute of Computer Science, Czech Academy of Sciences, Czech Republic

Session I-R18: Semantic Cognition and Symbolic Processing
Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Room 7, Chair: Jeff Mitchell

7:00PM **Knowledge Grounded Pre-Trained Model For Dialogue Response Generation [#20725]**
Yanmeng Wang, Wenge Rong, Jianfei Zhang, Yuanxin Ouyang and Zhang Xiong
Beihang University, China

7:20PM **RAD: Reinforced Attention Decoder Model On Question Generation [#20746]**
Xin Li, Zhen Huang, Feng Liu, Changjian Wang, Minghao Hu, Shiyi Xu and Yuxing Peng
Science and Technology on Parallel and Distributed Laboratory, National University of Defense Technology, China

7:40PM **Distantly-Supervised Neural Relation Extraction with Side Information using BERT [#21337]**
Johny Moreira, Chaina Oliveira, David Macedo, Cleber Zanchettin and Luciano Barbosa
Universidade Federal de Pernambuco, Brazil

8:00PM **Reinforcement-based Program Induction in a Neural Virtual Machine [#20895]**
Garrett Katz, Khushboo Gupta and James Reggia
Syracuse University, United States; Pacific Northwest National Laboratory, United States; University of Maryland, United States

8:20PM **Harnessing the Symmetry of Convolutions for Systematic Generalisation [#21288]**
Jeff Mitchell and Jeffrey S. Bowers
University of Bristol, United Kingdom

8:40PM Composing Bossa Nova by Evolutionary Computation [#21164]
Yu-Wei Wen and Chuan-Kang Ting
National Chung Cheng University, Taiwan; National Tsing Hua University, Taiwan

Plenary Poster Session I-P11: Deep neural networks
Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Poster Room 1, Chair: Carlos Pereira

P2101 Efficient Neural Architecture for Text-to-Image Synthesis [#21498]
Douglas M. Souza, Jonatas Wehrmann and Duncan D. Ruiz
PUCRS, Brazil

P2102 Arbitrary Chinese Font Generation from a Single Reference [#20085]
Zhichen Lai, Chenwei Tang and Jiancheng Lv
College of Computer Science, Sichuan University, China

P2103 HLGSNet: Hierarchical and Lightweight Graph Siamese Network with Triplet Loss for fMRI-based Classification of ADHD [#21879]
Ranjeet Ranjan Jha Jha, Gaurav Jaswal, Aditya Nigam, Arnav Bhavsar, Sudhir K Pathak and Rathish Kumar
Indian Institute of Technology Mandi, India; Indian Institute of Technology Delhi, India; University of Pittsburgh, India; Indian Institute of Technology Kanpur, India

P2104 Attention and Graph Matching Network for Retrieval-Based Dialogue System with Domain Knowledge [#20285]
Xu Li and Jinghua Zhu
Heilongjiang University, China

P2105 Hybrid approach for Anomaly Detection in Time Series Data [#21475]
Zeineb Ghrib, Rakia Jaziri and Rim Romdhane
University of Paris VIII, Paris, France, France; Devoteam, Paris, France, France

P2106 SBN: Scale Balance Network for Salient Object Detection [#20115]
Zhenshan Tan and Xiaodong Gu
Fudan University, China

P2107 A Multi-Task Learning Approach to Improve Sentiment Analysis with Explicit Recommendation [#20288]
Olivier Habimana, Yuhua Li, Ruixuan Li, Xiwu Gu and Peng Yuqi
Huazhong University of Science and Technology, China

P2108 Cross-Scale Correlation Stereo Network [#21913]
Chao Yang, Wenbin Yao and Xiaoyong Li
Beijing University of Posts and Telecommunications, China

P2109 On the Trend-corrected Variant of Adaptive Stochastic Optimization Methods [#20648]
Bingxin Zhou, Xuebin Zheng and Junbin Gao
The University of Sydney, Australia

P2110 A Novel Approach for Automatic Enhancement of Fingerprint Images via Deep Transfer Learning [#21693]
Aldisio Medeiros, Joao Andrade, Paulo Serafim, Alexandre Santos, Jose Maia, Fernando Trinta, Jose Macedo, Pedro Filho and Paulo Rego
Federal University of Ceara, Brazil; Instituto Federal do Ceara, Brazil

P2111 Prediction of Strawberry Yield and Farm Price Utilizing Deep Learning [#21815]
Lobna Nassar, Ifeanyi Okwuchi, Muhammad Saad, Fakhri Karray, Kumaraswamy Ponnambalam and Prarabdha Agrawal
University of Waterloo, Canada

P2112 Deep Learning Based Approach for Fresh Produce Market Price Prediction [#21801]
Lobna Nassar, Ifeanyi Okwuchi, Muhammad Saad, Fakhri Karray and Kumaraswamy Ponnambalam
University of Waterloo, Canada

P2113 Attention-based 3D Object Reconstruction from a Single Image [#20943]
Andrey de Aguiar Salvi, Nathan Schneider Gavenski, Eduardo Henrique Pais Pooch, Felipe Roque Tasoniero and Rodrigo Coelho Barros
Pontificia Universidade Catolica do Rio Grande do Sul, Brazil

P2114 Analysis and Learning of Capsule Networks Robust for Small Image Deformation [#20740]
Nozomu Ohta, Shin Kawai and Hajime Nobuhara
Department of Intelligent Interaction Technologies, University of Tsukuba, Japan

P2115 A Novel DNN Training Framework via Data Sampling and Multi-Task Optimization [#21829]
Boyu Zhang, A. K. Qin, Hong Pan and Timos Sellis
Swinburne University of Technology, Australia

P2116 Learning Representations using Spectral-Biased Random Walks on Graphs [#20507]
Charu Sharma, Jatin Chauhan and Manohar Kaul
Indian Institute of Technology Hyderabad, India

P2117 Improving Expressivity of Graph Neural Networks [#20899]
Stanislaw Purgal
University of Innsbruck, Austria

P2118 Pixel-based layer segmentation of complex engineering drawings using convolutional neural networks [#21326]
Carlos Francisco Moreno-Garcia, Pam Johnston and Bello Garkuwa
Robert Gordon University, United Kingdom

Plenary Poster Session I-P12:
Tuesday, July 21, 7:00PM-9:00PM, Room: IJCNN Poster Room 2, Chair: Romis Attux

P2301 SAR Image Specle Reduction based on a Generative Adversarial Network [#20375]
Ruijiao Liu, Yangyang Li and Licheng Jiao
Xidian University, China

P2302 Faster alpha-expansion via dynamic programming and image partitioning [#20957]
Jefferson Fontinele, Marcelo Mendonca, Marco Ruiz, Joao Papa and Luciano Oliveira
UFBA, Brazil; VORTEX-CoLab, Portugal; UNESP, Brazil

P2303 Scene Attention Mechanism for Remote Sensing Image Caption Generation [#21752]
Shiqi Wu, Xiangrong Zhang, Xin Wang, Chen Li and Licheng Jiao
Xidian University, China; Xi'an Jiaotong University, China

P2304 Metric Learning for Electrical Submersible Pump Fault Diagnosis [#20422]
Lucas Henrique Sousa Mello, Marcos Pellegrini Ribeiro, Thiago Oliveira Santos, Flavio Miguel Varejao and Alexandre Loureiros Rodrigues
Federal University of Espirito Santo, Brazil; Petrobras, Brazil

P2305 DAGNet: Exploring the Structure of Objects for Saliency Detection [#20441]
Rao Haobo, Zhou Zhiheng, Li Bo and Shu Xin
School of Electronic and Information Engineering, South China University of Technology, China; College of Information Science and Technology, Nanjing Agricultural University, China

P2306 Visual Relational Reasoning for Image Caption [#20061]
Haolei Pei, Qiaohong Chen, Ji Wang, Qi Sun and Yubo Jia
Zhejiang Sci-Tech University, China

P2307 Distance-Guided Mask Propagation Model for Efficient Video Object Segmentation [#20359]

Jiajia Liu, Hongning Dai, Bo Li and Gaozhong Tang

School of Electronic and Information Engineering, South China University of Technology, China; Faculty of Information Technology, Macau University of Science and Technology, China

P2308 Cross-Domain Adversarial Autoencoder for Fine Grained Category Preserving Image Translation [#20326]

Haodi Hou, Jing Huo and Yang Gao

Nanjing University, China

P2309 3D Human Pose Estimation based on Center Of Gravity [#20652]

Hao Xu and Suping Wu

Ningxia University, China

P2310 Convolutional Neural Network with Inception Blocks for Image Compression Artifact Reduction [#21577]

Purbaditya Bhattacharya and Udo Zoelzer

Helmut Schmidt University, Germany

P2311 Cross-View Gait Recognition Based on U-Net [#21618]

Israel Raul Tinini Alvarez and Guillermo Sahonero-Alvarez

Centro de Investigacion, Desarrollo e Innovacion en Ingenieria Mecatronica – Universidad Catolica Boliviana “San Pablo”, Bolivia

P2312 A Neural-Network-Based Driver Gaze Classification System with Vehicle Signals [#21554]

Simone Dari, Nikolay Kadrileev and Eyke Huellermeier

BMW Group, Germany; Technical University Munich, Germany; Paderborn University, Germany

P2313 On Interpretability of Deep Learning based Skin Lesion Classifiers using Concept Activation Vectors [#21595]

Adriano Lucieri, Muhammad Naseer Bajwa, Stephan Alexander Braun, Muhammad Imran Malik, Andreas Dengel and Sheraz Ahmed

German Research Center for Artificial Intelligence GmbH (DFKI), Germany; University Hospital Muenster, Germany; National University of Science and Technology, Pakistan

P2314 Problems of Representation of Electrocardiograms in Convolutional Neural Networks [#20451]

Iana Sereda, Sergey Alekseev, Aleksandra Koneva, Alexey Khorkin and Grigory Osipov

Nizhny Novgorod State University, Russia; Lobachevsky State University of Nizhny Novgorod - National Research University (UNN), Russia

P2315 Feature Extraction Evaluation for Two Motor Imagery Recognition Based on Common Spatial Patterns, Time-Frequency Transformations and SVM [#20460]

Mario I Chacon-Murguia and Eduardo Rivas-Posada

Chihuahua Institute of Technology, Mexico

P2316 Asynchronous Brain Computer Interfaces Using Echo State Networks [#20595]

Eyal Zakkay, Amjad Abu-Rmileh, Amir B. Geva and Oren Shriki

Ben-Gurion University, Israel

P2317 Unconstrained Arabic Scene Text Analysis in Wild Images using Concurrent Invariant Points [#21894]

Saad Ahmed, Saeed Naz, Razzak Imran and Mukesh Prasad

KSAU-HS, Saudi Arabia; GPGC, Pakistan; Deakin, Australia; UTS, Australia

P2318 Distributed Machine Learning for Predictive Analytics in Mobile Edge Computing Based IoT Environments [#21895]

Prabath Abeysekara, Hai Dong and A. K. Qin

RMIT University, Australia; Swinburne University of Technology, Australia

P2319 Myocardial Infarction Detection and Quantification Based on a Convolution Neural Network with Online Error Correction Capabilities [#21092]

Shuihua Wang, Gerry McCann and Ivan Tyukin

University of Leicester, United Kingdom

P2320 Deep Feature Embedding and Hierarchical Classification for Audio Scene Classification [#20942]

Lam Pham, Ian McLoughlin, Huy Phan, Ramaswamy Palaniappan and Afred Mertins

School of Computing, University of Kent, United Kingdom; Institute for Signal Processing, Luebeck University, Germany

P2321 Adaptive Level Set with region analysis via Mask R-CNN: A comparison against classical methods. [#21792]

Virginia Nunes, Aldisio Medeiros, Hercules Francisco, Gabriel Bezerra and Pedro Reboucas Filho, Instituto Federal do Ceara, Brazil

WEDNESDAY, JULY 22

Session I-R19: Deep neural networks
Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Room 1, Chair: Ariel Ruiz-Garcia

3:30PM **Self-Optimisation of Dense Neural Network Architectures: An Incremental Approach. [#20176]**
Antonio Garcia Diaz and Hugues Bersini
Universite libre de Bruxelles (ULB), Belgium

3:50PM **Enabling Continual Learning with Differentiable Hebbian Plasticity [#21799]**
Vithursan Thangarasa, Thomas Miconi and Graham Taylor
University of Guelph, Canada; Uber AI, United States

4:10PM **Soft Rotation Equivariant Convolutional Neural Networks [#20152]**
Eduardo Castro, Jose Costa Pereira and Jaime S. Cardoso
Institute for Systems and Computer Engineering, Technology and Science (INESCTEC), Portugal

4:30PM **Risk-Controlled Selective Prediction for Regression Deep Neural Network Models [#20828]**
Wenming Jiang, Ying Zhao and Zehan Wang
Tsinghua University, China

4:50PM **Attention-Based Multi-Model Ensemble for Automatic Cataract Detection in B-Scan Eye Ultrasound Images [#20955]**
Xiaofei Zhang, Jiancheng Lv, Heng Zheng and Yongsheng Sang
College of Computer science, Sichuan University, China; College of Computer Science, Sichuan University, China; Sichuan Yanting County People's Hospital, China

5:10PM **Emotion Recognition from Faces in an Unconstrained Environment for use on Social Robots [#21387]**
Nicola Webb, Ariel Ruiz-Garcia, Mark Elshaw and Vasile Palade
Bristol Robotic Lab, United Kingdom; Coventry University, United Kingdom

Special Session I-SS7: Machine Learning Applications in Cyber Security
Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Room 2, Chair: Mohammad Amirhosseini

3:30PM **Orthus: A Bimodal Learning Architecture for Malware Classification [#20363]**
Daniel Gibert, Carles Mateu and Jordi Planes
University of Lleida, Spain

3:50PM **Semi-Supervised Domain-Adversarial Training for Intrusion Detection against False Data Injection in the Smart Grid [#20672]**
Yongxuan Zhang and Jun Yan
Concordia University, Canada

4:10PM **Explaining AI for Malware Detection: Analysis of Mechanisms of MalConv [#21218]**
Shamik Bose, Timothy Barao and Xiuwen Liu
Florida State University, United States

4:30PM **Deep Neural Networks for Malicious JavaScript Detection Using Bytecode Sequences [#21252]**
Muhammad Fakhrur Rozi, Sangwook Kim and Seiichi Ozawa
Kobe University, Japan

4:50PM **Recurrent Neural Networks for Colluded Applications Attack Detection in Android OS Devices [#21275]**

Igor Khokhlov, Ninad Ligade and Leon Reznik

Rochester Institute of Technology, United States

5:10PM **FLAGB: Focal Loss based Adaptive Gradient Boosting for Imbalanced Traffic Classification [#21281]**

Yu Guo, Zhenzhen Li, Zhen Li, Gang Xiong, Minghao Jiang and Gaopeng Gou

Institute of Information Engineering, Chinese Academy of Sciences&School of Cyber Security, University of Chinese Academy of Sciences, China

Special Session I-SS40: Complex-valued and Quaternionic Neural Networks: Theory and Applications

Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Room 3, Chair: Akira Hirose

3:30PM **Similar land-form discovery: Complex absolute-value max pooling in complex-valued convolutional neural networks in interferometric synthetic aperture radar [#20478]**

Yuki Sunaga, Ryo Natsuaki and Akira Hirose

The University of Tokyo, Japan

3:50PM **Impulse Noise Filtering using MLMVN [#20610]**

Olivia Keohane and Igor Aizenberg

Manhattan College, United States

4:10PM **Constructing Convolutional Neural Networks Based on Quaternion [#21105]**

Shuto Hongo, Teijiro Isokawa, Nobuyuki Matsui, Haruhiko Nishimura and Naotake Kamiura

Graduate School of Engineering. University of Hyogo, Japan; University of Hyogo, Japan; Graduate School of Applied Informatics. University of Hyogo, Japan

4:30PM **Time Series Prediction by Quaternionic Qubit Neural Network [#21112]**

Takuya Teguri, Teijiro Isokawa, Nobuyuki Matsui, Haruhiko Nishimura and Naotake Kamiura

Graduate School of Engineering, University of Hyogo, Japan; University of Hyogo, Japan; Graduate School of Applied Informatics, University of Hyogo, Japan

4:50PM **Four Models of Hopfield-Type Octonion Neural Networks and Their Existing Conditions of Energy Functions [#20572]**

Yasuaki Kuroe, Hitoshi Iima and Yutaka Maeda

Kansai University, Japan; Kyoto Institute of Technology, Japan

5:10PM **Extreme Learning Machines on Cayley-Dickson Algebra Applied for Color Image Auto-Encoding [#20869]**

Guilherme Vieira and Marcos Eduardo Valle

University of Campinas, Brazil

Special Session I-SS15B: Deep Learning and Computational Intelligence for Medical Image Analysis

Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Room 4, Chair: Stanislaw Osowski

3:30PM **A GAN-based Domain Adaptation Method for Glaucoma Diagnosis [#20698]**

Sun Yunzhe, Yang Gang, Ding Dayong, Cheng Gangwei, Xu Jieping and Li Xirong

Renmin University of China, China; Vistel AI Lab, Visionary Intelligence Ltd., China; Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, China

3:50PM **A First Glance to the Quality Assessment of Dental Photostimulable Phosphor Plates with Deep Learning [#21341]**

Ariana Bermudez, Saul Calderon Ramirez, Trevor Thang, Pascal Tyrrell, Armaghan MoemeniYang, Shengxiang Yang and Jordina Torrents-Barrena

Instituto Tecnologico de Costa Rica, Costa Rica; De Montfort University, United Kingdom; University of Toronto, Canada; University of Nottingham, United Kingdom; Universitat Rovira i Virgili, Spain

4:10PM **U-Net and Active Contour Methods for Brain Tumour Segmentation and Visualization [#21053]**

Estera Kot, Zuzanna Krawczyk, Krzysztof Siwek and Piotr Czwarnowski

Faculty of Electrical Engineering Warsaw University of Technology, Poland; Nuclear Medicine Department Medical University Of Warsaw, Poland

4:30PM **MufiNet: Multiscale Fusion Residual Networks for Medical Image Segmentation [#21674]**

Chun Wang, Zhi Wang, Wei Xi, Zhao Yang, Gairui Bai, Ruimeng Wang and Meichen Duan

Xi'an Jiaotong University, China; The University of New South Wales, Australia

4:50PM **Automatic Image Labeling with Click Supervision on Aerial Images [#20508]**

Krittaphat Pugdeethosapol, Morgan Bishop, Dennis Bowen and Qinru Qiu

Syracuse University, United States; Air Force Research Laboratory, United States; Technergetics, United States

5:10PM **End-to-end Multimodel Deep Learning for Malware Classification [#21750]**

Elijah Snow, Mahbubul Alam, Alexander Glandon and Khan Iftekharuddin

University of Texas at Dallas, United States; Old Dominion University, United States

Special Session I-SC8: CI for Bioinformatics and Computational Biology

Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Room 5, Chair: Antonello Rizzi

3:30PM **On the Optimization of Embedding Spaces via Information Granulation for Pattern Recognition [#21500]**

Alessio Martino, Fabio Massimo Frattale Mascioli and Antonello Rizzi

University of Rome "La Sapienza", Department of Information Engineering, Electronics and Telecommunications, Italy

3:50PM **Hybrid Evolutionary Framework for Selection of Genes Predicting Breast Cancer Relapse [#21662]**

Lorenzo Perino, Silvia Cascianelli and Marco Masseroli

Politecnico di Milano, Italy

4:10PM **Parsimonious Computing: A Minority Training Regime for Effective Prediction in Large Microarray Expression Data Sets [#21296]**

Shailesh Sridhar, Snehanshu Saha, Azhar Shaikh, Rahul Yedida and Sriparna Saha

PES University, India; BITS Pilani K K Birla Goa Campus, India; North Carolina State University, United States; IIT Patna, India

4:30PM **A Feature Learning based Technique to Classify Medline Disease Abstracts [#21591]**

Hisham Al-Mubaid

UHCL, United States

4:50PM **Learning and Visualizing Genomic Signatures of Cancer Tumors using Deep Neural Networks [#21555]**

Tarek Khorshed, Mohamed N. Moustafa and Ahmed Rafea

The American University in Cairo, Egypt

5:10PM **JINS: Jaccard Distance and Instance Normalization based Skin Lesion Segmentation method [#21864]**
Joohi Chauhan, Gourav Wadhwa and Puneet Goyal
Indian Institute of Technology Ropar, India

Session I-R20: Reinforcement learning and adaptive dynamic programming 1
Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Room 6, Chair: Minho Lee

3:30PM **Language Inference with Multi-head Automata through Reinforcement Learning [#20859]**
Alper Sekerci and Ozlem Salehi
Ozyegin University, Turkey

3:50PM **The Deep Quality-Value Family of Deep Reinforcement Learning Algorithms [#20322]**
Matthia Sabatelli, Gilles Louppe, Pierre Geurts and Marco Wiering
University of Liege, Belgium; University of Groningen, Netherlands

4:10PM **Automatic Policy Decomposition through Abstract State Space Dynamic Specialization [#21531]**
Rene Sturgeon and Francois Rivest
Royal Military College of Canada, Canada

4:30PM **Effective Deep Reinforcement Learning Setups for Multiple Goals on Visual Navigation [#21643]**
Luiz Ricardo Takeshi Horita, Denis Fernando Wolf and Valdir Grassi Junior
Sidia Institute of Science and Technology, Brazil; University of Sao Paulo, Brazil

4:50PM **Novelty-Guided Reinforcement Learning via Encoded Behaviors [#21434]**
Rajkumar Ramamurthy, Rafet Sifa, Max Luebbering and Christian Bauckhage
Fraunhofer IAIS, Germany; Fraunhofer Center for Machine Learning, Germany

5:10PM **Maximum Entropy Reinforcement Learning with Evolution Strategies [#20621]**
Longxiang Shi, Shijian Li, Qian Zheng, Longbing Cao, Long Yang and Gang Pan
Zhejiang University, China; Nanyang Technological University, Singapore; University of Technology, Sydney, Australia

Session I-R21: Motor Control
Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Room 7, Chair: Jun Yamada

3:30PM **Autonomous learning and chaining of motor primitives using the Free Energy Principle [#20826]**
Louis Annabi, Alexandre Pitti and Mathias Quoy
ETIS UMR 8051, CY University, ENSEA, CNRS, France

3:50PM **Neurodynamic Sensory-Motor Phase Binding for Multi-Legged Walking Robots [#21778]**
Rudolf Szadkowski and Jan Faigl
Czech Technical University in Prague, Czech Republic

4:10PM **Multi-Agent Pattern Formation: a Distributed Model-Free Deep Reinforcement Learning Approach [#20184]**
Elhadji Amadou Oury Diallo and Toshiharu Sugawara
Waseda University, Japan

4:30PM **Deep Reinforcement Learning Control of Hand-EyeCoordination with a Software Retina [#21690]**
Boyd Lewis, Popovic Vanja and Siebert Paul
University of Strathclyde, United Kingdom; University of Glasgow, United Kingdom

4:50PM **Evolution of a Complex Predator-Prey Ecosystem on Large-scale Multi-Agent Deep Reinforcement Learning [#20736]**

Jun Yamada, John Shawe-Taylor and Zafeirios Fountas

University College London, Emotech Labs, United Kingdom; University College London, United Kingdom

5:10PM **Balance Control of a Bipedal Robot Utilizing Intuitive Pattern Generators with Extended Normalized Advantage Functions [#21653]**

Christos Kouppas, Mohamad Saada, Qinggang Meng, Mark King and Dennis Majoe

Loughborough University, United Kingdom; Motion Robotics LTD, United Kingdom

Plenary Poster Session I-P13: Deep neural networks

Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Poster Room 1, Chair: Richard Duro

P2501 **Retraining Quantized Neural Network Models with Unlabeled Data [#20958]**

Kundjanasith Thonglek, Keichi Takahashi, Kohei Ichikawa, Chawanat Nakasan, Hidemoto Nakada, Ryousei Takano and Hajimu Iida

Nara Institute of Science and Technology, Japan; Kanazawa University, Japan; National Institute of Advanced Industrial Science and Technology, Japan

P2502 **Approximate Manifold Defense Against Multiple Adversarial Perturbations [#20739]**

Jay Nandy, Wynne Hsu and Mong Li Lee

National University of Singapore, Singapore

P2503 **Controllable Question Generation via Sequence-to-Sequence Neural Model with Auxiliary Information [#20666]**

Zhen Cao, Sivanagaraja Tatinati and Andy W. H. Khong

Nanyang Technological University, Singapore

P2504 **Improving Abstractive Text Summarization with History Aggregation [#20126]**

Liao Pengcheng, Zhang Chuang, Chen Xiaojun and Zhou Xiaofei

School of Cyber Security University of Chinese Academy of Sciences, China; Institute of Information Engineering Chinese Academy of Sciences, China

P2505 **Vehicle Re-Identification by Deep Feature Embedding and Approximate Nearest Neighbors [#21673]**

Artur O. R. Franco, Felipe F. Soares, Fernando A. de C. Gomes, Jose A. F. Macedo, Aloisio V. Lira Neto, Paulo A. L. Rego and Jose G. R. Maia

Federal University of Ceara, Brazil; Brazilian Federal Highway Police, Brazil

P2506 **A Dynamic-Attention on Crowd Region with Physical Optical Flow Features for Crowd Counting [#20328]**

Qian Wang, Wenxi Li, Songjian Chen and Rui Feng

Fudan University, China

P2507 **Enhancing Pre-trained Language Representation for Multi-Task Learning of Scientific Summarization [#20774]**

Ruipeng Jia, Yanan Cao, Fang Fang, Jinpeng Li, Yanbing Liu and Pengfei Yin

Institute of Information Engineering, Chinese Academy of Sciences & School of Cyber Security, University of Chinese Academy of Sciences, China; Institute of Information Engineering, Chinese Academy of Sciences, China

P2508 **Performance analysis of neural network topologies and hyperparameters for deep clustering [#21386]**

Muhammed Kucuk and Ismail Uysal

University of South Florida, United States

P2509 Implicit Discriminator in Variational Autoencoder [#20105]
Prateek Munjal, Akanksha Paul and Narayanan Chatapuram Krishnan
Indian Institute of Technology Ropar, India

P2510 Semantic Hierarchy-based Convolutional Neural Networks for Image Classification [#21661]
Matheus Inoue, Carlos Henrique Forster and Antonio Carlos dos Santos
University of Sao Paulo, Brazil; Aeronautics Institute of Technology, Brazil; Itau-Unibanco, Brazil

P2511 U-Net with Dense Encoder, Residual Decoder and Depth-wise Skip Connections [#21881]
Weiqin Ying, Junhui Li, Yu Wu, Kaijie Zheng, Yali Deng and Jiachen Li
South China University of Technology, China; Guangzhou University, China

P2512 Generating Multi-label Adversarial Examples by Linear Programming [#21804]
Nan Zhou, Wenjian Luo, Xin Lin, Peilan Xu and Zhenya Zhang
School of Computer Science and Technology, University of Science and Technology of China, China; School of Computer Science and Technology, Harbin Institute of Technology, China; Anhui Province Key Laboratory of Intelligent Building and Building Energy Saving, Anhui Jianzhu University, China

P2513 Layer-wise Adversarial Training Approach to Improve Adversarial Robustness [#21822]
Xiaoyi Chen and Ni Zhang
NEC Labs, China, China

P2514 OvA-INN: Continual Learning with Invertible Neural Networks [#20231]
Guillaume Hocquet, Olivier Bichler and Damien Querlioz
University of Paris-Saclay, France; CEA, France

P2515 En-VStegNET: Video Steganography using spatio-temporal feature enhancement with 3D-CNN and Hourglass [#21848]
Aman Jaiswal, Suraj Kumar and Aditya Nigam
IIT Dharwad, India; GLA University Mathura, India; IIT Mandi, India

P2516 Efficient 3D Semantic Segmentation of Seismic Images using Orthogonal Planes 2D Convolutional Neural Networks [#20585]
Arthur Bridi Guazzelli, Mauro Roisenberg and Bruno Barbosa Rodrigues
Federal University of Santa Catarina, Brazil; Petrobras S.A., Brazil

P2517 Distilling Essence of a Question: A Hierarchical Architecture for Question Quality in Community Question Answering Sites [#20415]
Mun Kit Ho, Sivanagaraja Tatinati and Andy W. H. Khong
Nanyang Technological University, Singapore

Plenary Poster Session I-P14:
Wednesday, July 22, 3:30PM-5:30PM, Room: IJCNN Poster Room 2, Chair: Antonello Rizzi

P2701 Interpretable Time-series Classification on Few-shot Samples [#20413]
Wensi Tang, Lu Liu and Guodong Long
University of Technology Sydney, Australia

P2702 Multivariate Time Series Prediction with PID-based Residual Compensation [#21119]
Jinxin Liu, Qiangxing Tian and Donglin Wang
Westlake University, China

P2703 SASRM: A Semantic and Attention Spatio-temporal Recurrent Model for Next Location Prediction [#20311]

Xu Zhang, Boming Li, Chao Song, Zhengwen Huang and Yan Li

Chongqing University of Posts and Telecommunications, China; China Academy of Electronics and Information Technology, China; Brunel University London, United Kingdom; Inha University, Korea (South)

P2704 Combining an LSTM neural network with the Variance Ratio Test for time series prediction and operation on the Brazilian stock market [#21355]

Caio Mario Mesquita, Renato Oliveira and Adriano Pereira

Universidade Federal de Minas Gerais, Brazil

P2705 A Dual Network Solution (DNS) for Lag-Free Time Series Forecasting [#20470]

Subhrajit Samanta, Mahardhika Pratama, Suresh Sundaram and Narasimalu Srikanth

Nanyang Technological University, Singapore; IISC, Bengaluru, India

P2706 Dynamic Bus Arrival Time Prediction: A Temporal Difference Learning Approach [#21654]

Vignesh L K P, Avinash Achar and Gokul Karthik

Tata Consultancy Services, India

P2707 Untargeted, Targeted and Universal Adversarial Attacks and Defenses on Time Series [#20727]

Pradeep Rathore, Arghya Basak, Sri Harsha Nistala and Venkataramana Runkana

TCS Research, India

P2708 A novel dynamically adjusted regressor chain for taxi demand prediction [#20863]

Zipeng Wu and Guan Lian

Guilin University of Electronic Technology, China

P2709 Multi-step ahead Bitcoin Price Forecasting Based on VMD and Ensemble Learning Methods [#20347]

Ramon Gomes da Silva, Matheus Henrique Dal Molin Ribeiro, Naylene Fraccanabbia, Viviana Cocco Mariani and Leandro dos Santos Coelho

Pontifical Catholic University of Parana, Brazil; Federal Technological University of Parana; Pontifical Catholic University of Parana, Brazil; Pontifical Catholic University of Parana; Federal University of Parana, Brazil

P2710 Electricity energy price forecasting based on hybrid multi-stage heterogeneous ensemble: Brazilian commercial and residential cases [#20864]

Matheus Henrique Dal Molin Ribeiro, Ramon Gomes da Silva, Cristiane Canton, Naylene Fraccanabbia, Viviana Cocco Mariani and Leandro dos Santos Coelho

Federal Technological University of Parana; Pontifical Catholic University of Parana, Brazil; Pontifical Catholic University of Parana, Brazil; Pato Branco University Center, Brazil

P2711 DLEP: A Deep Learning Model for Earthquake Prediction [#20984]

Rui Li, Xiaobo Lu, Shuowei Li, Haipeng Yang, Jianfeng Qiu and Lei Zhang

Anhui University, China

P2712 SDCN: Sparsity and Diversity Driven Correlation Networks for Traffic Demand Forecasting [#21076]

Wenjie Li, Xue Yang, Xiaohu Tang and Shutao Xia

Southwest Jiaotong University, China; Tsinghua University, China

P2713 Time series ordinal classification via shapelets [#21255]

David Guijo-Rubio, Pedro A. Gutierrez, Anthony Bagnall and Cesar Hervas-Martinez

University of Cordoba, Spain; University of East Anglia, United Kingdom

P2714 Hybrid Prediction Model for Mobile Data Traffic: A Cluster-level Approach [#21208]

Bethehem S. Shawel, Tsegamlak T. Debella, Getinet Tesfaye, Yonas Y. Tefera and Dereje H. Woldegebreal

SECE, AAiT, Addis Ababa University, Ethiopia

P2715 Achieving Explainability of Intrusion Detection System by Hybrid Oracle-Explainer Approach [#20850]

Mateusz Szczepanski, Michal Choras, Marek Pawlicki and Rafal Kozik

ITTI Sp. z o.o. Poznan and UTP Bydgoszcz, Poland

Session I-R22: Deep neural networks

Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Room 1, Chair: Thiago Rios, Bas van Stein

5:45PM BIBNet: An Efficient Super Resolution with Bottleneck-In-Bottleneck [#21134]

Simyung Chang, Keuntek Lee, Shobhit Jain and Cheul-hee Hahm

Samsung Electronics, Korea (South)

6:05PM FaDec: A Fast Decision-based Attack for Adversarial Machine Learning [#21389]

Faiq Khalid, Hassan Ali, Muhammad Abdullah Hanif, Semeen Rehman, Rehan Ahmed and Muhammad Shafique

TU Wien, Austria; National University of Sciences and Technology (NUST), Pakistan

6:25PM A Deep Transfer Learning Approach for Fake News Detection [#21846]

Tanik Saikh, Haripriya Bindu, Asif Ekbal and Pushpak Bhattacharyya

Indian Institute of Technology Patna, India; Indian Institute of Information Technology Senapati, India

6:45PM Machine Vision for Construction Equipment by Transfer Learning with Scale-Models [#21108]

Carl Borngrund, Ulf Bodin and Fredrik Sandin

Embedded Intelligent Systems Lab (EISLAB), Lulea University of Technology, Sweden

7:05PM Learning to Search Efficient DenseNet with Layer-wise Pruning [#21063]

Xuanyang Zhang, Hao Liu, Zhanxing Zhu and Zenglin Xu

University of Electronic Science and Technology of China, China; University of California, Berkeley, United States; Peking university, China; Harbin Institute of Technology,Shenzhen, China

7:25PM Feature Visualization for 3D Point Cloud Autoencoders [#21518]

Thiago Rios, Bas van Stein, Stefan Menzel, Thomas Baeck, Bernhard Sendhoff and Patricia Wollstadt

Honda Research Institute Europe, Germany; Leiden Institute of Advanced Computer Science, Netherlands

Special Session I-SS9A: Deep Neural Audio Processing

Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Room 2, Chair: Emanuele Principi

5:45PM Loss Functions for Deep Monaural Speech Enhancement [#21276]

Jan Freiwald, Lea Schoenherr, Christopher Schymura, Steffen Zeiler and Dorothea Kolossa

Ruhr University Bochum, Germany

6:05PM Reinforcement Learning based Neural Architecture Search for Audio Tagging [#20711]

Haiyang Liu and Cheng Zhang

Waseda University, Graduate School of Information, Production and Systems, Japan; Southeast University, School of Instrument Science and Engineering, China

6:25PM **Sound Event Detection with Depthwise Separable and Dilated Convolutions [#21130]**

Konstantinos Drossos, Stylianos Ioannis Mimilakis, Shayan Gharib, Yanxiong Li and Tuomas Virtanen

Audio Research Group, Tampere University, Finland; Semantic Music Technologies Group, Fraunhofer-IDMT, Germany; School of Electronic and Information Engineering, South China University of Technology, China

6:45PM **Who Cried When: Infant Cry Diarization with Dilated Fully-Convolutional Neural Networks [#21284]**

Marco Severini, Emanuele Principi, Samuele Cornell, Leonardo Gabrielli and Stefano Squartini

Universita' Politecnica delle Marche, Italy

7:05PM **Using a Neural Network Codec Approximation Loss to Improve Source Separation Performance in Limited Capacity Networks [#21406]**

Ishwarya Ananthabhotla, Sebastian Ewert and Joseph Paradiso

MIT Media Lab, United States; Spotify, Germany

7:25PM **A Novel Adversarial Training Scheme for Deep Neural Network based Speech Enhancement [#21201]**

Samuele Cornell, Emanuele Principi and Stefano Squartini

Universita Politecnica delle Marche, Italy

Special Session I-SS45: Neural Architecture Search and its Applications

Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Room 3, Chair: Min Jiang

5:45PM **Neural Architecture Search for Time Series Classification [#20587]**

Hojjat Rakhshani, Hassan Ismail Fawaz, Lhassane Idoumghar, Germain Forestier, Julien Lepagnot, Jonathan Weber, Mathieu Brevilliers and Pierre-Alain Muller

Universite de Haute-Alsace, IRIMAS UR 7499, F-68100 Mulhouse, France

6:05PM **Geometry Sampling for 3D Face Generation via DCGAN [#20440]**

Guoliang Luo, Xin Zhao, Yang Tong, Qiang Chen, Zhiliang Zhu, Haopeng Lei and Juncong Lin

East China Jiaotong University and Jiangxi Booway New Technology Co. Ltd, China; East China Jiaotong University, China; Jiangxi Normal University, China; Xiamen University, China

6:25PM **Evolving Deep Convolutional Neural Networks for Hyperspectral Image Denoising [#20540]**

Yuqiao Liu, Yanan Sun, Bing Xue and Mengjie Zhang

Sichuan University, China; Victoria University of Wellington, New Zealand

6:45PM **FPA-DNN: A Forward Propagation Acceleration based Deep Neural Network for Ship Detection [#21181]**

Feng Wang, Fanshu Liao and Huiqing Zhu

School of Computer Science, Wuhan University, China

7:05PM **Bas-reliefs Modelling Based on Learning Deformable 3D Models [#21257]**

Siyuan Zhu, Cheng Shang, Jingjing Fan, Xin Wang and Meili Wang

Northwest A & F University, China

7:25PM **A Novel Self-Organizing Emotional CMAC Network for Robotic Control [#21780]**

Juncheng Zhang, Quanfeng Li, Xiang Chang, Chih-Min Lin, Longzhi Yang, Tuan Tu Huynh, Fei Chao, Ling Zheng, Changle Zhou and Changjing Shang

Xiamen University, China; Aberystwyth University, United Kingdom; Yuan Ze University, Taiwan; Northumbria University, United Kingdom

Special Session I-SS19: Concept Drift, Domain Adaptation & Learning in Dynamic Environments
Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Room 4, Chair: Giacomo Boracchi

5:45PM **Discriminative Joint Probability Maximum Mean Discrepancy (DJP-MMD) for Domain Adaptation [#20299]**
Wen Zhang and Dongrui Wu
Huazhong University of Science & Technology, China

6:05PM **Randomizing the Self-Adjusting Memory for Enhanced Handling of Concept Drift [#20145]**
Viktor Losing, Barbara Hammer, Heiko Wersing and Albert Bifet
Honda Research Institute Europe, Germany; Bielefeld University, Germany; Telecom ParisTech, France

6:25PM **Forget Me Not: Reducing Catastrophic Forgetting for Domain Adaptation in Reading Comprehension [#20713]**
Ying Xu, Xu Zhong, Antonio Jose Jimeno Yepes and Jey Han Lau
IBM Research Australia, Australia; University of Melbourne, Australia

6:45PM **Data-efficient Online Classification with Siamese Networks and Active Learning [#21139]**
Kleanthis Malialis, Christos G. Panayiotou and Marios M. Polycarpou
University of Cyprus, Cyprus

7:05PM **Continual Learning with Gated Incremental Memories for Sequential Data Processing [#20842]**
Andrea Cossu, Antonio Carta and Davide Bacciu
University of Pisa, Italy

7:25PM **A Hybrid 3DVar-EnKF Data Assimilation Approach Based on Multilayer Perceptron [#20058]**
Lilan Huang, Hongze Leng, Junqiang Song, Juan Zhao, Rui Chen and Dongzi Wang
College of Meteorology and Oceanography, College of Computer, National University of Defense Technology, China; College of Meteorology and Oceanography, National University of Defense Technology, China; College of Computer, National University of Defense Technology, China

Special Session I-SC10: Sensors, Robotics and Artificial Intelligence: From Theory to Applications
Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Room 5, Chair: Dhiya Al-Jumeily

5:45PM **Classifying Imbalanced Multi-modal Sensor Data for Human Activity Recognition in a Smart Home using Deep Learning [#20929]**
Ali A. Alani, Georgina Cosma and Aboozar Taherkhani
University of Diyala, Iraq; Loughborough University, United Kingdom; De Montfort University, United Kingdom

6:05PM **Students Performance Prediction in Online Courses Using Machine Learning Algorithms [#21071]**
Raghad Alshabandar, Abir Hussain, Robert Keight and Wasiq Khan
LJMU, Great Britain; LMU, Great Britain; ;JMU, Great Britain

6:25PM **Novel Approach to Predict Ground-Level Ozone Concentration Using S-estimation and MM-Estimimation [#21382]**
Ahmad zia ul-saufie Mohamad Japeri, Dhiya Al-Jumeily, Abir Hussain, Muhamad Muqhlisah, Jamila Mustafina, Fawaz Ghali and Thar Baker
Universiti Teknologi Mara, Malaysia; Liverpool John Moores University, United Kingdom; Kazan Federal University, Russian Federation

6:45PM **Virtual Experiments on ArUco and AprilTag Systems Comparison for Fiducial Marker Rotation Resistance under Noisy Sensory Data [#21405]**

Aufar Zakiev, Tatyana Tsoy, Ksenia Shabalina, Evgeni Magid and Subir Kumar Saha

Kazan Federal University, Russia; Indian Institute of Technology Delhi, India

7:05PM **Unsupervised Features Extracted using Winner-Take-All Mechanism Lead to Robust Image Classification [#21795]**

Devdhar Patel and Robert Kozma

University of Massachusetts Amherst, United States; University of Massachusetts Amherst & University of Memphis, United States

7:25PM **A Deep Model for Joint Object Detection and Semantic Segmentation in Traffic Scenes [#20619]**

Jizhi Peng, Zhixiong Nan, Linhai Xu, Jingmin Xin and Nanning Zheng

Institute of Artificial Intelligence and Robotics, Xi'an Jiaotong University, China

Session I-R23: Reinforcement learning and adaptive dynamic programming 2

Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Room 6, Chair: Haibo He, Murad Abu-Khalaf

5:45PM **Adaptive Mechanism Design: Learning to Promote Cooperation [#20780]**

Tobias Baumann, Thore Graepel and John Shawe-Taylor

University College London, United Kingdom; DeepMind, United Kingdom

6:05PM **Latent Context Based Soft Actor-Critic [#20277]**

Yuan Pu, Shaochen Wang, Xin Yao and Bin Li

University of Science and Technology of China, China

6:25PM **Event-triggered Multi-agent Optimal Regulation Using Adaptive Dynamic Programming [#21544]**

Xiangnan Zhong and Haibo He

Florida Atlantic University, United States; University of Rhode Island, United States

6:45PM **Discrete-Time Lyapunov based Kinematic Control of Robot Manipulator using Actor-Critic Framework [#21860]**

Ankur Kamboj, Ravi Prakash, Jayant Kumar Mohanta and Laxmidhar Behera

Indian Institute of Technology, Kanpur, India

7:05PM **MARLeME: A Multi-Agent Reinforcement Learning Model Extraction Library [#21494]**

Dmitry Kazhdan, Zohreh Shams and Pietro Lio

The University of Cambridge, United Kingdom

7:25PM **Improved Policy Extraction via Online Q-Value Distillation [#20970]**

Aman Jhunjhunwala, Jaeyoung Lee, Sean Sedwards, Vahdat Abdelzad and Krzysztof Czarnecki

University of Waterloo, Canada

Session I-R24: Applications of deep networks

Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Room 7, Chair: Ishai Rosenberg

5:45PM **Enhancing Question Answering over Knowledge Base Using Dynamical Relation Reasoning [#20066]**

Liao Cheng, Ziheng Chen and Jiangtao Ren

Sun Yat-sen University, China

6:05PM **A Dual Transformer Model for Intelligent Decision Support for Maintenance of Wind Turbines [#21213]**
Joyjit Chatterjee and Nina Dethlefs
University of Hull, United Kingdom

6:25PM **Generating End-to-End Adversarial Examples for Malware Classifiers Using Explainability [#20905]**
Ishai Rosenberg, Shai Meir, Jonathan Berrebi, Ilay Gordon, Guillaume Sicard and Eli David
Deep Instinct Ltd, Israel

6:45PM **TransKP: Transformer based Key-Phrase Extraction [#21249]**
Mukund Rungta, Rishabh Kumar, Mehak Dhaliwal, Hemant Tiwari and Vanraj Vala
Samsung R&D Institute, Bangalore, India

7:05PM **CDNet++: Improved Change Detection with Deep Neural Network Feature Correlation [#21369]**
Ram Prabhakar Kathirvel, Akshaya Ramaswamy, Suvaansh Bhambri, Jayavardhana Gubbi, Venkatesh Babu Radhakrishnan and Balamuralidhar Purushothaman
Indian Insitute of Science, India; TCS, India; Indian Institute of Science, India

7:25PM **Automatic Lyrics Transcription using Dilated Convolutional Neural Networks with Self-Attention [#21551]**
Emir Demirel, Ahlback Sven and Dixon Simon
Queen Mary University of London, United Kingdom; Doremir Music Research AB, Sweden

Plenary Poster Session I-P15: Supervised Learning
Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Poster Room 1, Chair: Eyad Elyan

P2901 **Proximal Stochastic AUC Maximization [#20146]**
Majdi Khalid, Hamidreza Chitsaz and Indrakshi Ray
Umm-Alqura University, Saudi Arabia; Colorado State University, United States

P2902 **Sky / Ground Segmentation Using Different Approaches [#20281]**
Arlete Teresinha Beuren, Alceu de Souza Britto Jr and Jacques Facon
Federal University of Technology, Brazil; Catholic University, Brazil; Federal University, Brazil

P2903 **Multi-Label Learning with Local Similarity of Samples [#20787]**
Wenfang Zhu, Weiwei Li and Xiuyi Jia
Nanjing University of Science and Technology, China; Nanjing University of Aeronautics and Astronautics, China

P2904 **Dominant Channel Fusion Architectures - An Intelligent Late Fusion Approach [#20858]**
Peter Bellmann, Patrick Thiam and Friedhelm Schwenker
Ulm University, Germany

P2905 **Deep High-order Asymmetric Supervised Hashing for Image Retrieval [#21068]**
Yongchao Yang, Jianxin Zhang, Qian Wang and Bin Liu
Dalian University, China; Dalian Minzu University, China; Dalian University of Technology, China

P2906 **Deep Learning and Genome-Wide Association Studies for the Classification of Type 2 Diabetes [#21126]**
Basma Abdulaimma, Paul Fergus, Carl Chalmers and Casimiro Curbelo Montanez
Liverpool John Moores University, United Kingdom

P2907 Facing Big Data by an Agent-Based Multimodal Evolutionary Approach to Classification [#21600]

Mauro Giampieri, Luca Baldini, Enrico De Santis and Antonello Rizzi

University of Rome "La Sapienza", Department of Information Engineering, Electronics and Telecommunications, Italy

P2908 Generalized Local Aggregation for Large Scale Gaussian Process Regression [#21066]

Yinghua Gao, Naiqi Li, Ning Ding, Yiming Li, Tao Dai and Shu-Tao Xia

Tsinghua University, China

P2909 Mitigating Outlier Effect in Online Regression: An Efficient Usage of Error Correntropy Criterion [#21582]

Sajjad Bahrami and Ertem Tuncel

University of California, Riverside, United States

P2910 Dual Semantic Relationship Attention Network for Image-Text Matching [#20247]

Keyu Wen and Xiaodong Gu

Fudan University, China

P2911 A BERT-based Approach with Relation-aware Attention for Knowledge Base Question Answering [#20626]

Da Luo, Jindian Su and Shanshan Yu

South China University of Technology, China; Guangdong Pharmaceutical University, China

P2912 Shallow Vessel Segmentation Network for Automatic Retinal Vessel Segmentation [#21885]

Tariq Khan, Faizan Abdullah, Syed Naqvi, Muhammad Arsalan and Muhammad Khan

COMSATS University Islamabad, Pakistan; Dongguk University, Korea (South); Lancaster University, United Kingdom

P2913 About Approximation Completeness of Generalized Multilayer Perceptrons Consisting of Banach-like Perceptrons Based on Semi-Inner Products [#20799]

Thomas Villmann, Alexander Engelsberger, Jensun Ravichandran and Andrea Villmann

University of Applied Sciences Mittweida, Germany; Berufliches Schulzentrum Doebeln-Mittweida, Germany

P2914 High-Level Classification for Multi-Label Learning [#21730]

Vinicius Henrique Resende and Murillo Guimaraes Carneiro

Federal University of Uberlandia, Brazil

P2915 Minority Oversampling Using Sensitivity [#21880]

Jianjun Zhang, Ting Wang, Wing W. Y. Ng, Witold Pedrycz, Shuai Zhang and Chris D. Nugent

School of Computer Science and Engineering, South China University of Technology, China; Department of Electrical and Computer Engineering, University of Alberta, Canada; School of Computing, Ulster University, United Kingdom

P2916 Sensor Data for Human Activity Recognition: Feature Representation and Benchmarking [#21777]

Flavia Alves, Martin Gairing, Frans A. Oliehoek and Thanh-Toan Do

University of Liverpool, United Kingdom; Delft University of Technology, Netherlands

P2917 Data augmentation process to improve deep learning-based NER task in the automotive industry field [#20873]

Abdenacer Keraghel, Khalid Benabdeslem and Bruno Canitia

LIZEO IT, France; LIRIS, France; Lizeo IT, France

Plenary Poster Session I-P16:
Wednesday, July 22, 5:45PM-7:45PM, Room: IJCNN Poster Room 2, Chair: Mohammad Reza Rajati

P3101 Graph Neural Networks Boosted Personalized Tag Recommendation Algorithm [#20629]
Xuewen Chen, Yonghong Yu, Fengyixin Jiang, Li Zhang, Rong Gao and Haiyan Gao
Nanjing University of Posts and Telecommunications, China; Northumbria University, United Kingdom; Hubei University of Technology, China

P3102 A Rating Bias Formulation based on Fuzzy Set for Recommendation [#21918]
Mingming Li, Fuqing Zhu, Jiao Dai, Liangjun Zang, Yipeng Su, Jizhang Han and Songlin Hu
Institute of Information Engineering, Chinese Academy of Sciences, China

P3103 A Semantic Subgraphs Based Link Prediction Method for Heterogeneous Social Networks with Graph Attention Networks [#20220]
Zhu Kai and Cao Meng
Department of Computer Science and Technology Nanjing University, Nanjing, China, China

P3104 Discovery of contrast corridors from trajectory data in heterogeneous dynamic cellular networks [#21738]
Li Li, Sarah Erfani, Chien Chan and Christopher Leckie
The University of Melbourne, Australia

P3105 Knowledge Graph Generation with Deep Active Learning [#21200]
Abhishek Pradhan, Ketan Kumar Todi, Anbarasan Selvarasu and Atish Sanyal
Taiger Singapore Pte. Ltd, Singapore

P3106 VAE-BRIDGE: Variational Autoencoder Filter for Bayesian Ridge Imputation of Missing Data [#21586]
Ricardo Cardoso Pereira, Pedro Henriques Abreu and Pedro Pereira Rodrigues
University of Coimbra, Portugal; University of Porto, Portugal

P3107 An Ecology-based Index for Text Embedding and Classification [#20671]
Alessio Martino, Enrico De Santis and Antonello Rizzi
University of Rome "La Sapienza, Department of Information Engineering, Electronics and Telecommunications, Italy

P3108 Deep Transfer Collaborative Filtering with Geometric Structure Preservation for Cross-Domain Recommendation [#21225]
Yachen Kang, Sibo Gai, Feng Zhao, Donglin Wang and Ao Tang
Westlake University, China; WeCar(Shenzhen) Technology Co., Ltd. Shenzhen, China

P3109 Adaptive Transfer Learning for Heterogeneous One-Class Collaborative Filtering [#20050]
Xiancong Chen, Weike Pan and Zhong Ming
Shenzhen University, China

P3110 PAT: Preference-Aware Transfer Learning for Recommendation with Heterogeneous Feedback [#20137]
Feng Liang, Wei Dai, Yunfeng Huang, Weike Pan and Zhong Ming
Shenzhen University, China

P3111 TimeSAN: A Time-Modulated Self-Attentive Network for Next Point-of-Interest Recommendation [#20743]
Jiayuan He, Jianzhong Qi and Kotagiri Ramamohanarao
The University of Melbourne, Australia

P3112 Seismic Event Detection via Deep Multi-Task Learning [#21150]
Yang Yu, Lei Zhang, Jiakai Shen, Qingcai Wang and Guiquan Liu
University of Science and Technology of China, China; Anhui University, China; Nanjing University, China

P3113 Adaptive Weighted Broad Learning System for software defect prediction [#20189]

Kankan Lan, Kaixiang Yang, Zhiwen Yu, Guoqiang Han, Jane You and C. L. Philip Chen

School of Computer Science & Engineering, South China University of Technology, China; Department of Computing, The Hong Kong Polytechnic University, China

P3114 An Outlier Detection Algorithm based on KNN-kernel Density Estimation [#21179]

Abdul Wahid and Annavarapu Chandra Sekhara Rao

Indian Institute of Technology (Indian School of Mines) Dhanbad, Jharkhand, India

P3115 Joint Medical Ontology Representation Learning for Healthcare Predictions [#20389]

Ke Wang, Ning Chen and Ting Chen

Tsinghua University, China

P3116 DVKCM: Knowledge-guided Conversation Generation with Dynamic Vocabulary [#20564]

Xu Wang, Shuai Zhao, Bo Cheng, Jiale Han, Xiangsheng Wei, Yi Liang and Hao Yang

Beijing University of Posts and Telecommunications, China; 2012 Labs, Huawei Technologies CO., LTD, Beijing, China, China

P3117 Automatic Tag Recommendation for Painting Artworks Using Diachronic Descriptions [#20687]

Gianlucca Zuin, Adriano Veloso, Joao Candido Portinari and Nivio Ziviani

UFMG, Brazil; Projeto Portinari, Brazil

P3118 Deep Embedding for Relation Extraction on Insufficient Labelled Data [#20923]

Haojie Huang and Raymond Wong

University of New South Wales, Australia

P3119 TULSN: Siamese Network for Trajectory-user Linking [#21886]

Yong Yu, Haina Tang, Fei Wang, Lin Wu, Tangwen Qian, Tao Sun and Yongjun Xu

University of Chinese Academy of Sciences, China; Institute of Computing Technology, Chinese Academy of Sciences, China

P3120 P-DNN: An Effective Intrusion Detection Method based on Pruning Deep Neural Network [#20006]

Mingjian Lei, Xiaoyong Li, Binsi Cai, Yunfeng Li, Limengwei Liu and Wenping Kong

Beijing University of Posts and Telecommunications, China

P3121 Using Word2Vec Recommendation for Improved Purchase Prediction [#21584]

Ramazan Esmeli, Mohamed Bader-El-Den and Hassana Abdullahi

University of Portsmouth, United Kingdom

P3122 Improving Session-Based Recommendation Adopting Linear Regression-Based Re-ranking [#21597]

Ramazan Esmeli, Mohamed Bader-El-Den, Hassana Abdullahi and David Henderson

University of Portsmouth, United Kingdom

Session I-R25: Deep neural networks

Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Room 1, Chair: Byron Leite

8:00PM WW-Nets:Dual Neural Networks for Object Detection [#21503]

Mohammad Ebrahimpour, Ben Falandays, Samuel Spevack, Yang Ming-Hsuan and Noelle David

University of California, Merced, United States

8:20PM A Light-weight Deep Feature based Capsule Network [#21376]

Chandan Kumar Singh, Vivek Kumar Gangwar, Anima Majumder, Swagat Kumar, Prakash Chanderlal Ambwani and Rajesh Sinha

Tata Consultancy Services, India

8:40PM **RelationNet2: Deep Comparison Network for Few-Shot Learning [#21563]**

Xueting Zhang, Yuting Qiang, Flood Sung, Yongxin Yang and Timothy Hospedales

University of Edinburgh, United Kingdom; University of Nanjing, China; Inspir.ai, China

9:00PM **Airplane Detection in Optical Remote Sensing Video Using Spatial and Temporal Features [#20557]**

Bai Jing, Yu Wentao, Yuan Anran and Xiao Zhu

Xidian University, China; Hunan University, China

9:20PM **Recurrent Point Review Models [#20346]**

Kostadin Cvejoski, Ramses J. Sanchez, Bogdan Georgiev, Christian Bauckhage and Cesar Ojeda

Competence Center Machine Learning Rhine-Ruhr and Fraunhofer IAIS, 53757 Sankt Augustin, Germany, Germany; -IT, University of Bonn, Bonn, Germany, Germany; Fraunhofer Center for Machine Learning and Fraunhofer IAIS, 53757 Sankt Augustin, Germany, Germany; Berlin Center for Machine Learning and TU Berlin, 10587 Berlin, Germany, Germany

9:40PM **A Fast Fully Octave Convolutional Neural Network for Document Image Segmentation [#20906]**

Ricardo Batista Neves Junior, Luiz Felipe Vercosa, David Macedo, Byron Leite Dantas Bezerra and Cleber Zanchettin

Universidade de Pernambuco, Brazil; Universidade Federal de Pernambuco, Brazil

Special Session I-SS9B: Deep Neural Audio Processing

Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Room 2, Chair: Emanuele Principi

8:00PM **AM-MobileNet1D: A Portable Model for Speaker Recognition [#21237]**

Joao Antonio Chagas Nunes, David Macedo and Cleber Zanchettin

Universidade Federal de Pernambuco, Brazil

8:20PM **Robust Training of Vector Quantized Bottleneck Models [#21668]**

Adrian Lancucki, Jan Chorowski, Guillaume Sanchez, Ricard Marxer, Nanxin Chen, Hans Dolfing, Sameer Khurana, Tanel Alumae and Antoine Laurent

NVIDIA Corporation, Poland; University of Wroclaw, Poland; Universite de Toulon, LIS, France; Johns Hopkins University, United States; Independent researcher, United States; Massachusetts Institute of Technology, United States; Tallinn University of Technology, Estonia; Le Mans University, France

8:40PM **Two-Microphone End-to-End Speaker Joint Identification and Localization Via Convolutional Neural Networks [#21294]**

Daniele Salvati, Carlo Drioli and Gian Luca Foresti

University of Udine, Italy

9:00PM **A Comparative Study of Time and Frequency Domain Approaches to Deep Learning based Speech Enhancement [#21378]**

Soha A. Nossier, Julie Wall, Mansour Moniri, Cornelius Glackin and Nigel Cannings

University of East London, United Kingdom; Intelligent Voice Ltd, United Kingdom

9:20PM **Mapping and Masking Targets Comparison using Different Deep Learning based Speech Enhancement Architectures [#21397]**

Soha A. Nossier, Julie Wall, Mansour Moniri, Cornelius Glackin and Nigel Cannings

University of East London, United Kingdom; Intelligent Voice Ltd, United Kingdom

9:40PM **Hierarchical Component Attention Based Speaker Turn Embedding for Emotion Recognition [#21976]**

Shuo Liu, Jinlong Jiao, Ziping Zhao, Judith Dineley, Nicholas Cummins and Bjoern Schuller

Chair of Embedded Intelligence for Health Care and Wellbeing, University of Augsburg, Germany; College of Computer and Information Engineering, Tianjin Normal University, China; GLAM - Group on Language, Audio & Music Imperial College London, Germany

Special Session I-SS41: Neural Architecture Search and Deep Reinforcement Learning for Autonomous Driving

Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Room 3, Chair: Yaran Chen

8:00PM **Multi-Robot Cooperative Target Encirclement through Learning Distributed Transferable Policy [#20361]**

Tianle Zhang, Zhen Liu, Shiguang Wu, Zhiqiang Pu and Jianqiang Yi

Institute of Automation, Chinese Academy of Sciences, China

8:20PM **IEDQN: Information Exchange DQN with a Centralized Coordinator for Traffic Signal Control [#20767]**

Donghan Xie, Zhi Wang, Chunlin Chen and Daoyi Dong

Nanjing University, China; University of New South Wales, Australia

8:40PM **An Improved Minimax-Q Algorithm Based on Generalized Policy Iteration to Solve a Chaser-Invader Game [#20793]**

Minsong Liu, Yuanheng Zhu and Dongbin Zhao

Chinese Academy of Sciences, China

9:00PM **Multi-Agent Deep Reinforcement Learning with Counterfactual Reward for Cooperative Games [#21081]**

Kun Shao, Yuanheng Zhu, Zhentao Tang and Dongbin Zhao

Chinese Academy of Sciences, Institute of Automation, China

9:20PM **RailNet: An Information Aggregation Network for Rail Track Segmentation [#20643]**

Haoran Li, Qichao Zhang, Dongbin Zhao and Yaran Chen

Institute of Automation, Chinese Academy of Sciences, China

9:40PM **Shift-Invariant Convolutional Network Search [#20803]**

Nannan Li, Yaran Chen, Zixiang Ding and Dongbin Zhao

State Key Laboratory of Management and Control for Complex Systems,Institute of Automation, Chinese Academy of Sciences.School of artificial intelligence, University of Chinese Academy of Sciences., China

Special Session I-SS20: Artificial Intelligence and SEcurity (AISE)

Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Room 4, Chair: Marta Cimitile

8:00PM **How to keep an online learning chatbot from being corrupted [#20792]**

Yixuan Chai, Guohua Liu, Donghong Sun and Ziwei Jin

Donghua University, China; Tsinghua University, China; Ohio State University, United States

8:20PM **IoT Attack Detection with Deep Learning Analysis [#21080]**

Riccardo Pecori, Amin Tayebi, Armando Vannucci and Luca Veltri

University of Sannio, Italy; University of Parma, Italy

8:40PM **A Privacy-Preserving Distributed Architecture for Deep-Learning-as-a-Service [#20912]**

Simone Disabato, Alessandro Falcetta, Alessio Mongelluzzo and Manuel Roveri

Politecnico di Milano, Italy

9:00PM **On the (Un)Reliability of Privacy Policies in Android Apps [#21625]**

Verderame Luca, Caputo Davide, Romdhana Andrea and Merlo Alessio

University of Genoa, Italy

9:20PM **OIAD: One-for-all Image Anomaly Detection with Disentanglement Learning [#20388]**

Shuo Wang, Chen Tianle, Chen Shanyu, Rudolph Carsten, Nepal Surya and Grobler Marthie

Monash University and CSIRO, Australia; Monash University, Australia; The University of Melbourne, Australia; CSIRO, Australia

9:40PM **Data-Aware Declarative Process Mining for Malware Detection [#21418]**

Pasquale Ardimento, Lerina Aversano, Mario Luca Bernardi and Marta Cimitile

University of Bari Aldo Moro, Italy; University of Sannio, Italy; Unitelma Sapienza University, Italy

Special Session I-SS4-28: AI Technologies in IoT, CI & Software Engineering

Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Room 5, Chair: Prashant Gupta, Mario Luca Bernardi

8:00PM **Non-Intrusive Appliance Load Monitoring in an Intelligent Device at the Edge layer [#21869]**

Jose Alonso Aguirre-Nunez, Juan Pablo Serrano-Rubio and Rafael Herrera-Guzman

Tecnologico Nacional de Mexico/ITS de Irapuato, Mexico; Center for Research in Mathematics (CIMAT), Mexico

8:20PM **Deep Learning Towards Intelligent Vehicle Fault Diagnosis [#20959]**

Mohammed Al-Zeyadi, Javier Andreu-Perez, Hani Hagras, Chris Royce, Darren Smith, Piotr Rzonsowski and Ali Malik

Essex.ac.uk, United Kingdom; Cognitran.com, United Kingdom; Cognitran.com, Poland; Tudublin.ie, Ireland

8:40PM **Intelligent Industrial IoT system for detection of short-circuit failure in windings of wind turbines [#21734]**

Marcos A. Araujo Ferreira Junior, Luis Fabricio de F. Souza, Francisco Hercules dos S. Silva, Elene Firmeza Ohata, Jefferson Silva Almeida and Pedro Pedrosa Reboucas Filho

IFCE, Brazil; UFC, Brazil

9:00PM **Hierarchical Embedding for Code Search in Software Q&A Sites [#20665]**

Ruitong Li, Gang Hu and Min Peng

National Engineering Research Center for Multimedia Software, School of Computer Science, Wuhan University, China

9:20PM **A Developer Recommendation Method Based on Code Quality [#21644]**

Matheus da Silva, Andre Cizotto and Emerson Paraiso

Pontificia Universidade Catolica do Parana, Brazil; Siemens Ltd, Brazil

9:40PM **A Topic Modeling Approach To Evaluate The Comments Consistency To Source Code [#21232]**

Martina Iammarino, Lerina Aversano, Mario Luca Bernardi and Marta Cimitile

Department of Engineering University of Sannio, Italy; Unitelma Sapienza University, Italy

Session I-R26: Semi-supervised learning
Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Room 6, Chair: Anne Canuto

8:00PM **Kernelized Constrained Gaussian Fields and Harmonic Functions for Semi-supervised Learning [#20509]**
Celso Sousa
University of Fortaleza, Brazil

8:20PM **An Optimized Modularity-Based High Level Classification Model [#20673]**
Tiago Colliri, Liu Weiguang and Liang Zhao
University of Sao Paulo, Brazil; Zhongyuan University of Technology, China

8:40PM **A Semi-supervised Based Framework for Data Stream Classification in Non-Stationary Environments [#21467]**
Arthur Gorgonio, Anne Canuto, Karliane Vale and Flavius Gorgonio
Federal University of Rio Grande do Norte, Brazil

9:00PM **Deep Neural-Gas Clustering for Instance Segmentation across Imaging Experiments [#21547]**
Philipp Gruening and Amir Madany Mamlouk
Institute for Neuro- and Bioinformatics, University of Luebeck, Germany

9:20PM **Pseudo-Labeling and Confirmation Bias in Deep Semi-Supervised Learning [#20260]**
Eric Arazo, Diego Ortego, Paul Albert, Noel E. O'Connor and Kevin McGuinness
Insight Centre for Data Analytics, Dublin City University (DCU), Ireland

9:40PM **Semi-supervised GANs for Fraud Detection [#20824]**
Charitos Charitou, Artur Garcez and Simo Dragicevic
City, University of London, United Kingdom; Playtech Plc, United Kingdom

Session I-R27:
Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Room 7, Chair: Dong Chen

8:00PM **Multi-Grained Selection and Fusion for Fine-Grained Image Representation [#21299]**
Jianrong Jiang and Hongxing Wang
Key Laboratory of Dependable Service Computing in Cyber Physical Society, Chongqing University, China

8:20PM **A Continuous Restricted Boltzmann Machine and Logistic Regression Framework for Circuit Classification [#21729]**
Leandro Maia Silva, Fabricio Vivas Andrade and Luiz Filipe Menezes Vieira
Universidade Federal de Minas Gerais, Brazil; Centro Federal de Educacao Tecnologica, Brazil

8:40PM **Modeling Pharmacological Effects with Multi-Relation Unsupervised Graph Embedding [#20612]**
Dehua Chen, Amir Jalilifard, Adriano Veloso and Nivio Ziviani
CS Dept. UFMG & Kunumi, Brazil; CS Dept. UFMG, Brazil

9:00PM **Unsupervised Deep Imputed Hashing for Partial Cross-modal Retrieval [#20071]**
Dong Chen, Miaomiao Cheng, Chen Min and Liping Jing
Beijing Key Lab of Traffic Data Analysis and Mining, Beijing Jiaotong University, 100089 Beijing, China, China

9:20PM **SECL: Separated Embedding and Correlation Learning for Demographic Prediction in Ubiquitous Sensor Scenario [#20352]**

Yiwen Jiang, Wei Tang, Neng Gao, Chenyang Tu, Jia Peng and Min Li

State Key Laboratory of Information Security, CAS; School of Cyber Security, University of Chinese Academy of Sciences, China; State Key Laboratory of Information Security, CAS;School of Cyber Security, University of Chinese Academy of Sciences, China; State Key Laboratory of Information Security, CAS, China

9:40PM **DHD-Net: A Novel Deep-Learning-based Dehazing Network [#20802]**

Liangru Xie, Hao Wang, Zhuowei Wang and Lianglun Cheng

School of Computers, Guangdong University of Technology, China; Department of Computer Science, Norwegian University of Science & Technology, Norway

Plenary Poster Session I-P17: Supervised Learning

Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Poster Room 1, Chair: Turgay Celik

P3301 **Machine Learning Based Seismic Region Classification [#21655]**

Samuel da Silva Oliveira, Anne Magaly de Paula Canuto, Bruno Motta de Carvalho and Marcio Eduardo Kreutz

Universidade Federal do Rio Grande do Norte, Brazil

P3302 **Optimal Clusters Generation for Maximizing Ensemble Classifier Performance [#21003]**

Jan Zohaib and Verma Brijesh

Central Queensland University, Australia

P3303 **Learning with Partial Multi-Outlooks [#21715]**

Jing Chen, Yi He and Vijay Raghavan

School of Computing and Informatics, University of Louisiana at Lafayette, United States

P3304 **One-Class Classification for Selecting Synthetic Datasets in Meta-Learning [#20611]**

Regina R. Parente and Ricardo B. C. Prudencio

Universidade Federal de Pernambuco, Brazil

P3305 **Nonlinear Logistic Regression Model Based On Simplex Basis Function [#20015]**

Xia Hong, Hong Wei and Junbin Gao

University of Reading, United Kingdom; University of Sydney, Australia

P3306 **Regularizing Pattern Recognition with Conditional Probability Estimates [#21944]**

Thomas Vacek

Thomson Reuters, United States

P3307 **Real-time anomaly intrusion detection for a clean water supply system, utilising machine learning with novel energy-based features [#21388]**

Andres Robles-Durazno, Naghmeh Moradpoor, James McWhinnie and Gordon Russell

Edinburgh Napier University, United Kingdom

P3308 **Adaptive Neuron-wise Discriminant Criterion and Adaptive Center Loss at Hidden Layer for Deep Convolutional Neural Network [#20427]**

Motoshi Abe, Junichi Miyao and Takio Kurita

Hiroshima University, Japan

P3309 **Classification of Cyberbullying Text in Arabic [#21178]**

Azzeddine Rachid Benaissa, Azza Harbaoui and Hajjami Henda Ben Ghezala

RIADI Laboratory, National School of Computer Sciences, La Manouba University, Tunisia

P3310 Convergence Rate Analysis of Viscosity Approximation based Gradient Algorithms [#21906]

Prayas Jain, Mridula Verma and Kaushal Shukla

IIT (BHU) Varanasi, India

P3311 Assessing Accident Risk using Ordinal Regression and Multinomial Logistic Regression Data Generation [#20256]

Gulsum Alicioglu, Bo Sun and Shen Shyang Ho

Rowan University, United States

P3312 Systematic study on dimensionality reduction in the gesture phase segmentation problem [#21718]

Victor Nicola, Renata Madeo and Sarajane Peres

University of Sao Paulo, Brazil; Regional Federal Court of the 3rd Region, Brazil

P3313 Seasonal Averaged One-Dependence Estimators: A Novel Algorithm to Address Seasonal Concept Drift in High-Dimensional Stream Classification [#21051]

Rakshitha Godahewa, Trevor Yann, Christoph Bergmeir and Francois Petitjean

Monash University, Australia; Seek Group, Australia

P3314 Item Response Theory for Evaluating Regression Algorithms [#20921]

Joao Moraes, Jessica Reinaldo, Telmo Silva Filho and Ricardo Prudencio

Universidade Federal de Pernambuco, Brazil; Universidade Federal da Paraiba, Brazil

P3315 Process Model Modularization by Subprocess Discovery [#20851]

Sergio Angelastro and Stefano Ferilli

University of Bari, Italy

P3316 Mu-suppression detection in motor imagery electroencephalographic (EEG) signals using the generalized extreme value distribution [#20898]

Antonio Quintero-Rincon, Carlos D'Giano and Hadj Batatia

FLENI, Argentina; University of Toulouse, France

Plenary Poster Session I-P18:

Wednesday, July 22, 8:00PM-10:00PM, Room: IJCNN Poster Room 2, Chair: Miltos Alamaniotis

P3501 Detection of Safety Helmet Wearing Based on Improved Faster R-CNN [#20221]

Songbo Chen, Wenbo Wang, Ye Ouyang, Huiling Zhu, Tianyao Ji and Wenhu Tang

Zhejiang University, China; Qingyuan Power Supply Bureau, China; South China University of Technology, China

P3502 Intelligent Classification and Automatic Annotation of Violations based on Neural Network Language Model [#20180]

Yaoquan Yu, Yuefeng Guo, Zhiyuan Zhang, Mengshi Li, Tianyao Ji, Wenhu Tang and Qinghua Wu

Qingyuan Power Supply Bureau, China; South China University of Technology, China

P3503 Predicting Insulation Resistance of Enamelled Wire using Neural Network and Curve Fit Methods Under Thermal Aging [#20759]

Gulrukh Turabee, Georgina Cosma, Vincenzo Madonna, Paolo Giangrande, Muhammad Raza Khowja, Gaurang Vakil, Chris Gerada and Michael Galea

School of Science & Technology Nottingham Trent University, United Kingdom; School of Science Loughborough University, United Kingdom; PEMC Research Group The University of Nottingham, United Kingdom; Key Laboratory of MEA Technology The University of Nottingham Ningbo, China, China

P3504 A Neural Network Toolbox for Electricity Consumption Forecasting [#20372]

Jaroslaw Protasiewicz

National Information Processing Institute, Poland

P3505 Echo State Network Performance in Electrical and Industrial Applications [#21979]

Muhammad Mansoor, Francesco Grimaccia and Marco Mussetta

Politecnico di Milano, Italy

P3506 Multi-Label Auto-Encoder based Electrical Load Disaggregation [#21415]

Spoorthy Paresh, Naveen Kumar Thokala, Angshul Majumdar and M Girish Chandra

Tata Consultancy Services Limited., India; Tata Consultancy Services Limited, India

P3507 Recurrent Neural Network-based Base Transceiver Station Power Supply System Failure Prediction [#21329]

Yonas Tefera, Tewodros Kibatu, Bethelhem Shawel and Dereje Woldegebreal

Addis Ababa University, Ethiopia; Ethio Telecom, Ethiopia

P3508 Probabilistic Prediction of Solar Generation Based on Stacked Autoencoder and Lower Upper Bound Estimation Method [#20101]

Cheng Pan and Jie Tan

Institute of Automation, Chinese Academy of Sciences;University of Chinese Academy of Sciences, China; Institute of Automation, Chinese Academy of Sciences, China

P3509 An Online Model for Scheduling Electric Vehicle Charging at Park-and-Ride Facilities for Flattening Solar Duck Curves [#20535]

Raka Jovanovic, Sertac Bayha and Islam Safak Bayram

Hamad bin Khalifa University, Qatar; University of Strathclyde, United Kingdom

P3510 Prediction of Customer Status in Corporate Banking Using Neural Networks [#20149]

Stanislaw Osowski and Lukasz Sierenski

Warsaw University of Technology, Military University of Technology, Poland; Warsaw University of Technology, Poland

P3511 Effective Automated Feature Derivation via Reinforcement Learning for Microcredit Default Prediction [#20444]

Mengnan Song, Jiasong Wang, Tongtong Zhang, Guoguang Zhang, Ruijun Zhang and Sui Su

360 Financial, China

P3512 LSTM-Based Quantitative Trading Using Dynamic K-Top and Kelly Criterion [#21104]

Binjing Li, Keli Xie, Siyuan Lu, Jun Lin and Zhongfeng Wang

School of Electronic Science and Engineering, Nanjing University, Nanjing, China

P3513 Multiple Stock Time Series Jointly Forecasting with Multi-Task Learning [#20194]

Tao Ma and Ying Tan

Peking University, China

P3514 Stock Price Manipulation Detection based on Autoencoder Learning of Stock Trades Affinity [#21534]

Baqar Rizvi, Ammar Belatreche, Ahmed Bouridane and Kamlesh Mistry

Dept. of Computer & Information Sciences, Northumbria University, Newcastle, United Kingdom

P3515 Deep Probabilistic Modelling of Price Movements for High-Frequency Trading [#20300]

Ye-Sheen Lim and Denise Gorse

University College London, United Kingdom

P3516 Beating the Stock Market with a Deep Reinforcement Learning Day Trading System [#21857]

Leonardo Conegundes and Adriano Machado

Universidade Federal de Minas Gerais, Brazil

P3517 Personalized Digital Customer Services for Consumer Banking Call Centre using Neural Networks [#20985]

Xuejie Zhang, Samarth Agarwal, Ruth Hui Yi Choy, Kay Jan Wong, Lecia Kai Heng Lim, Ying Yang Lee and John Jianan Lu

DBS Bank, Singapore

P3518 Bias-regularised Neural-Network Metamodelling of Insurance Portfolio Risk [#20697]

Wei Luo, Akib Mashrur, Antonio Robles-Kelly and Gang Li

Deakin University, Australia

P3519 Isolation Forest Based Multi-Source Unsupervised Transfer Learning for Missing GDP Prediction [#21929]

Sandeep Kumar, Amit K. Shukla and Pranab K. Muhuri

South Asian University, India

THURSDAY, JULY 23

Session I-R28: Fuzzy and Large Scale neural networks
Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Room 1, Chair: Aaron Young, Adam Foshie

3:30PM **Fuzzy Graph Neural Network for Few-Shot Learning [#20737]**
Tong Wei, Junlin Hou and Rui Feng
Fudan University, China

3:50PM **An Asymmetric Neuro-Fuzzy Model for the Detection of Meat Spoilage [#20399]**
Vassilis Kodogiannis and Abeer Alshejari
University of Westminster, United Kingdom; Princess Nourah bint Abdulrahman University, Saudi Arabia

4:10PM **An Improved Online Learning Algorithm for General Fuzzy Min-Max Neural Network [#20125]**
Thanh Tung Khuat, Fang Chen and Bogdan Gabrys
University of Technology Sydney, Australia

4:30PM **GEMM-eMFIS (FRI/E): A Novel General Episodic Memory Mechanism for Fuzzy Neural Networks [#20839]**
Sheng Wei Pang, Chai Quek and Dilip K. Prasad
Nanyang Technological University, Singapore; UiT The Arctic University of Norway, Norway

4:50PM **PSO-PS:Parameter Synchronization with Particle Swarm Optimization for Distributed Training of Deep Neural Networks [#20716]**
Qing Ye, Yuxuan Han, Yanan Sun and Jiancheng Lv
Sichuan University, China

5:10PM **Scaled-up Neuromorphic Array Communications Controller (SNACC) for Large-scale Neural Networks [#20433]**
Aaron Young, Adam Foshie, Mark Dean, James Plank, Garrett Rose, John Mitchell and Catherine Schuman
University of Tennessee, United States; Oak Ridge National Laboratory, United States

Special Session I-SS10: Recurrent Neural Information Processing: Models and Applications
Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Room 2, Chair: Zheng Yan

3:30PM **Creating Corpora for Seq2Seq Tone Rephrasing Using Social Media Posts [#20148]**
Paulo Cavalin, Marisa Vasconcelos, Marcelo Grave and Claudio Pinhanez
IBM Research, Brazil

3:50PM **An Input Residual Connection for Simplifying Gated Recurrent Neural Networks [#20276]**
Nicholas I.H. Kuo, Mehrtash Harandi, Nicolas Fourrier, Christian Walder, Gabriela Ferraro and Hanna Suominen
The Australian National University, Australia; Monash University, Australia; Leonard de Vinci Pole Universitaire, France; Commonwealth Scientific and Industrial Research Organization, Australia

4:10PM **Multiple-source Domain Adaptation in Rule-based Neural Network [#20368]**
Hua Zuo, Jie Lu and Guangquan Zhang
University of Technology Sydney, Australia

4:30PM **Multi-Source Domain Adaptation with Distribution Fusion and Relationship Extraction [#20542]**
Keqiuyin Li, Jie Lu, Hua Zuo and Guangquan Zhang
University of Technology Sydney, Australia

4:50PM **Prediction of Weather Radar Images via a Deep LSTM for Nowcasting [#20553]**
Yao Guang, Liu Zongxuan, Guo Xufeng, Wei Chaoshi, Li Xinfeng and Chen Zhihao
Em-Data, China; ECATMB, China

5:10PM **Multi-step LSTM Prediction Model for Visibility Prediction [#20979]**
Yunlong Meng, Fengliang Qi, Heng Zuo, Bo Chen, Xian Yuan and Yao Xiao
Em-Data, China; ECATMB, China

Special Session I-SS46: Intelligent Vehicle and Transportation Systems
Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Room 3, Chair: Alberto Ferreira De Souza

3:30PM **Mission-Aware Spatio-Temporal Deep Learning Model for UAS Instantaneous Density Prediction [#20598]**
Ziyi Zhao, Zhao Jin, Wentian Bai, Wentan Bai, Carlos Caicedo, Mustafa Gursoy and Qinru Qiu
Syracuse University, United States

3:50PM **Visual-to-Semantic Hashing for Zero Shot Learning [#20989]**
Xin Li, Xiaoyue Wen, Bo Jin, Xiangfeng Wang, Junjie Wang and Jinghui Cai
East China Normal University, China; Engineering Research Center of Intelligent Transport of Zhejiang Province Enjoyor Co., Ltd, China

4:10PM **Adaptive Spatio-Temporal Graph Convolutional Neural Network for Remaining Useful Life Estimation [#21125]**
Zhang Yuxuan, Li Yuanxiang, Wei Xian and Jia Lei
Shanghai Jiao Tong University, China; Chinese Academy of Sciences, China

4:30PM **Image-Based Real-Time Path Generation Using Deep Neural Networks [#21843]**
Gabriel Moraes, Anderson Mozart, Pedro Azevedo, Marcos Piumbini, Vinicius B. Cardoso, Thiago Oliveira-Santos, Alberto F. De Souza and Claudine Badue
Universidade Federal do Espirito Santo, Brazil

4:50PM **A Large-Scale Mapping Method Based on Deep Neural Networks Applied to Self-Driving Car Localization [#21863]**
Vinicius B. Cardoso, Andre Seidel Oliveira, Avelino Forechi, Pedro Azevedo, Filipe Mutz, Thiago Oliveira-Santos, Claudine Badue and Alberto F. De Souza
Universidade Federal do Espirito Santo, Brazil; Instituto Federal do Espirito Santo, Brazil

5:10PM **Asymmetric Loss Functions for Deep Learning Early Predictions of Remaining Useful Life in Aerospace Gas Turbine Engines [#21629]**
Divish Rengasamy, Benjamin Rothwell and Grazziela Figueredo
University of Nottingham, United Kingdom

Special Session I-SS13A: Biologically Inspired Cognitive Robotics
Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Room 4, Chair: Wei Hong Chin

3:30PM **A Calculation Method of the Similarity Between Trained Model and New Sample by using Gaussian Distribution [#21024]**
Matsufuji Akihiro, Sekino Haruka, Sato-Shimokawara Eri and Yamaguchi Toru
Tokyo Metropolitan University, Japan

3:50PM **Combining Reinforcement Learning and Rule-based Method to Manipulate Objects in Clutter [#20327]**

Yiwen Chen, Zhaojie Ju and Chenguang Yang

School of Automation Science and Engineering,South China University of Technology, China; School of Computing,University of Portsmouth, United Kingdom; Bristol Robotics Laboratory,University of the West of England, United Kingdom

4:10PM **Robotic grasp detection using effective graspable feature selection and precise classification [#20329]**

Jiahao Zhang, Miao Li and Chenguang Yang

South China University of Technology, China; Wuhan University, China; University of the West of England, China

4:30PM **Psychological Effects of Compliment Expressions by Communication Robots on Humans [#21203]**

Motoki Iwashita and Daisuke Katagami

Tokyo Polytechnic University, Japan, Japan

4:50PM **Cognitive Modeling Based on Perceiving-Acting Cycle in Robotic Avatar System for Disabled Patients [#21639]**

Takenori Obo, Ryoya Hase, Kohei Kobayashi, Kotaro Sueta, Takeru Nakano and Duk Shin

Tokyo Polytechnic University, Japan

5:10PM **A-mode Ultrasound Driven Sensor Fusion for Hand Gesture Recognition [#21709]**

Peter Boyd and Honghai Liu

University of Portsmouth, United Kingdom

Special Session I-SS15: Intelligent Control: Methods and Applications

Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Room 5, Chair: Callum Wilson

3:30PM **A Novel Update Mechanism for Q-Networks Based On Extreme Learning Machines [#21370]**

Callum Wilson, Annalisa Riccardi and Edmondo Minisci

University of Strathclyde, United Kingdom

3:50PM **Online Optimal Adaptive Control of a Class of Uncertain Nonlinear Discrete-time Systems [#21816]**

Rohollah Moghadam, Pappa Natarajan, Krishnan Raghavan and Sarangapani Jagannathan

Missouri University of Science and Technology, United States; Argonne National Laboratory, United States

4:10PM **A Bayesian perspective on classical control [#21175]**

Manuel Baltieri

Laboratory for Neural Computation and Adaptation, RIKEN Centre for Brain Science, Japan

4:30PM **Neural H2 Control Using Reinforcement Learning for Unknown Nonlinear Systems [#21468]**

Perrusquia Adolfo and Yu Wen

CINVESTAV-IPN, Mexico

4:50PM **Towards Intelligent Control via Genetic Programming [#21270]**

Francesco Marchetti, Edmondo Minisci and Annalisa Riccardi

University of Strathclyde, United Kingdom

5:10PM **Optimizing Filter-bank Canonical Correlation Analysis for fast response SSVEP Brain-Computer Interface (BCI) [#20467]**

Aung Aung Phyo Wai, Heng Guo, Ying Chi, Lei Zhang, Xian-Sheng Hua and Cuntai Guan

Nanyang Technological University, Singapore; Alibaba Group Holding Ltd, China

Session I-R29: Deep learning I
Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Room 6, Chair: Mufti Mahmud

3:30PM **Capsule Based Neural Network Architecture to perform completeness check for Patent Eligibility Process [#21056]**
Saurabh Srivastava, Puneet Agarwal, Gautam Shroff, Lovekesh Vig and Vidya Vikas
TCS Research, India; Tata Consultancy Services, India

3:50PM **Towards Quantifying Intrinsic Generalization of Deep ReLU Networks [#20735]**
Shaeke Salman, Canlin Zhang, Xiuwen Liu and Washington Mio
Florida State University, United States

4:10PM **KutralNet: A Portable Deep Learning Model for Fire Recognition [#20875]**
Angel Ayala, Bruno Fernandes, Francisco Cruz, David Macedo, Adriano L. I. Oliveira and Cleber Zanchettin
Universidade de Pernambuco, Brazil; Deakin University, Australia; Universidade Federal de Pernambuco, Brazil

4:30PM **Improving Feature's Capability of Carrying Category-specific Information for Adversarial Domain Adaptation [#20026]**
Yundong Li, Chen Lin, Wei Hu and Han Dong
North China University of Technology, China

4:50PM **Att-DARTS: Differentiable Neural Architecture Search for Attention [#21042]**
Kohei Nakai, Takashi Matsubara and Kuniaki Uehara
Graduate School of System Informatics, Kobe University, Japan; Graduate School of Engineering Science, Osaka University, Japan; Faculty of Business Administration, Osaka Gakuin University, Japan

5:10PM **Zero-Shot Object Detection with Textual Descriptions Using Convolutional Neural Networks [#20024]**
Licheng Zhang, Xianzhi Wang, Lina Yao and Feng Zheng
University of Technology Sydney, Australia; University of New South Wales, Australia; Southern University of Science and Technology, China

Competition I-COMP: IJCNN Competitions
Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Room 7

Plenary Poster Session I-P19: Unsupervised learning and clustering (including PCA and ICA)
Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Poster Room 1, Chair: Jamil Al Shaqsi

P3701 **Plant Leaf Recognition Using Texture Features and Semi-Supervised Spherical K-means Clustering [#20010]**
Shadi Alamoudi, Xia Hong and Hong Wei
University of Reading, United Kingdom

P3702 **OvNMTF Algorithm: an Overlapping Non-Negative Matrix Tri-Factorization for Coclustering [#21184]**
Waldyr Lourenco de Freitas Junior, Sarajane Marques Peres, Valdinei Freire and Lucas Fernandes Brunialti
University of Sao Paulo, Brazil; Cobli, Brazil

P3703 **Not All Synonyms Are Created Equal: Incorporating Similarity of Synonyms to Enhance Word Embeddings [#20030]**
Peiyang Liu, Wei Ye, Xiangyu Xi, Tong Wang, Jinglei Zhang and Shikun Zhang
Peking University, China

P3704 **Federated learning with hierarchical clustering of local updates to improve training on non-IID data [#21121]**
Christopher Briggs, Zhong Fan and Peter Andras
Keele University, United Kingdom

P3705 **The Variational Infomax AutoEncoder [#21094]**
Vincenzo Crescimanna and Bruce Graham
University of Stirling, United Kingdom

P3706 **Unsupervised Clustering through Gaussian Mixture Variational AutoEncoder with Non-Reparameterized Variational Inference and Std Annealing [#20139]**
Zhihan Li, Youjian Zhao, Haowen Xu, Wenxiao Chen, Shangqing Xu, Yilin Li and Dan Pei
Tsinghua University, China

P3707 **Improved Hierarchical Clustering with Non-locally Enhanced Features for Unsupervised Person Re-identification [#20330]**
Wanyu Zhao, Bairong Li, Qinghua Gu and Yuesheng Zhu
Shenzhen Graduate School, Peking University, China

P3708 **Non-conjugate Posterior using Stochastic Gradient Ascent with Adaptive Stepsize [#20253]**
Kart-Leong Lim
Institute of Microelectronics, A*Star, Singapore

P3709 **Variational Clustering: Leveraging Variational Autoencoders for Image Clustering [#21426]**
Vignesh Prasad, Dipanjan Das and Brojeshwar Bhowmick
Technical University of Darmstadt, Germany; Embedded Systems and Robotics, TCS Research & Innovation, Kolkata, India

P3710 **Optimizing Recommendations for Clustering Algorithms Using Meta-Learning [#20336]**
Adam Jilling and Marco Alvarez
University of Rhode Island, United States

P3711 **Unsupervised Learning of Disentangled Location Embeddings [#20559]**
Kun Ouyang, Yuxuan Liang, Wenzhuo Yang, Ye Liu and David Rosenblum
School of Computing, National University of Singapore, Singapore; BiGO Technology, Singapore

P3712 **TopoBARTMAP: Biclustering ARTMAP With or Without Topological Methods in a Blood Cancer Case Study [#21947]**
Raghu Yelugam, Leonardo Enzo Brito da Silva and Donald C. Wunsch II
Missouri University of Science and Technology, United States

P3713 **Binarized Attributed Network Embedding via Neural Networks [#21367]**
Hangyu Xia, Neng Gao, Jia Peng, Jingjie Mo and Jiong Wang
Chinese Academy of Sciences, China

P3714 **BalNode2Vec: Balanced Random Walk based Versatile Feature Learning for Networks [#21774]**
Amirreza Salamat, Xiao Luo and Ali Jafari
Department of ECE IUPUI, United States

P3715 **Stochastic Curiosity Maximizing Exploration [#20635]**
Jen-Tzung Chien and Po-Chien Hsu
National Chiao Tung University, Taiwan

P3716 **Assistive System for Navigating Complex Realistic Simulated World Using Reinforcement Learning [#21004]**

Faruk Ahmed, Md Sultan Mahmud and Mohammed Yeasin

University of Memphis, United States

P3717 **Novel Use of Self-organizing Map for Q-matrix Calibration in Cognitive Diagnosis Assessment [#20705]**

Xi-Tian Chen, Zhengjia Dai and Ying Lin

Department of Psychology, Sun Yat-sen University, China

Plenary Poster Session I-P20:

Thursday, July 23, 3:30PM-5:30PM, Room: IJCNN Poster Room 2, Chair: Nalin Senthamil

P3901 **Reinforcement Mechanism Design for Electric Vehicle Demand Response in Microgrid Charging Stations [#20486]**

Luyang Hou, Shuai Ma, Jun Yan, Chun Wang and Jia Yuan Yu

Concordia University, Canada

P3902 **Automatic offensive language detection from Twitter data using machine learning and feature selection of metadata [#20143]**

Gabriel Araujo De Souza and Marjory Da Costa-Abreu

UFRN, Brazil; Sheffield Hallam University, United Kingdom

P3903 **A reputation-enhanced model for trust-based collaborative filtering recommender system [#20074]**

LinShan Shen, Shaobin Huang and Xiangke Mao

Harbin Engineering University, China

P3904 **A Hybrid Firefly Algorithm Based on Orthogonal Opposition [#20132]**

YingYing Ge, Jun Li and ChenYing Meng

College of Computer Science and Technology, Wuhan University of Science and Technology, China

P3905 **Expose Your Mask: Smart Ponzi Schemes Detection on Blockchain [#21182]**

Shuhui Fan, Shaojing Fu, Haoran Xu and Chengzhang Zhu

National University of Defense Technology, China; National University of Defense Technology; Sate Key Laboratory of Cryptology, China; Academy of Military Sciences, China

P3906 **Perceptron-Learning for Scalable and Transparent Dynamic Formation in Swarm-on-Swarm Shepherding [#21785]**

Tung Nguyen, Jing Liu, Hung Nguyen, Kathryn Kasmarik, Sreenatha Anavatti, Matthew Garratt and Hussein Abbass

The University of New South Wales - Canberra, Australia

P3907 **Enhancing the Detection of Criminal Organizations in Mexico using ML and NLP [#21871]**

Javier Osorio and Alejandro Beltran

University of Arizona, United States

P3908 **Using Autoencoders for Anomaly Detection in Hard Disk Drives [#21443]**

Francisco Pereira, Iago Chaves, Joao Gomes and Javam Machado

Federal University of Ceara, Brazil

P3909 **Adaptation of a wheel loader automatic bucket filling neural network using reinforcement learning [#20563]**

Siddharth Dadhich, Fredrik Sandin, Ulf Bodin, Ulf Andersson and Torbjorn Martinsson

Lulea University of Technology, 97187, Lulea, Sweden, Sweden; Volvo CE, Bolindervagen 5, 63185, Eskilstuna, Sweden, Sweden

P3910 **On the Evaluation of Prohibited Item Classification and Detection in Volumetric 3D Computed Tomography Baggage Security Screening Imagery [#21401]**

Qian Wang, Neelanjan Bhowmik and Toby P. Breckon

Durham University, United Kingdom

P3911 **Deep Learning for Cavitating Marine Propeller Noise Prediction at Design Stage [#20458]**

Luca Oneto, Francesca Cipollini, Leonardo Miglianti, Giorgio Tani, Stefano Gaggero, Andrea Coraddu and Michele Viviani

University of Genoa, Italy; Strathclyde University, United Kingdom

P3912 **GA-MSSR: Genetic Algorithm Maximizing Sharpe and Sterling ratio method for RoboTrading [#21079]**

Zezheng Zhang and Matloob Khushi

School of Computer Science, The University of Sydney, Australia

P3913 **A Hybrid Context-aware Framework to Detect Abnormal Human Daily Living Behavior [#21560]**

Roghayeh Mojarad, Ferhat Attal, Abdelghani Chibani and Yacine Amirat

Univ Paris Est Creteil, LISSI, F-94400 Vitry, France

P3914 **Survey on Automated End-to-End DataScience? [#20606]**

Djallel Bouneffouf, Charu Aggarwal, Horst Samulowitz, Beat Buesser, Thanh Hoang, Udayan Khurana, Sijia Liu, Tejaswini Pedapati, Parikshit Ram, Ambrish Rawat, Martin Wistuba and Alexander Gray

IBM Research, United States

P3915 **Leveraging Multisource Information in Matrix Factorization for Social Collaborative Filtering [#20165]**

Lele Huang, Huifang Ma, Xiangchun He and Liang Chang

College of Computer Science and Engineering, Northwest Normal Uni- versity, China; College of Education Tech- nology, Northwest Normal University., China; Computer Science and Information Security, Guilin University of Electronic Technol- ogy, China

Session I-R30: Modular Networks

Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Room 1, Chair: Yifeng Li, Xiaodan Zhu

5:45PM **Spatio-Temporal Distributed Solar Irradiance and Temperature Forecasting [#21781]**

Chirath Pathiravasam, Paranietharan Arunagirinathan, Iroshani Jayawardene, Ganesh K. Venayagamoorthy and Yongqiang Wang

Clemson University, United States

6:05PM **High Capacity Deep Block Classifiers with Logistic Neurons and Random Coding [#21210]**

Olaoluwa Adigun and Bart Kosko

University of Southern California, United States

6:25PM **Adaptive Graph Convolutional Networks with Attention Mechanism for Relation Extraction [#20069]**

Zhixin Li, Yaru Sun, Suqin Tang, Canlong Zhang and Huifang Ma

Guangxi Normal University,Guangxi Key Lab of Multi-source Information Mining and Security, China; Northwest Normal University,College of Computer Science and Engineering, China

6:45PM **FCN+RL: A Fully Convolutional Network followed by Refinement Layers to Offline Handwritten Signature Segmentation [#21703]**

Celso A. M. L. Lopes Junior, Matheus Henrique Marques da Silva, Byron Leite Dantas Bezerra, Bruno Jose Torres Fernandes and Donato Impedovo

Universidade de Pernambuco, Brazil; University of Bari, Italy

7:05PM **Capsule Deep Generative Model That Forms Parse Trees [#21951]**

Yifeng Li, Xiaodan Zhu, Richard Naud and Pengcheng Xi

Department of Computer Science, Brock University, Canada; Department of Electrical and Computer Engineering, Queen's University, Canada; Brain and Mind Research Institute, University of Ottawa, Canada; Digital Technologies Research Centre, National Research Council Canada, Canada

7:25PM **3D Memristor Crossbar Architecture for a Multicore Neuromorphic System [#21587]**

B. Rasitha Fernando, Yangjie Qi, Chris Yakopcic and Tarek M. Taha

University of Dayton, United States

Special Session I-SS27: Embedded AI for Real-Time Systems

Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Room 2, Chair: Saibal Mukhopadhyay

5:45PM **Pruning Filters while Training for Efficiently Optimizing Deep Learning Networks [#21949]**

Sourjya Roy, Priyadarshini Panda, Gopalakrishnan Srinivasan and Anand Raghunathan

Purdue University, United States; Yale University, United States

6:05PM **FAuto: An Efficient GMM-HMM FPGA Implementation for Behavior Estimation in Autonomous Systems [#20303]**

Junde Li, Navyata Gattu and Swaroop Ghosh

Pennsylvania State University, United States

6:25PM **Energy-efficient and Robust Cumulative Training with Net2Net Transformation [#20680]**

Aosong Feng and Priyadarshini Panda

Yale University, United States

6:45PM **KTAN: Knowledge Transfer Adversarial Network [#20902]**

Peiye Liu, Wu Liu, Huadong Ma, Zhewei Jiang and Mingoo Seok

Beijing University of Posts and Telecommunications, China; JD, China; Columbia University, United States

7:05PM **SAFE-DNN: A Deep Neural Network With Spike Assisted Feature Extraction For Noise Robust Inference [#20113]**

Xueyuan She, Priyabrata Saha, Daehyun Kim, Yun Long and Saibal Mukhopadhyay

Georgia Institute of Technology, United States

7:25PM **Flex-PIM: A Ferroelectric FET based Vector Matrix Multiplication Engine with Dynamical Bitwidth and Floating Point Precision [#20772]**

Yun Long, Edward Lee, Daehyun Kim and Saibal Mukhopadhyay

Georgia Institute of Technology, United States

Special Session I-SS51: Neurocomputing and Cognition

Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Room 3, Chair: Larry Manevitz

5:45PM **Hiding Data in Images Using Spectral Filtering and Deep Neural Networks [#21398]**

Hadar Shalev, Pe'erly Setter, Ruth Kimchi and Hagit Hel-Or

University of Haifa, Israel

6:05PM **Reconstructing Abstract Concepts and their Blends Via Computational Cognitive Modeling [#20860]**

Rahul Sharma, Bernardete Ribeiro, Alexandre Miguel Pinto and Amilcar F Cardoso

University of Coimbra, Portugal

6:25PM **Geodesic Clustering of Positive Definite Matrices For Classification of Mental Disorder Using Brain Functional Connectivity [#21304]**

Muhammad Abubakar Yamin, Jacopo Tessadori, Muhammad Usman Akbar, Michael Dayan, Vittorio Murino and Diego Sona

Pattern Analysis and Computer Vision, Istituto Italiano di Tecnologia, Genova, Italy. Department of Electrical, Electronics and Telecommunication Engineering and Naval Architecture, Universita degli Studi di Genova, Italy, Italy; Pattern Analysis and Computer Vision, Istituto Italiano di Tecnologia, Genova, Italy, Italy; Human Neuroscience Platform, Fondation Campus Biotech Geneva, Geneva, Switzerland., Switzerland; Pattern Analysis and Computer Vision, Istituto Italiano di Tecnologia, Genova, Italy. Department of Computer Science,Universita di Verona,Verona, Italy Huawei Technologies Ltd., Ireland Research Center,Dublin, Irelan, Ireland; Pattern Analysis and Computer Vision, Istituto Italiano di Tecnologia, Genova, Italy Neuroinformatics Laboratory,Fondazione Bruno Kessler, Trento, Italy, Italy

6:45PM **Trait depressivity prediction with EEG signals via LSBoost [#20699]**

Shenghuan Zhang, Brendan McCane, Phoebe Neo, Shabah Shadli and Neil McNaughton

University of Otago, New Zealand

7:05PM **Mapping individual differences in cortical architecture using multi-view representation learning [#21505]**

Akrem Sellami, Francois-Xavier Dupe, Bastien Cagna, Hachem Kadri, Stephane Ayache, Thierry Artieres and Sylvain Takerkart

LIS, Aix-Marseille Universite, France; INT, Aix-Marseille Universite, France

7:25PM **Design and Selection of Features under ERP for Correlating and Classifying between Brain Areas and Dyslexia via Machine Learning [#20907]**

Alex Frid and Larry Manevitz

The Technion, Israel Institute of Technology, Israel; Ariel University and University of Haifa, Israel

Special Session I-SC13B: Biologically Inspired Cognitive Robotics

Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Room 4, Chair: Wei Hong Chin

5:45PM **A Lightweight Neural-Net with Assistive Mobile Robot for Human Fall Detection System [#21298]**

Wei Hong Chin, Noel Nuo Wi Tay, Naoyuki Kubota and Chu Kiong Loo

Tokyo Metropolitan University, Japan; University of Malaya, Malaysia

6:05PM **A Muscle-Reflex Model of Forelimb and Hindlimb of Felidae Family of Animal with Dynamic Pattern Formation Stimuli [#21701]**

Azhar Aulia Saputra, Wei Hong Chin, Auke Jan Ijspeert and Naoyuki Kubota

Tokyo Metropolitan University, Japan; Ecole Polytechnique Federale de Lausanne, Switzerland

6:25PM **Multilayer Clustering Based on Adaptive Resonance Theory for Noisy Environments [#21789]**

Narito Amako, Naoki Masuyama, Chu Loo, Yusuke Nojima, Yiping Liu and Hisao Ishibuchi

Osaka Prefecture University, Japan; University of Malaya, Malaysia; Southern University of Science and Technology, China

6:45PM **Semi-Synthetic Images Generation for Efficient Convolutional Neural Networks Training in Autonomous Drone Racing [#21169]**

Theo Morales, Andriy Sarabakha and Erdal Kayacan

DOPI, France; Nanyang Technological University, Singapore; Aarhus University, Denmark

7:05PM **Deep Reinforcement Learning for Motion Planning of Quadrotors Using Raw Depth Images [#20795]**

Efe Camci, Domenico Campolo and Erdal Kayacan

Nanyang Technological University, Singapore; Aarhus University, Denmark

7:25PM **Muscle Vectors as Temporally Dense "Labels" [#21808]**

Xiang Wu and Juyang Weng

Nanjing University of Science and Technology, China; Michigan State University, United States

Special Session I-SS33B: Computationally Intelligent Methods in Neural Data Processing

Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Room 5, Chair: Mufti Mahmud

5:45PM **Neural Network-based Artifact Detection in Local Field Potentials Recorded from Chronically Implanted Neural Probes [#21954]**

Marcos Ignacio Fabietti, Mufti Mahmud, Ahmad Lotfi, Alberto Averna, David Guggenmos, Randolph Nudo and Michela Chiappalone

Dept of Computing & Technology, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom; Rehab Technologies, Istituto Italiano di Tecnologia, Genova, Italy; Department of Physical Medicine and Rehabilitation, University of Kansas Medical Center, Kansas City, KS, United States

6:05PM **Multivariate Models for Decoding Hearing Impairment using EEG Gamma-Band Power Spectral Density [#20201]**

Md Sultan Mahmud, Faruk Ahmed, Mohammed Yeasin, Claude Alain and Gavin M. Bidelman

University of Memphis, United States; University of Toronto, Canada

6:25PM **Robust feature learning method for epileptic seizures prediction based on long-term EEG signals [#21360]**

Asma Baghdadi, Rahma Fourati, Yassine Aribi, Patrick Siarry and Adel M. Alimi

REGIM-Lab.: REsearch Group in Intelligent Machines, University of Sfax,, Tunisia; LISSI Laboratory Paris-Est Creteil University, France

6:45PM **MIEEG-GAN: Generating Artificial Motor Imagery Electroencephalography Signals [#21197]**

Sujit Roy, Shirin Dora, Karl McCreadie and Girijesh Prasad

Intelligent Systems Research Centre, Ulster University, United Kingdom

7:05PM **A Privacy-Preserving Generative Adversarial Network Method for Securing EEG Brain Signals [#20104]**

Essam Debie, Nour Moustafa and Monica Whitty

University of New South Wales, Australia

7:25PM **Self-Learning with Stochastic Triplet Loss [#21279]**

Joao Ribeiro Pinto and Jaime S. Cardoso

INESC TEC and Universidade do Porto, Portugal

Session I-R31: Deep Learning II

Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Room 6, Chair: Shuva Paul

5:45PM **Rethinking Modal-oriented Label Correlations for Multi-modal Multi-label Learning [#20040]**

Yi Zhang, Jundong Shen, Zhecheng Zhang, Lei Zhang and Chongjun Wang

Nanjing University, China

6:05PM **IT-Block: Inverted Triangle Block embedded U-Net for Medical Image Segmentation [#20290]**
Xueyang Li, Yongfeng Huang, Cairong Yan and Lihao Liu
School of Computer Science and Technology, Donghua University, Shanghai, China

6:25PM **One-Shot Unsupervised Domain Adaptation for Object Detection [#21517]**
Zhiqiang Wan, Lusi Li, Hepeng Li, Haibo He and Zhen Ni
University of Rhode Island, United States; Florida Atlantic University, United States

6:45PM **Simple and Effective Prevention of Mode Collapse in Deep One-Class Classification [#20466]**
Penny Chong, Lukas Ruff, Marius Kloft and Alexander Binder
Singapore University of Technology and Design, Singapore; TU Berlin, Germany; TU Kaiserslautern, Germany

7:05PM **An Improvement based on Wasserstein GAN for Alleviating Mode Collapsing [#20414]**
Yingying Chen and Xinwen Hou
Institute of Automation, Chinese Academy of Sciences, China

7:25PM **Improving Generalization Performance of Adaptive Learning Rate by Switching from Block Diagonal Matrix Preconditioning to SGD [#20309]**
Yasutoshi Ida and Yasuhiro Fujiwara
NTT Software Innovation Center, Japan; NTT Communication Science Laboratories, Japan

Session I-R32: Applications of deep networks
Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Room 7, Chair: Glen Rosendale

5:45PM **Sparse Attributed Network Embedding via Adaptively Aggregating Neighborhood Information [#20618]**
Ying Chen, Jingwei Zheng and Dagang Li
Peking University, China; Macau University of Science and Technology, China

6:05PM **Pre-trained Language Models with Limited Data for Intent Classification [#20196]**
Buddhika Hasantha Kasthuriarachchy, Madhu Chetty, Gour Karmakar and Darren Walls
Federation University Australia, Australia; Global Hosts Pty Ltd, Australia

6:25PM **Deep Reinforcement Learning for Traveling Salesman Problem with Time Windows and Rejections [#20494]**
Rongkai Zhang, Anatolii Prokhorchuk and Justin Dauwels
Nanyang Technological University, Singapore

6:45PM **Zero-Shot Source Code Author Identification: A Lexicon and Layout Independent Approach [#20305]**
Pegah Hozhabrierdi, Dunai Fuentes Hitos and Chilukuri K. Mohan
Syracuse University, United States; Independent Researcher, Spain

7:05PM **Deep Active Learning for Anomaly Detection [#20324]**
Tiago Pimentel, Marianne Monteiro, Adriano Veloso and Nivio Ziviani
Kunumi, Brazil; Universidade Federal de Minas Gerais, Brazil

7:25PM **Training DNN IoT Applications for Deployment On Analog NVM Crossbars [#21667]**
Fernando Garcia-Redondo, Shidhartha Das and Glen Rosendale
Arm Ltd, United Kingdom; Arm Ltd, United States

Plenary Poster Session I-P21: Reinforcement learning and adaptive dynamic programming
Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Poster Room 1, Chair: Neha Bharill, Abdulrahman Altahhan

P4101 **Meta-Reward Model Based on Trajectory Data with k-Nearest Neighbors Method [#20812]**
Xiaohui Zhu and Toshiharu Sugawara
Waseda University, Japan

P4102 **Instance-Based Ensemble Selection Using Deep Reinforcement Learning [#21060]**
Zhengshang Liu and Kotagiri Ramamohanarao
The University of Melbourne, Australia

P4103 **Regret Analysis of Stochastic Multi-armed Bandit Problem with Clustered information Feedback [#20489]**
Tianchi Zhao, Bo Jiang, Ming Li and Ravi Tandon
The University of Arizona, United States

P4104 **Model Predictive Control Guided Reinforcement Learning Control Scheme [#21229]**
Huimin Xie, Xinghai Xu, Yuling Li, Wenjing Hong and Jia Shi
Xiamen University, China; Imperial College London, United Kingdom

P4105 **A Reinforcement Learning Algorithm for Resource Provisioning in Mobile Edge Computing Network [#21968]**
Thi Thanh Binh Huynh, Phi Le Nguyen, Binh Minh Nguyen, Thu Hai Trinh, Quang Minh Ngo and Bao Son Do
School of Information and Communication Technology, Hanoi University of Science and Technology, Viet Nam; Faculty of Information Technology, University of Transport Technology, Viet Nam

P4106 **True Online TD(λ)-Replay: An Efficient Model-free Planning with Full Replay [#21970]**
Abdulrahman Altahhan
Leeds Beckett University, United Kingdom

P4107 **On the Role of Reward Functions for Reinforcement Learning in the Traffic Assignment Problem [#20503]**
Ricardo Grunitzki and Gabriel de Oliveira Ramos
Sidia Institute of Science & Technology, Brazil; Universidade do Vale do Rio dos Sinos - UNISINOS, Brazil

P4108 **Design of a Reinforcement Learning PID controller [#21062]**
Zhe Guan and Toru Yamamoto
Hirsohima University, Japan

P4109 **Effective Linear Policy Gradient Search through Primal-Dual Approximation [#21452]**
Yiming Peng, Chen Gang and Zhang Mengjie
Victoria University of Wellington, New Zealand

P4110 **Learning Transferable Domain Priors for Safe Exploration in Reinforcement Learning [#21759]**
Thommen George Karimpanal, Santu Rana, Sunil Gupta, Truyen Tran and Svetha Venkatesh
Deakin University, Australia

P4111 **Monoceros: A New Approach for Training an Agent to Play FPS Games [#21854]**
Ruiyang Yang, Hongyin Tang and Beihong Jin
University of Chinese Academy of Sciences, China

P4112 **Forest Fire Control with Learning from Demonstration and Reinforcement Learning [#21267]**
Travis Hammond, Dirk Jelle Schaap, Matthia Sabatelli and Marco Wiering
University of Groningen, Netherlands; Montefiori Institute, Belgium

P4113 **Scaling Active Inference [#21732]**
Alexander Tschantz, Manuel Baltieri, Anil Seth and Christopher Buckley
University of Sussex, United Kingdom; RIKEN Centre for Brain Science, Japan

P4114 **Deep Reinforcement Learning with Successive Over-Relaxation and its Application in Auto-scaling Cloud Resources [#21269]**
Indu John and Shalabh Bhatnagar
Indian Institute of Science, Bangalore, India

P4115 **Safe Reinforcement Learning via Probabilistic Timed Computation Tree Logic [#20500]**
Li Qian and Jing Liu
East China Normal University, China

P4116 **Variational Bayesian Parameter-Based Policy Exploration [#21032]**
Tikara Hosino
Nihon Unisys, Ltd., Japan

P4117 **Q-learning with exploration driven by internal dynamics in chaotic neural network [#21128]**
Toshitaka Matsuki, Souya Inoue and Katsunari Shibata
Oita University, Japan

P4118 **Improved Stochastic Synapse Reinforcement Learning for Continuous Actions in Sharply Changing Environments [#21675]**
Syed Naveed Hussain Shah and Dean Frederick Hougen
Microsoft Corporation, United States; University of Oklahoma, United States

P4119 **HAMLET - A Learning Curve-Enabled Multi-Armed Bandit for Algorithm Selection [#20379]**
Mischa Schmidt, Julia Gastinger, Sebastien Nicolas and Anett Schuelke
NEC Laboratories Europe GmbH, Germany

P4120 **Noisy Importance Sampling Actor-Critic: An Off-Policy Actor-Critic With Experience Replay [#21687]**
Norman Tasfi and Miriam Capretz
University Of Western Ontario, Canada

P4121 **"I'm Sorry Dave, I'm Afraid I Can't Do That" Deep Q-Learning from Forbidden Actions [#21722]**
Mathieu Seurin, Philippe Preux and Olivier Pietquin
Univ.Lille, CRIStAL, CNRS, Inria, France; Google Research - Brain Team, France

Plenary Poster Session I-P22: Clinical applications
Thursday, July 23, 5:45PM-7:45PM, Room: IJCNN Poster Room 2, Chair: Monica Bianchini

P4301 **Cooperative Evolution Multiclass Support Matrix Machines [#21897]**
Razzak Imran
Deakin, Austria

P4302 **A Study of Emergency Department Patient Admittance Predictors [#21425]**
Harish Kumar Manchukonda, Shahram Rahimi, Alexander Sommers, Sean Bozorgzad and Junfeng Ma
Mississippi State University, United States; Potentia Analytics Inc., United States

P4303 **A cascaded step-temporal attention network for ECG arrhythmia classification [#21157]**

Yanyun Tao, Yuzhen Zhang, Guoqi Yue, Kaixin Wang and Bin Jiang

Soochow university, China; The First Affiliated Hospital of Soochow University, China

P4304 **A Modular Framework to Predict Alzheimer's Disease Progression Using Conditional Generative Adversarial Networks [#21720]**

Shoumik Roychowdhury and Shounak Roychowdhury

Westwood High School, United States; Texas State University, United States

P4305 **Retinopathy of Prematurity Stage Diagnosis Using Object Detection and Convolutional Neural Networks [#20694]**

Alexander Ding, Qilei Chen, Yu Cao and Benyuan Liu

Commonwealth School, United States; University of Massachusetts Lowell, United States

P4306 **Forecast of paroxysmal atrial fibrillation using a deep neural network [#20200]**

Cedric Gilon, Jean-Marie Gregoire and Hugues Bersini

Universite Libre de Bruxelles, Belgium

P4307 **Explainable Deep CNNs for MRI-Based Diagnosis of Alzheimer's Disease [#20383]**

Eduardo Nigri, Nivio Ziviani, Fabio Cappabianco, Augusto Antunes and Adriano Veloso

CS Dept. UFMG and Kunumi, Brazil; UNIFESP DCT, Brazil; InRad-FMUSP and Kunumi, Brazil; CS Dept. UFMG, Brazil

P4308 **Cascaded Convolutional Neural Networks with Perceptual Loss for Low Dose CT Denoising [#21807]**

Sepehr Ataei, Javad Alirezaie and Paul Babyn

Electrical and Computer Engineering, Ryerson University, Canada; Department of Medical Imaging, University of Saskatoon, Canada

P4309 **Adversarial Vulnerability in Doppler-based Human Activity Recognition [#21013]**

Zhaoyuan Yang, Yang Zhao and Weizhong Yan

GE Research, United States

P4310 **Myocardial Infarction Segmentation From Late Gadolinium Enhancement MRI By Neural Networks and Prior Information [#21478]**

Zhihao Chen, Alain Lalande, Michel Salomon, Thomas Decourselle, Thibaut Pommier, Gilles Perrot and Raphael Couturier

FEMTO-ST Institute, CNRS UMR 6174, Univ. Bourgogne Franche-Comte, France; ImVia Laboratory, Univ. Bourgogne Franche-Comte / CHU Dijon, France; CASIS Company, France; Cardiology Department, CHU Dijon, France

Session I-R33: Recurrent neural networks

Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Room 1, Chair: Jen-Tzung Chien, Yu-Min Huang

8:00PM **Recurrent Neural Filters: Learning Independent Bayesian Filtering Steps for Time Series Prediction [#20513]**

Bryan Lim, Stefan Zohren and Stephen Roberts

University of Oxford, United Kingdom

8:20PM **Localisation in Wireless Networks using Deep Bidirectional Recurrent Neural Networks [#21423]**

David Lynch, Lester Ho, Michael MacDonald and Michael O'Neill

University College Dublin, Ireland; Nokia Bell Laboratories, Ireland; Nokia Bell Laboratories, United States

8:40PM **Explicit Linear Dual-Multistep Methods Applied to ZNN Illustrated via Discrete Time-Dependent Linear and Nonlinear Inequalities System Solving [#20007]**
Jinjin Guo, Binbin Qiu, Liangjie Ming and Yunong Zhang
Sun Yat-sen University, China

9:00PM **Fast k-Fuzzy-Rough Cognitive Networks [#20041]**
Napoles Gonzalo, Goossens Wouter, Moesen Quinten and Mosquera Carlos
Hasselt University, Belgium

9:20PM **Stochastic Convolutional Recurrent Networks [#20657]**
Jen-Tzung Chien and Yu-Min Huang
National Chiao Tung University, Taiwan

9:40PM **Problem Solving with Hopfield Networks and Adiabatic Quantum Computing [#21320]**
Christian Bauckhage, Ramses Sanchez and Rafet Sifa
University of Bonn, Germany; Fraunhofer IAIS, Germany

Special Session I-SS25A: Machine Learning and Deep Learning Methods applied to Vision and Robotics
Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Room 2, Chair: Andres Fuster Guillo, Jorge Azorin-Lopez

8:00PM **Statistical and Geometrical Alignment using Metric Learning in Domain Adaptation [#20174]**
Rakesh Sanodiya, Alwyn Mathew, Jimson Mathew and Matloob Khushi
National Taipei University of Technology, Taipei 10608, Taiwan,, Taiwan; Computer Science and Engineering, Indian Institute of Technology Patna, Patna, Bihar, India, India; School of Computer Science, The University of Sydney, Sydney, Australia, Australia

8:20PM **Closing the Simulation-to-Reality Gap using Generative Neural Networks: Training Object Detectors for Soccer Robotics in Simulation as a Case Study [#21328]**
Nicolas Cruz and Javier Ruiz-del-Solar
Universidad de Chile, Chile

8:40PM **Hybridization of Data and Model based Object Detection for Tracking in Flash Lidars [#20668]**
Kruttidipta Samal, Marilyn Wolf and Saibal Mukhopadhyay
Georgia Institute of Technology, United States

9:00PM **Image Clustering Using a Growing Neural Gas with Forbidden Regions [#21409]**
Jesus Benito-Picazo, Antonio Diaz Ramos, Esteban J. Palomo and Enrique Dominguez
Universidad de Malaga, Spain

9:20PM **Learning to Infer the Depth Map of a Hand from its Color Image [#20045]**
Vassilis - Clitos Nicodemou, Iason Oikonomidis, Georgios Tzimiropoulos and Antonis Argyros
Computer Science Department University of Crete, Greece; Institute of Computer Science FORTH, Greece; School of Computer Science University of Nottingham, United Kingdom

9:40PM **Multi-modal Information Extraction and Fusion with Convolutional Neural Networks [#20821]**
Dinesh Kumar and Dharmendra Sharma
University of Canberra, Australia

Special Session I-SS47: Mind, Brain, and Cognitive Algorithms
Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Room 3, Chair: Leonid Perlovsky

8:00PM **What You Get is More Than What You See - or Less -- in Models of Human Decision Making [#21323]**
Daniel Levine
University of Texas at Arlington, United States

8:20PM **A cognitive inspired method for assessing novelty of short-text idea [#21887]**
Simona Doboli, Jared Kenworthy, Paul Paulus, Ali Minai and Doboli Alex
Hofstra University, United States; University of Texas Arlington, United States; University of Cincinnati, United States; Stony Brook University, United States

8:40PM **Multiple Timescale and Gated Mechanisms for Action and Language Learning in Robotics [#20570]**
Wenjie Huang, Junpei Zhong and Angelo Cangelosi
University of Manchester, United Kingdom; Nottingham Trent University, United Kingdom; University of Manchester(UK); AIST-AIRC(Japan)), United Kingdom

9:00PM **On the brain-mind visual experiences [#20447]**
Tania Re and Giuseppe Vitiello
University of Genoa, Italy; University of Salerno, Italy

9:20PM **A Developmental Neuro-Robotics Approach for Boosting the Recognition of Handwritten Digits [#21794]**
Alessandro Di Nuovo
Sheffield Hallam University, United Kingdom

9:40PM **Automated Deception Detection of Male and Females From Non-Verbal Facial Micro-Gestures [#20265]**
Keeley Crockett, James O'Shea and Wasiq Khan
Manchester Metropolitan University, United Kingdom; Liverpool John Moores Univeristy, United Kingdom

Special Session I-SS16: Neural Network-based Uncertainty Quantification
Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Room 4, Chair: Abbas Khosravi

8:00PM **Prediction Error Meta Classification in Semantic Segmentation: Detection via Aggregated Dispersion Measures of Softmax Probabilities [#20849]**
Matthias Rottmann, Pascal Colling, Thomas Paul Hack, Robin Chan, Fabian Hueger, Peter Schlicht and Hanno Gottschalk
University of Wuppertal, Germany; University Leipzig, Germany; Volkswagen Group Innovation, Germany

8:20PM **Uncertainty Quantification Neural Network from Similarity and Sensitivity [#20031]**
H M Dipu Kabir, Abbas Khosravi, Darius Nahavandi and Saeid Nahavandi
Deakin University, Australia

8:40PM **Quantifying Uncertainty in Ensembles of Neural Networks using U-Statistics [#21696]**
Jordan Schupbach, John Sheppard and Tyler Forrester
Montana State University, United States

9:00PM **Machine learning with incomplete datasets using multi-objective optimization models [#21133]**
Hadi Akbarzadeh Khorshidi, Michael Kirley and Uwe Aickelin
The University of Melbourne, Australia

9:20PM **Temporal Calibrated Regularization for Robust Noisy Label Learning [#20515]**
Dongxian Wu, Yisen Wang, Zhuobin Zheng and Shu-Tao Xia
Tsinghua University, China; Shanghai Jiao Tong University, China

9:40PM **Region-DH: Region-based Deep Hashing for Multi-Instance Aware Image Retrieval [#20491]**
Franck Romuald Fotso Mtope and Bo Wei
Research and Innovation, Cognitive Data System, SARL, Cameroon; Department of Computer and Information Sciences, Northumbria University, United Kingdom

Special Session I-SS34: Deep Learning for Brain-like Computing and Pattern Recognition
Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Room 5, Chair: Guoqiang Zhong

8:00PM **EDNet: A Mesoscale Eddy Detection Network with Multi-Modal Data [#20754]**
Zhenlin Fan, Guoqiang Zhong, Hongxu Wei and Haitao Li
Ocean University of China, China

8:20PM **MetaCGAN: A Novel GAN Model for Generating High Quality and Diversity Images with Few Training Data [#21707]**
Ying Ma, Guoqiang Zhong, Yanan Wang and Wen Liu
Ocean University of China, China; Qingdao Yisa Data Technology Company, China

8:40PM **Underwater object detection using Invert Multi-Class Adaboost with deep learning [#21035]**
Chen Long, Liu Zhihua, Tong Lei, Jiang Zheheng, Wang Shengke, Dong Junyu and Zhou Huiyu
University of Leicester, United Kingdom; Ocean University of China, China

9:00PM **Fully Convolutional Network for Removing DCT Artefacts From Images [#21604]**
Patryk Najgebauer, Rafal Scherer and Leszek Rutkowski
Czestochowa University of Technology, Poland; University of Social Sciences, Poland

9:20PM **Application of PSO-GA and CGA in Sea-Clutter Doppler Spectrum Modeling [#21018]**
Shubin Zhang, Tingting Ji, Wenyuan Wang and Jinpeng Zhang
Ocean University of China, China; China Research Institute of Radiowave Propagation, China

9:40PM **Multi-Receptive Atrous Convolutional Network for Semantic Segmentation [#20275]**
Mingyang Zhong, Brijesh Verma and Joseph Affum
Central Queensland University, Australia; Australian Road Research Board, Australia

Session I-R34: Deep Learning III
Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Room 6, Chair: Guoqiang Zhong

8:00PM **Anomaly Detection Based on Unsupervised Disentangled Representation Learning in Combination with Manifold Learning [#20702]**
Xiaoyan Li, Iluju Kiringa, Tet Yeap, Xiaodan Zhu and Yifeng Li
University of Ottawa, Canada; Queen's University, Canada; Brock University, Canada

8:20PM **One-step Predictive Encoder - Gaussian Segment Model for Time Series Anomaly Detection [#21480]**
Jiachen Zhao, Yongling Li, Haibo He and Fang Deng
Beijing Institute of Technology, China; Beijing Jiaotong University, China; University of Rhode Island, United States

8:40PM **Fisher Discriminant Triplet and Contrastive Losses for Training Siamese Networks [#20386]**

Benyamin Ghojogh, Milad Sikaroudi, Sobhan Shafiei, H.R. Tizhoosh, Fakhri Karray and Mark Crowley

Department of Electrical and Computer Engineering, University of Waterloo, Waterloo, ON, Canada, Canada; Kimia Lab, University of Waterloo, Waterloo, ON, Canada, Canada

9:00PM **Learned Weight Sharing for Deep Multi-Task Learning by Natural Evolution Strategy and Stochastic Gradient Descent [#20418]**

Jonas Prellberg and Oliver Kramer

University of Oldenburg, Germany

9:20PM **Multi-modal cyberbullying detection on social networks [#21132]**

Kaige Wang, Qingyu Xiong, Chao Wu, Min Gao and Yang Yu

School of Big Data and Software Engineering, Chongqing University, Chongqing, China, 401331, China

9:40PM **TAM-Net: Temporal Enhanced Appearance-to-Motion Generative Network for Video Anomaly Detection [#20370]**

Xiangli Ji, Bairong Li and Yuesheng Zhu

Peking university, China; Peking University, China

Session I-R35:

Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Room 7, Chair: Krzysztof Slot

8:00PM **Two-stage Automatic Image Annotation Based on Latent Semantic Scene Classification [#20709]**

Hongwei Ge, Kai Zhang, Yaqing Hou, Chao Yu, Mingde Zhao, Zhen Wang and Liang Sun

Dalian University of Technology, China; McGill University, Canada

8:20PM **Selective Feature Network for Object Detection [#21755]**

Yuning Cui, Dianxi Shi, Yongjun Zhang and Qianchong Sun

National University of Defense Technology, China; National Innovation Institute of Defense Technology, China

8:40PM **Continuous Emotion Recognition via Deep Convolutional Autoencoder and Support Vector Regressor [#21351]**

Sevegni Odilon Clement Allognon, Alessandro Lameiras Koerich and Alceu de Souza Britto Jr.

Ecole de Technologie Superieure, Canada; Pontifical Catholic University of Parana, Brazil

9:00PM **Facial Appearance Modifications using SKPCA-Derived Features Extracted from Convolutional Autoencoder's Latent Space [#21168]**

Krzysztof Adamiak, Pawel Kapusta and Krzysztof Slot

Lodz University of Technology, Poland

9:20PM **Adversarial Perturbations Fool Deepfake Detectors [#21652]**

Apurva Gandhi and Shomik Jain

University of Southern California, United States

9:40PM **Identity-Preserving Realistic Talking Face Generation [#21724]**

Sanjana Sinha, Sandika Biswas and Brojeshwar Bhowmick

TCS Research and Innovation, India

Plenary Poster Session I-P23: Semi-supervised learning, Online Learning, Probabilistic Methods
Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Poster Room 1, Chair: Fabricio Breve

P4501 Laplacian-based Semi-supervised Multi-Label Regression [#20744]
Vivien Kraus, Khalid Benabdeslem and Bruno Canitia
Universite Lyon 1, France; Lizeo Group, France

P4502 A Co-Training-based Algorithm Using Confidence Values to Select Instances [#20785]
Karliane M. O. Vale, Flavius L. Gorgonio, Yago N. Araujo, Arthur C. Gorgonio and Anne Magaly de P. Canuto
Federal University of Rio Grande do Norte, Brazil

P4503 Two Novel Approaches for Automatic Labelling in Semi-Supervised Methods [#21410]
Cephas Barreto, Anne Canuto, Joao Xavier-Junior, Arthur Gorgonio, Douglas Lima and Ranna Costa
Federal University of Rio Grande do Norte (UFRN), Brazil

P4504 Neighborhood-Aware Attention Network for Semi-supervised Face Recognition [#20121]
Qi Zhang, Zhen Lei and Stan Z. Li
CBSR & NLPR, Institute of Automation, Chinese Academy of Sciences, China

P4505 Towards Precise End-to-end Semi-Supervised Human Head Detection Network [#21327]
Rongchun Li, Junjie Zhang, Yuntao Liu and Yong Dou
National Laboratory for Parallel and Distributed Processing, National University of Defense Technology, China

P4506 Word sense disambiguation: an evaluation study of semi-supervised approaches with word embeddings [#21638]
Samuel Sousa, Evangelos Milios and Lilian Berton
Universidade Federal de Sao Paulo, Brazil; Dalhousie University, Canada

P4507 Mixing Up Real Samples and Adversarial Samples for Semi-Supervised Learning [#20822]
Yun Ma, Xudong Mao, Yangbin Chen and Qing Li
The Hong Kong Polytechnic University, Hong Kong; City University of Hong Kong, Hong Kong

P4508 Robust Semi-Supervised Semantic Segmentation Based on Self-Attention and Spectral Normalization [#20186]
Jia Zhang, Zhixin Li, Canlong Zhang and Huifang Ma
Guangxi Normal University, China; Northwest Normal University, China

P4509 Visually Impaired Aid using Convolutional Neural Networks, Transfer Learning, and Particle Competition and Cooperation [#20944]
Fabricio Breve and Carlos Norberto Fischer
Sao Paulo State University, Brazil

P4510 Bilinear Semi-Tensor Product Attention (BSTPA) model for visual question answering [#20183]
Zongwen Bai, Ying Li, Meili Zhou, Di Li, Dong Wang, Dawid Po{\l}ap and Marcin Wo{\'z}niak
School of Computer Science, Northwestern Polytechnical University, Xi'an 710072, CHINA;Shaanxi Key Laboratory of Intelligent Processing for Big Energy Data, Yan'an 716000, CHINA, China; School of Computer Science, Northwestern Polytechnical University, Xi'an 710072, CHINA, China; School of Physics and Electronic Information , Yan'an University, Yan'an 716000, CHINA, China; Faculty of Applied Mathematics, Silesian University of Technology, Kaszubska 23, 44-100 Gliwice, POLAND, Poland

P4511 ZF Model Efficiency for Automatic Hand Detection in Vehicles [#21046]
Sofiane Medjram and Saida Bouakaz
LISTIC-Lab, Savoie Mont Blanc University, France; Claude Bernard Lyon 1 University, France

P4512 AUC Estimation and Concept Drift Detection for Imbalanced Data Streams with Multiple Classes [#20423]

Shuo Wang and Leandro Minku

University of Birmingham, United Kingdom

P4513 On Ensemble Techniques for Data Stream Regression [#21786]

Heitor Murilo Gomes, Jacob Montiel, Saulo Martiello Mastelini, Bernhard Pfahringer and Albert Bifet

University of Waikato, New Zealand; University of Sao Paulo, Brazil

P4514 Automatic hyperparameter tuning in on-line learning: Classic Momentum and ADAM [#20044]

Pawel Wawrzynski, Pawel Zawistowski and Lukasz Lepak

Warsaw University of Technology, Poland

P4515 GPU-based State Adaptive Random Forest for Evolving Data Stream [#20268]

Ocean Wu, Yun Sing Koh and Giovanni Russello

The University of Auckland, New Zealand

P4516 Prediction with Expert Advice for Value at Risk [#20337]

Raisa Dzhamtyrova and Yuri Kalnishkan

Royal Holloway, University of London, United Kingdom

P4517 Robust Sparse Channel Estimation Based on Mixture Maximum Correntropy Criterion [#20282]

Lu Mingfei, Xing Lei, Zheng Nanning and Chen Badong

Institute of Artificial Intelligence and Robtics,Xi'an Jiaotong University, China

P4518 One-Class Support Tensor Machines with Bounded Hinge Loss Function for Anomaly Detection [#21694]

Razzak Imran and Tariq Khan

Deakin, Australia

P4519 Towards Online Discovery of Data-Aware Declarative Process Models from Event Streams [#21512]

Nicolo' Navarin, Matteo Cambiaso, Andrea Burattin, Fabrizio Maria Maggi, Luca Oneto and Alessandro Sperduti

University of Padua, Italy; University of Genoa, Italy; Technical University of Denmark, Denmark; Free University of Bozen-Bolzano, Italy

Plenary Poster Session I-P24:

Thursday, July 23, 8:00PM-10:00PM, Room: IJCNN Poster Room 2, Chair: Tolga Ensari

P4701 Persona aware Response Generation with Emotions [#21428]

Mauajama Firdaus, Naveen Thangavelu, Asif Ekbal and Pushpak Bhattacharyya

IIT Patna, India

P4702 Why Not? Tell us the Reason for Writer Dissimilarity [#20911]

Chandranath Adak, Bidyut B. Chaudhuri, Chin-Teng Lin and Michael Blumenstein

JIS Institute of Advanced Studies & Research, India; Techno India University, India; University of Technology Sydney, Australia

P4703 Dynamic Network Link Prediction by Learning Effective Subgraphs using CNN-LSTM [#21366]

Kalyani Selvarajah, Kumaran Ragunathan, Ziad Kobti and Mehdi Kargar

University of Windsor, Canada; Ryerson University, Canada

P4704 **Multi-paragraph Reading Comprehension with Token-level Dynamic Reader and Hybrid Verifier [#20242]**

Yilin Dai, Qian Ji, Gongshen Liu and Bo Su

Shanghai Jiao Tong University, China

P4705 **Modeling H2O/Rutile-TiO2(110) Potential Energy Surfaces with Deep Networks [#20147]**

Stefan Oehmcke, Thomas Teusch, Thorben Petersen, Thorsten Kl"uner and Oliver Kramer

Copenhagen University, Denmark; University of Oldenburg, Germany

P4706 **A Re-Ranking Framework for Knowledge Graph Completion [#20482]**

Zikang Wang, Linjing Li and Dajun Zeng

Chinese Academy of Sciences, China

P4707 **Change Your Singer: A Transfer Learning Generative Adversarial Framework for Song to Song Conversion [#20874]**

Rema Daher, Mohammad Kassem Zein, Julia El Zini, Mariette Awad and Daniel Asmar

American University of Beirut, Lebanon

P4708 **Range-Doppler Detection in Automotive Radar with Deep Learning [#21054]**

Weichong Ng, Guohua Wang, Siddhartha Siddhartha, Zhiping Lin and Bhaskar Jyoti Dutta

Nanyang Technological University, Singapore; Hertzwell, Singapore

P4709 **DSmith: Compiler Fuzzing through Generative Deep Learning Model with Attention [#21185]**

Haoran Xu, Yongjun Wang, Shuhui Fan, Peidai Xie and Aizhi Liu

National University of Defense Technology, China; Institute of War, Academy of Military Sciences, China

P4710 **Learning Single-view Object Reconstruction with Scaling Volume-View Supervision [#20240]**

Zishu Gao, Guodong Yang, En Li and Zize Liang

Institute of Automation, Chinese Academy of Sciences, China

P4711 **CCCNet: An Attention Based Deep Learning Framework for Categorized Counting of Crowd in Different Body States [#21769]**

Sarkar Snigdha Sarathi Das, Syed Md. Mukit Rashid and Mohammed Eunus Ali

Bangladesh University of Engineering and Technology, Bangladesh

P4712 **Predicting Human Errors from Gaze and Cursor Movements [#21436]**

Rachid Rhyad Saboundji and Robert Adrian Rill

Eotvos Lorand University, Hungary

P4713 **A Feature Ensemble-based Approach to Malicious Domain Name Identification from Valid DNS Responses [#21144]**

Zhao Chen, Zhang Yongzheng and Wang Yipeng

School of Cyber Security, University of Chinese Academy of Sciences, China; Institute of Information Engineering, Chinese Academy of Sciences, China

P4714 **Predicting Brazilian and U.S. Elections with Machine Learning and Social Media Data [#21191]**

Kellyton dos Santos Brito and Paulo Jorge Leitao Adeodato

Universidade Federal de Pernambuco and Universidade Federal Rural de Pernambuco, Brazil; Universidade Federal de Pernambuco, Brazil

P4715 **A Comparative Study of Classifiers for Thumbnail Selection [#21978]**

Kyle Pretorius and Nelishia Pillay

University of Pretoria, South Africa

P4716 **End-to-End Analysis for Text Detection and Recognition in Natural Scene Images [#21393]**

Ahlam Alnefaie, Deepak Gupta, Monowar H Bhuyan, Imran Razzak, Prashanat K Gupta and Mukesh Prasad

University of Technology Sydney, Australia; National Institute of Technology, Arunachal Pradesh, India; Umea University, Sweden; Deakin University, Australia; Amity School of Engineering and Technology, Noida, India

FRIDAY, JULY 24

Session I-R36: Reservoir networks and SOM
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Room 1, Chair: Pedro Braga, Heitor Medeiros

2:45PM **A Gated Recurrent Unit based Echo State Network [#20660]**
Xinjie Wang, Yaochu Jin and Kuangrong Hao
Engineering Research Center of Digitized Textile and Fashion Technology, Ministry of Education, Shanghai 201620, P. R. China College of Information Sciences and Technology, Donghua University, Shanghai 201620, P. R. China, China; Engineering Research Center of Digitized Textile and Fashion Technology, Ministry of Education, Shanghai 201620, P. R. China College of Information Sciences and Technology, Donghua University, Shanghai 201620, P. R. China Department of Computing, Universi, United Kingdom

3:05PM **Reservoir Computing with Neuro-Memristive Nanowire Networks [#21570]**
Kaiwei Fu, Ruomin Zhu, Alon Loeffler, Joel Hochstetter, Adrian Diaz-Alvarez, Adam Stieg, James Gimzewski, Tomonobu Nakayama and Zdenka Kuncic
University of Sydney, Australia; National Institute for Materials Science, Japan; University of California at Los Angeles, United States

3:25PM **HP-ESN: Echo State Networks Combined with Hodrick-Prescott Filter for Nonlinear Time-Series Prediction [#21788]**
Ziqiang Li and Gouhei Tanaka
The University of Tokyo, Japan

3:45PM **EEG feature learning with Intrinsic Plasticity based Deep Echo State Network [#21960]**
Rahma Fourati, Boudour Ammar, Yaochu Jin and Adel M. Alimi
ReGIM-Lab, university of Sfax, Tunisia; Department of Computer Science University of Surrey, United Kingdom

4:05PM **SoC Kohonen Maps Based on Stochastic Computing [#21334]**
Alejandro Moran, Josep L. Rossello, Miquel Roca and Vincent Canals
University of the Balearic Islands, Spain

4:25PM **Deep Categorization with Semi-Supervised Self-Organizing Maps [#21892]**
Pedro Braga, Heitor Medeiros and Hansenclever Bassani
Universidade Federal de Pernambuco, Brazil

Special Session I-SS18A: Explainable Computational/Artificial Intelligence
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Room 2, Chair: Julio Valdes

2:45PM **Plausible Counterfactuals: Auditing Deep Learning Classifiers with Realistic Adversarial Examples [#20556]**
Alejandro Barredo-Arrieta and Javier Del Ser
TECNALIA, Basque Research and Technology Alliance (BRTA), Spain; University of the Basque Country (UPV/EHU), Spain

3:05PM **Evaluating Explanations of Convolutional Neural Network Image Classifications [#20106]**
Sumeet Shah and John Sheppard
Johns Hopkins University, United States; Montana State University, United States

3:25PM **Black Box Attacks on Explainable Artificial Intelligence (XAI) methods in Cyber Security [#21162]**
Aditya Kuppa and Nhien-An Le-Khac
University College Dublin, Ireland

3:45PM **CIDMP: Completely Interpretable Detection of Malaria Parasite in Red Blood Cells using Lower-dimensional Feature Space [#21888]**

Anik Khan, Kishor Datta Gupta, Deepak Venugopal and Nirman Kumar

University of Memphis, United States

4:05PM **DeepConsensus: Consensus-based Interpretable Deep Neural Networks with Application to Mortality Prediction [#21764]**

Shaeke Salman, Seyedeh Neelufar Payrovnaziri, Xiuwen Liu, Pablo Rengifo-Moreno and Zhe He

Florida State University, United States

4:25PM **Locality Guided Neural Networks for Explainable Artificial Intelligence [#20488]**

Randy Tan, Naimul Khan and Ling Guan

Ryerson University, Canada

Special Session I-SS55: Extreme Learning Machines (ELM)

Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Room 3, Chair: Guang-Bin Huang

2:45PM **Hybrid Gray-Scale and Fuzzy Morphological/Linear Perceptrons Trained By Extreme Learning Machine [#21890]**

Peter Sussner, Israel Campiotti and Manuel Alejandro Quispe Torres

University of Campinas, Brazil; NeuralMind, Brazil

3:05PM **Graph Convolutional Extreme Learning Machine [#21160]**

Zijia Zhang, Yaoming Cai, Wenyin Gong, Xiaobo Liu and Zhihua Cai

China University of Geosciences (Wuhan), China

3:25PM **Human Gait Recognition Using Image Entropy Vector With Extreme Learning Machines [#20286]**

Muqing Deng, Jili Li, Jiangmin Tian, Xiaoping Lai, Jiuwen Cao and Zhiping Lin

Hangzhou Dianzi University, China; Nanyang Technological University, Singapore

3:45PM **Dense Broad Learning System based on Conjugate Gradient [#20307]**

Weidong Zou, Yuanqing Xia and Weipeng Cao

Beijing Institute of Technology, China; Shenzhen University, China

4:05PM **Self-Adaptive Hybrid Extreme Learning Machine for Heterogeneous Neural Networks [#20417]**

Vasileios Christou, Georgios Ntritsos, Alexandros T. Tzallas, Markos G. Tsipouras and Nikolaos Giannakeas

Base R&D, Science & Technology Park of Epirus, University of Ioannina Campus, Ioannina GR45110, Greece Department of Informatics and Telecommunications, School of Informatics and Telecommunications, University of Ioannina, Arta, Greece, Greece; Department of Informatics and Telecommunications, School of Informatics and Telecommunications, University of Ioannina, Arta, Greece Department of Hygiene and Epidemiology, University of Ioannina Medical School, Ioannina, Greece, Greece; Department of Informatics and Telecommunications, School of Informatics and Telecommunications, University of Ioannina, Arta, Greece, Greece; Deptartment of Electrical and Computer Engineering, University of Western Macedonia, Kozani, Greece, Greece

4:25PM **Feature Bagging and Extreme Learning Machines: Machine Learning with Severe Memory Constraints [#20588]**

Kallin Khan, Edward Ratner, Robert Ludwig and Amaury Lendasse

Edammo Inc, United States; University of Houston, United States

Special Session I-SS26: Neuromorphic Sensing, Processing and Applications
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Room 4, Chair: John Soraghan

2:45PM **Deep Convolutional Spiking Neural Network Based Hand Gesture Recognition [#21221]**
Weijie Ke, Yannan Xing, Gaetano Caterina, Lykourgos Petropoulakis and John Soraghan
University of Strathclyde, United Kingdom

3:05PM **On the automatic calibration of fully analogical spiking neuromorphic chips [#21127]**
Daniele M. Papetti, Simone Spolaor, Daniela Besozzi, Paolo Cazzaniga, Marco Antoniotti and Marco S. Nobile
University of Milano-Bicocca, Italy; University of Bergamo, Italy; Eindhoven University of Technology, Netherlands

3:25PM **The Importance of Balanced Data Sets: Analyzing a Vehicle Trajectory Prediction Model based on Neural Networks and Distributed Representations [#20331]**
Florian Mirus, Terrence C. Stewart and Jorg Conradt
BMW AG, Germany; Applied Brain Research Inc., Canada; KTH Royal Institute of Technology, Sweden

3:45PM **Multivariate Time Series Classification Using Spiking Neural Networks [#20947]**
Haowen Fang, Amar Shrestha and Qiu Qinru
Syracuse University, United States

4:05PM **Modified Capsule Neural Network (Mod-CapsNet) for Indoor Home Scene Recognition [#20262]**
Amlan Basu, Keerati Kaewrak, Lykourgos Petropoulakis, Gaetano Di Caterina and John Soraghan
University of Strathclyde, Glasgow, United Kingdom

4:25PM **SpikeSEG: Spiking Segmentation via STDP Saliency Mapping [#21790]**
Paul Kirkland, John Soraghan, Gaetano Di Caterina and George Matich
University of Strathclyde, United Kingdom; Leonardo, United Kingdom

Session I-R37:
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Room 5, Chair: Siyuan Chen

2:45PM **Multi-agent system for dynamic scheduling [#21271]**
Bernardo Firme, Guilherme Lopes, Miguel Sousa Esteves Martins, Tiago Coito, Joaquim Viegas, Joao Miguel Costa Sousa, Joao Carlos Prata Reis, Joao Figueiredo and Susana Vieira
IDMEC, Insitituto Superior Tecnico, Universidade de Lisboa, Portugal; Insitituto Superior Tecnico, Universidade de Lisboa, Portugal; Department of Physics, Universidade de Evora, Portugal

3:05PM **Multimodal Event-based Task Load Estimation from Wearables [#20973]**
Siyuan Chen and Julien Epps
UNSW, Australia; UNSW & CSIRO, Australia

3:25PM **GISNet:Graph-Based Information Sharing Network For Vehicle Trajectory Prediction [#20602]**
Ziyi Zhao, Haowen Fang, Zhao Jin and Qinru Qiu
Syracuse University, United States

3:45PM **Deep Ensemble Art Style Recognition [#21205]**
Orfeas Menis - Mastromichalakis, Natasa Sofou and Giorgos Stamou
National Technical University of Athens, Greece

Session I-R38: On-line learning and mixed topics
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Room 6, Chair: Francisco Bellas

2:45PM **Dropout Probability Estimation in Convolutional Neural Networks by the Enhanced Bat Algorithm [#21919]**
Nebojsa Bacanin, Eva Tuba, Timea Bezdan, Ivana Strumberger, Raka Jovanovic and Milan Tuba
Singidunum University, Serbia and Montenegro; Hamad bin Khalifa University, Qatar

3:05PM **Neural Network based Explicit Mixture Models and Expectation-maximization based Learning [#20222]**
Dong Liu, Minh Vu, Saikat Chatterjee and Lars K. Rasmussen
KTH Royal Institute of Technology, Sweden

Session I-R39:
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Room 7, Chair: Cesare Alippi

2:45PM **DR-TiST: Disentangled Representation for Time Series Translation Across Application Domains [#21723]**
Hiba Arnout, Johanna Bronner, Johannes Kehrer and Thomas Runkler
Siemens AG/ Technical University Of Munich, Germany; Siemens AG, Germany

3:05PM **Gated Res2Net for Multivariate Time Series Analysis [#20237]**
Chao Yang, Mingxing Jiang, Zhongwen Guo and Yuan Liu
Ocean University of China, China

3:25PM **Cluster-based Aggregate Load Forecasting with Deep Neural Networks [#20908]**
Andrea Cini, Slobodan Lukovic and Cesare Alippi
Universita' della Svizzera italiana, Switzerland; Politecnico di Milano, Italy

3:45PM **Measuring the engagement level in encrypted group conversations by using temporal networks [#21543]**
Moshe Cotacallapa, Lilian Berton, Leonardo Ferreira, Marcos Quiles, Liang Zhao, Macau Elbert and Didier Vega-Oliveiros
National Institute of Space Research, Brazil; Federal University of Sao Paulo, Brazil; University of Sao Paulo, Brazil

4:05PM **Segmented Pairwise Distance for Time Series with Large Discontinuities [#20350]**
Jiabo He, Sarah Erfani, Sudanthi Wijewickrema, Stephen O'Leary and Kotagiri Ramamohanarao
University of Melbourne, Australia

4:25PM **Deep Sequence Labelling Model for Information Extraction in Micro Learning Service [#20701]**
Jiayin Lin, Zhexuan Zhou, Geng Sun, Jun Shen, David Pritchard, Tingru Cui, Dongming Xu, Li Li and Ghassan Beydoun
University of Wollongong, Australia; Massachusetts Institute of Technology, United States; University of Melbourne, Australia; The University of Queensland, Australia; Southwest University, China; University of Technology Sydney, Australia

Plenary Poster Session I-P25: Deep Learning
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Poster Room 1, Chair: Wei-Chang Yeh

P4901 **Locality Sensitive Batching for Triplet Networks [#21343]**
Kyle Martin, Nirmalie Wiratunga and Sadiq Sani
Robert Gordon University, United Kingdom; BT, United Kingdom

P4902 **Deep Learning for Text Detection and Recognition in Complex Engineering Diagrams [#21454]**
Laura Jamieson, Carlos Francisco Moreno-Garcia and Eyad Elyan
Robert Gordon University, United Kingdom

P4903 **Budgeted Subset Selection for Fine-tuning Deep Learning Architectures in Resource-Constrained Applications [#21695]**
Subhankar Banerjee and Shayok Chakraborty
Florida State University, United States

P4904 **I didn't mean what I wrote! Exploring Multimodality for Sarcasm Detection [#21721]**
Suyash Sangwan, Md Shad Akhtar, Pranati Behera and Asif Ekbal
IIT Patna, India; IIIT Delhi, India

P4905 **Fast Local Attack: Generating Local Adversarial Examples for Object Detectors [#21853]**
Quanyu Liao, Xin Wang, Bin Kong, Siwei Lyu, Youbing Yin, Qi Song and Xi Wu
Chengdu University of Information Technology, China; CuraCloud Corp, United States; SUNY Albany, United States

P4906 **Maximum a Posteriori on a Submanifold: a General Image Restoration Method with GAN [#21872]**
Fangzhou Luo and Xiaolin Wu
McMaster University, Canada

P4907 **Recurrent Neural Architecture Search based on Randomness-Enhanced Tabu Algorithm [#20625]**
Kai Hu, Shuo Tian, Shasha Guo, Nan Li, Li Luo and Lei Wang
National University of Defense Technology, Changsha, China, China

P4908 **SkipConv: Skip Convolution for Computationally Efficient Deep CNNs [#20080]**
Pravendra Singh and Vinay P. Namboodiri
Indian Institute of Technology Kanpur, India

P4909 **MRobust: A Method for Robustness against Adversarial Attacks on Deep Neural Networks [#20659]**
Yi-Ling Liu and Alessio Lomuscio
Imperial College London, Great Britain

P4910 **Question Answering over Knowledge Base using Language Model Embeddings [#21524]**
Sai Sharath Japa and Banafsheh Rekabdar
Southern Illinois University, Carbondale, United States

P4911 **IO-aware Factorization Machine for User Response Prediction [#20484]**
Zhenhao Hu, Chao Peng, Cheng He and Haibin Cai
East China Normal University, China

P4912 **Mutual Information Maximization in Graph Neural Networks [#20616]**
Xinhan Di, Pengqian Yu, Rui Bu and Mingchao Sun
Technique Center, Ihome Corporation, China; IBM Research, Singapore; Alibaba Inc., China; Shandong University, China

P4913 **Diversity in Neural Architecture Search [#20539]**
Wenzheng Hu, Mingyang Li, Changhe Yuan, Changshui Zhang and Jianqiang Wang
Tsinghua University, China; City University New York Queens College, United States

P4914 **Assessing the Reliability of Visual Explanations of Deep Models with Adversarial Perturbations [#20426]**
Dan Valle, Tiago Pimentel and Adriano Veloso
Wildlife Studios, Brazil; UFMG, Brazil

P4915 **Offshore Oil Slicks Detection From SAR ImagesThrough The Mask-RCNN Deep Learning Model [#21575]**
Emna Amri, Alexandre Benoit, Bolon Bolon, Veronique Migebielle, Bruno Conche and Georges Oppenheim
LISTIC laboratory,USMB, Total Company, France; LISTIC laboratory,USMB, France; Total company, France; University of Paris-Est, France

P4916 **Generating High-Fidelity Images with Disentangled Adversarial VAEs and Structure-Aware Loss [#21683]**
Habibeh Naderi, Behrouz Haji Soleimani and Stan Matwin
Dalhousie University, Canada

P4917 **Transformer Decoder Based Reinforcement Learning Approach for Conversational Response Generation [#21758]**
Farshid Faal, Jia Yuan Yu and Ketra Schmitt
Concordia University, Canada

P4918 **NASABN: A Neural Architecture Search Framework for Attention-Based Networks [#20308]**
Kun Jing, Jungang Xu and Hui Xu
University of Chinese Academy of Sciences, China; Zugeng Technology, China

P4919 **The benefits of synthetic data for action categorization [#20647]**
Mohamad Ballout, Mohammad Tuqan, Daniel Asmar, Elie Shammas and George Sakr
American University of Beirut, Lebanon; University Saint-Joseph of Beirut, Lebanon

P4920 **Improving k-Means Clustering Performance with Disentangled Internal Representations [#20999]**
Abien Fred Agarap and Arnulfo Azcarraga
De La Salle University, Philippines

Plenary Poster Session I-P26: Neurocognitive, visual and auditory systems
Friday, July 24, 2:45PM-4:45PM, Room: IJCNN Poster Room 2, Chair: Ashraf Abdelbar

P5101 **PsychFM: Predicting your next gamble [#21460]**
Prakash Rajan and Krishna Miyapuram
Indian Institute of Technology, Gandhinagar, India

P5102 **Classifying Oscillatory Signatures of Expert vs NonExpert Meditators [#20810]**
Pankaj Pandey and Krishna Prasad Miyapuram
Indian Institute of Technology Gandhinagar, India

P5103 **Working-memory prefrontal model for cognitive flexibility in task-switching and selection [#21649]**
Julien Abrossimoff, Alexandre Pitti and Philippe Gaussier
ETIS UMR 8051 CY University, ENSEA, CNRS, France

P5104 A unified framework for the application and evaluation of different methods for neural parameter optimization [#21377]

Mate Mohacsi, Mark Patrik Torok, Sara Saray and Szabolcs Kali

Institute of Experimental Medicine Faculty of Information Technology and Bionics, Pazmany Peter Catholic University, Hungary; Institute of Experimental Medicine, Hungary

P5105 Towards Personalized Aesthetic Image Caption [#21226]

Kun Xiong, Liu Jiang, Xuan Dang, Guolong Wang, Wenwen Ye and Zheng Qin

Tsinghua University, China

P5106 Augmented Behavioral Cloning from Observation [#21001]

Juarez Monteiro, Nathan Gavenski, Roger Granada, Felipe Meneguzzi and Rodrigo Barros

Pontifical Catholic University of Rio Grande do Sul, Brazil

P5107 Brain Melody Informatics: Analysing Effects of Music on Brainwave Patterns [#20583]

Jessica Sharmin Rahman, Tom Gedeon, Sabrina Caldwell and Richard Jones

The Australian National University, Australia

P5108 Parallel Knowledge Transfer in Multi-Agent Reinforcement Learning [#21477]

Yongyuan Liang and Bangwei Li

Carnegie Mellon University, United States; Sun Yat-sen University, China

P5109 Weakly Supervised Object Localization using Self-Paced Pyramid Adversarial Learning [#20357]

Fucheng Pan, BeiLei Bian, BinXu Wang, YuePing Yang and XiaoMing Ju

East China Normal University, China; NingBo Electric Power Company, China

P5110 A Novel Strategy for Multi-Objective Tracking Framework based on Semi-online Mechanism [#20855]

Jin Yanming, Liu Longjun, Zhang Yizhuo, Sun Hongbin and Zheng Nanning

College of Artificial Intelligence, Xi'an Jiaotong Univerisity, China

P5111 SPSN: Seed Point Selection Network in Point Cloud Instance Segmentation [#21806]

Sun Fei, Xu Yangjie and Sun Weidong

Shenzhen Institutes of Advanced Technology, CAS, China; University of Defense Technology, China

P5112 pcIRM: Complex Ideal Ratio Masking for Speaker-Independent Monaural Source Separation with Utterance Permutation Invariant Training [#20732]

Zhang Wen, Li Xiaoyong, Zhou Aolong, Ren Kaijun and Song Junqiang

National University of Defense Technology, China

P5113 Deep Neural Network Driven Binaural Audio Visual Speech Separation [#21981]

Mandar Gogate, Kia Dashtipour, Peter Bell and Amir Hussain

Edinburgh Napier University, United Kingdom; University of Edinburgh, United Kingdom

P5114 Synthetic Sensor Data for Human Activity Recognition [#21545]

Fayez Alharbi, Jamie A Ward and Lahcen Ouarbya

Student, United Kingdom; Lecturer, United Kingdom

P5115 Conditioning Autoencoder Latent Spaces for Real-Time Timbre Interpolation and Synthesis [#20664]

Joseph Colonel and Sam Keene

Queen Mary University of London, United Kingdom; The Cooper Union for the Advancement of Science and Art, United States

Session I-R40: Spiking Neural Networks
Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Room 1, Chair: Maryam Parsa, Catherine Schuman

5:00PM **Self-regulated Learning Algorithm for Distributed Coding Based Spiking Neural Classifier [#20877]**
Pranav Machingal, Mohammed Thousif, Shirin Dora and Suresh Sundaram
Indian Institute of Science, India; Ulster University, United Kingdom

5:20PM **Learning from Sparse and Delayed Rewards with a Multilayer Spiking Neural Network [#20867]**
Sergio Chevtchenko and Teresa Ludermir
UFPE, Brazil

5:40PM **A Reservoir-based Convolutional Spiking Neural Network for Gesture Recognition from DVS Input [#21114]**
Arun M. George, Dighanchal Banerjee, Sounak Dey, Arijit Mukherjee and Purushothaman Balamurali
TCS Research & Innovation, India

6:00PM **STDP Training of Hierarchical Spike Timing Model of Visual Information Processing [#21511]**
Petia Koprinkova-Hristova, Simona Nedelcheva, Nadejda Bocheva, Radoslava Kraleva, Velin Kralev, Miroslava Stefanova and Bilyana Genova
IICT - BAS, Bulgaria; INB - BAS, Bulgaria; SWU, Bulgaria

6:20PM **Resilience and Robustness of Spiking Neural Networks for Neuromorphic Systems [#20601]**
Catherine Schuman, J. Parker Mitchell, J. Travis Johnston, Maryam Parsa, Bill Kay, Prasanna Date and Robert Patton
Oak Ridge National Laboratory, United States; Purdue University, United States

6:40PM **Hyperparameter Optimization in Binary Communication Networks for Neuromorphic Deployment [#20980]**
Maryam Parsa, Catherine D. Schuman, Prasanna Date, Derek C. Rose, Bill Kay, J. Parker Mitchell, Steven R. Young, Ryan Dellana, William Severa, Thomas E. Potok and Kaushik Roy
Purdue University, United States; Oak Ridge National Laboratory, United States; Sandia National Laboratories, United States

Special Session I-SS18B: Explainable Computational/Artificial Intelligence
Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Room 2, Chair: Julio Valdes

5:00PM **Ontology-based Interpretable Machine Learning for Textual Data [#20461]**
Lai Phung, Phan NhatHai, Hu Han, Badeti Anuja, Newman David and Dou Dejing
New Jersey Institute of Technology, United States; Wells Fargo Bank, United States; University of Oregon, United States

5:20PM **EXPLAN: Explaining Black-box Classifiers using Adaptive Neighborhood Generation [#20681]**
Peyman Rasouli and Ingrid Chieh Yu
Department of Informatics, University of Oslo, Norway

5:40PM **Interpreting Deep Models through the Lens of Data [#21318]**
Dominique Mercier, Shoaib Ahmed Siddiqui, Andreas Dengel and Sheraz Ahmed
German Research Center for Artificial Intelligence - DFKI, Germany; German Research Center for Artificial Intelligence (DFKI), Germany

6:00PM **Conceptual Explanations of Neural Network Prediction for Time Series [#21331]**

Ferdinand Kuesters, Peter Schichtel, Sheraz Ahmed and Andreas Dengel

IAV GmbH, Germany; German Research Center for Artificial Intelligence (DFKI), Germany

6:20PM **Reliable Local Explanations for Machine Listening [#21620]**

Saumitra Mishra, Emmanouil Benetos, Bob L.T. Sturm and Simon Dixon

The Alan Turing Institute, United Kingdom; Queen Mary University of London, United Kingdom; KTH Royal Institute of Technology, Sweden

6:40PM **Interpreting response to TMZ therapy in murine GL261 glioblastoma by combining Radiomics, Convex-NMF and feature selection in MRI/MRSI data analysis [#21077]**

Luis Miguel Nunez, Margarita Julia-Sape, Enrique Romero, Carles Arus, Alfredo Vellido and Ana Paula Candiota

Centro de Investigacion Biomedica en Red, Bioingenieria, Biomateriales y Nanomedicina (CIBER-BBN), Spain; CIBER-BBN, Universitat Autonoma de Barcelona, Institut de Biotecnologia i Biomedicina, Spain; IDEAI Research Center, Universitat Politecnica de Catalunya, Spain; Universitat Autonoma de Barcelona, CIBER-BBN, Institut de Biotecnologia i Biomedicina, Spain

Special Session I-SS52: Methods and Applications of Deep Reinforcement Learning to Autonomous Systems

Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Room 3, Chair: Thanh Thi Nguyen

5:00PM **Beyond-Visual-Range Air Combat Tactics Auto-Generation by Reinforcement Learning [#20179]**

Haiyin Piao, Zhixiao Sun, Guanglei Meng, Hechang Chen, Bohao Qu, Kuijun Lang, Yang Sun, Shengqi Yang and Xuanqi Peng

Northwestern Polytechnical University, China; Shenyang Aerospace University, China; Jilin University, China; SADRI Institute, China

5:20PM **Accelerating Reinforcement Learning for Reaching Using Continuous Curriculum Learning [#20724]**

Luo Sha, Kasaei Hamidreza and Schomaker Lambert

University of Groningen, Netherlands

5:40PM **Multi-Agent Reinforcement Learning for Problems with Combined Individual and Team Reward [#21258]**

Hassam ullah Sheikh and Ladislau Boloni

University of Central Florida, United States

6:00PM **Transfer Learning based Task-oriented Dialogue Policy for Multiple Domains using Hierarchical Reinforcement Learning [#21261]**

Tulika Saha, Sriparna Saha and Pushpak Bhattacharyya

IIT Patna, India

6:20PM **Robust Reinforcement Learning-based Autonomous Driving Agent for Simulation and Real World [#21330]**

Almasi Peter, Moni Robert and Gyires-Toth Balint

Budapest University of Technology and Economics, Hungary

6:40PM **Multi-Agent Connected Autonomous Driving using Deep Reinforcement Learning [#20554]**

Praveen Palanisamy

Microsoft, United States

Special Session I-SS30: Robustness and Trustworthiness in Deep Learning

Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Room 4, Chair: Ghulam Rasool

5:00PM **Detecting Adversarial Audio via Activation Quantization Error [#21458]**
Heng Liu and Gregory Ditzler
University of Arizona, United States

5:20PM **Controlled False Negative Reduction of Minority Classes in Semantic Segmentation [#20856]**
Robin Chan, Matthias Rottmann, Fabian Hueger, Peter Schlicht and Hanno Gottschalk
University of Wuppertal, Germany; Volkswagen Group Innovation, Germany

5:40PM **NeuroAttack: Undermining Spiking Neural Networks Security through Externally Triggered Bit-Flips [#21626]**
Valerio Venceslai, Alberto Marchisio, Ihsen Alouani, Maurizio Martina and Muhammad Shafique
Politecnico di Torino, Italy; TU Wien, Austria; Polytechnic University Hauts-de-France, France

6:00PM **Bayesian Neural Networks Uncertainty Quantification with Cubature Rules [#20919]**
Peng Wang, Renke He, Qibin Zhang, Jikai Wang, Lyudmila Mihaylova and Nidhal C. Bouaynaya
The University of Sheffield, United Kingdom; Air Force Engineering University, China; The 32nd Research Institute of CETC, China; University of Science and Technology of China, China; Rowan University, United Kingdom

6:20PM **Enhancing Resilience of Deep Learning Networks By Means of Transferable Adversaries [#21250]**
Moritz Vinzent Seiler, Heike Trautmann and Pascal Kerschke
University of Muenster, Germany

6:40PM **Evaluating Speech Enhancement Methods through Deep Speech Recognition [#21286]**
Shamoon Siddiqui, Ghulam Rasool, Ravi Ramachandran and Nidhal Bouaynaya
Rowan University, United States

Session I-R41:
Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Room 5, Chair: Weizhong Yan

5:00PM **A Comparison of GANs-Based Approaches for Combustor System Fault Detection [#20884]**
Rui Xu and Weizhong Yan
GE Research, United States

5:20PM **A neural classifier to evaluate the role of image resolution in the perception of color differences [#21572]**
Beatrice Lazzerini and Francesco Pistolesi
University of Pisa, Italy

5:40PM **Multiple Object Detection of Workpieces Based on Fusion of Deep Learning and Image Processing* [#20128]**
Yi Lei, Xifan Yao, Wocheng Chen, Junming Zhang, Jorn Mehnen and Erfu Yang
School of Mechanical and Automotive Engineering, South China University of Technology, China; Faculty of Engineering, University of Strathclyde, United Kingdom

6:00PM **Rolling Bearing Fault Diagnosis under Variable Working Conditions Based on Joint Distribution Adaptation and SVM [#20650]**
Li Ming, Sun Zhao-Hui, He Weihui, Qiu Siqi and Liu Bo
Shanghai Jiao Tong University, China

6:20PM **A self-organizing modular neural network for nonlinear system modeling [#20310]**
Xi Meng, Limin Quan and Junfei Qiao
Beijing University of Technology, China

6:40PM **An Innovative Approach of Textile Fabrics Identification from Mobile Images using Computer Vision based on Deep Transfer Learning [#21776]**

Antonio Carlos da Silva Barros, Elene Firmeza Ohata, Suane Pires P. da Silva, Jefferson Silva Almeida and Pedro Pedrosa Reboucas Filho

Unilab, Brazil; UFC, Brazil; IFCE, Brazil

Session I-R42: Mixture models

Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Room 6, Chair: Min Gao

5:00PM **Multi-label learning for dynamic model type recommendation [#20192]**

Mariana A. Souza, Robert Sabourin, George D. C. Cavalcanti and Rafael M. O. Cruz

University of Quebec, Canada; Federal University of Pernambuco, Brazil

5:20PM **SAG-VAE: End-to-end Joint Inference of Data Representations and Feature Relations [#21873]**

Wang Chen, Deng Chengyuan and Ivanov Vladimir

Rutgers University, United States

5:40PM **3D Point Cloud Feature Explanations Using Gradient-Based Methods [#20721]**

Ananya Gupta, Simon Watson and Hujun Yin

The University of Manchester, United Kingdom

6:00PM **LSHWE: Improving Similarity-Based Word Embedding with Locality Sensitive Hashing for Cyberbullying Detection [#21731]**

Zehua Zhao, Min Gao, Fengji Luo, Yi Zhang and Qingyu Xiong

Chongqing University, China; The University of Sydney, Australia

Session I-R43:

Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Room 7, Chair: Ivo Bukovsky

5:00PM **FGRec: A Fine-Grained Point-of-Interest Recommendation Framework by Capturing Intrinsic Influences [#20390]**

Yijun Su, Jia-Dong Zhang, Xiang Li, Daren Zha, Ji Xiang, Wei Tang and Neng Gao

Institute of Information Engineering, Chinese Academy of Sciences, China; Deparment of Computer Science, City University of Hong Kong, China; Institute of Information Engineering, Chinese Academy of Sciences, Hong Kong

5:20PM **Unified Graph Embedding-Based Anomalous Edge Detection [#20720]**

Linshu Ouyang, Yongzheng Zhang and Yipeng Wang

Institute of Information Engineering, Chinese Academy of Sciences, Beijing, China, China

5:40PM **User Alignment with Jumping Seed Alignment Information Propagation [#21209]**

Xiang Li, Yijun Su, Neng Gao, Ji Xiang and Yuewu Wang

Chinese Academy of Sciences, China

6:00PM **Joint Entity Linking and Relation Extraction with Neural Networks for Knowledge Base Population [#20043]**

Zhenyu Zhang, Xiaobo Shu, Tingwen Liu, Zheng Fang and Quangang Li

Institute of Information Engineering, Chinese Academy of Sciences, China

6:20PM **Similitude Attentive Relation Network for Click-Through Rate Prediction [#21344]**

Hangyu Deng, Yulong Wang, Jia Luo and Jinglu Hu

Graduate School of Information, Product and System, Waseda University, China; Graduate School of Information, Product and System, Waseda University, Japan

Plenary Poster Session I-P27: Deep Learning
Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Poster Room 1, Chair: Siamak Mehrkanoon

P5301 Joint Progressive Knowledge Distillation and Unsupervised Domain Adaptation [#21689]
Le Thanh Nguyen-Meidine, Eric Granger, Madhu Kiran, Jose Dolz and Louis-Antoine Blais-Morin
Ecole de Technologie Superieure, Canada; Genetec Inc, Canada

P5302 Object Detection by Integrating scene-level semantic information and Border Regression Reinforcement [#20978]
Yu Quan, Zhixin Li, Canlong Zhang and Huifang Ma
Guangxi Normal University, China; Northwest Normal University, China

P5303 Latent space decomposition into task-specific and domain-specific subspaces for domain adaptation [#21220]
Takaya Ueda and Ikuko Nishikawa
Ritsumeikan University, Japan

P5304 Multi-Partition Feature Alignment Network for Unsupervised Domain Adaptation [#20130]
Sanatan Sukhija, Srenivas Varadarajan, Narayanan Chatapuram Krishnan and Sujit Rai
Indian Institute of Technology Ropar, India; Intel, India

P5305 A New Three-stage Curriculum Learning Approach for Deep Network Based Liver Tumor Segmentation [#20798]
Huiyu Li, Xiabi Liu, Said Boumaraf, Weihua Liu, Xiaopeng Gong and Xiaohong Ma
Beijing Institute of Technology, China; National Cancer Center, China

P5306 Toward Tag-free Aspect Based Sentiment Analysis: A Multiple Attention Network Approach [#21510]
Yao Qiang, Xin Li and Dongxiao Zhu
Wayne State University, United States

P5307 HTMLPhish: Enabling Phishing Web Page Detection by Applying Deep Learning Techniques on HTML Analysis [#21593]
Chidimma Opara, Bo Wei and Yingke Chen
Teesside University, United Kingdom; Northumbria University, United Kingdom

P5308 Improving Abstractive Summarization with Iterative Representation [#20419]
Jinpeng Li, Chuang Zhang, Xiaojun Chen, Yanan Cao and Ruipeng Jia
Institute of Information Engineering, Chinese Academy of Sciences. School of Cyber Security, University of Chinese Academy of Sciencesity, University of Chinese Academy of Sciences, China; Institute of Information Engineering, Chinese Academy of Sciences, China

P5309 Investigating Deep Convolution Conditional GANs for Electrocardiogram Generation [#21433]
Deepankar Nankani and Rashmi Dutta Baruah
Indian Institute of Technology Guwahati, India, India

P5310 Multi-STGCnet: A Graph Convolution Based Spatial-Temporal Framework for Subway Passenger Flow Forecasting [#20114]
Ye Jiexia, Zhao Juanjuan, Xu Chengzhong and Ye Kejiang
Chinese Academy of Sciences, China; University of Macau, Macau

P5311 Sig-R2ResNet: Residual Network with Signal Processing-refined Residual Mapping, Auto-tuned L1-Regularization with Modified Adam Optimizer for Time Series Classification [#21085]
Arijit Ukil, Soma Bandyopadhyay and Arpan Pal
Tata Consultancy Services, India

P5312 **Double Attention for Pathology Image Diagnosis Network with Visual Interpretability [#20589]**
Cheng Hao, Wu Kaijie, Ma Kai, Tian Jie, Xu Rui, Gu Chaochen and Guan Xinping
Shanghai Jiao Tong University, China

P5313 **Multitask Adversarial Learning for Chinese Font Style Transfer [#20355]**
Lei Wu, Xi Chen, Lei Meng and Xiangxu Meng
Shandong University, China; National University of Singapore, Singapore

P5314 **PEDA 376K: A Novel Dataset for Deep-learning Based Porn-detectors [#21761]**
Danilo Coura Moreira, Eanes Torres Pereira and Marco Alvarez
Federal University of Campina Grande (UFCG), Brazil; University of Rhode Island, United States

P5315 **Identifying Optimism and Pessimism in Twitter Messages Using XLNet and Deep Consensus [#20436]**
Ali Alshahrani, Meysam Ghaffari, Kobra Amirizirtol and Xiuwen Liu
Florida State University, United States

P5316 **Code Pointer Network for Binary Function Scope Identification [#21012]**
Van Nguyen, Trung Le, Tue Le, Khanh Nguyen, Olivier De Vel, Paul Montague and Dinh Phung
Monash University, Australia; AI Research Lab, Trusting Social, Australia; Defence Science and Technology Group, Australia

P5317 **Interpretability vs. Complexity: The Friction in Deep Neural Networks [#21553]**
Jose Pereira Amorim, Pedro Henriques Abreu, Mauricio Reyes and Joao Santos
IPO-Porto Research Centre, Portugal; CISUC, Department of Informatics Engineering, Portugal; University of Bern, Switzerland

P5318 **Multiscale Adaptation Fusion Networks for Depth Completion [#21265]**
Yongchi Zhang, Ping Wei, Huan Li and Nanning Zheng
Xi'an Jiaotong University, China

P5319 **Reinforced Sample Re-weighting for Pedestrian Attribute Recognition [#20766]**
Yuan Liu and Zhiping Lin
Nanyang Technological University, Singapore

Plenary Poster Session I-P28: Attention, Memory, Spatial Cognition, computational neuroscience, neurodynamics
Friday, July 24, 5:00PM-7:00PM, Room: IJCNN Poster Room 2, Chair: Ko Sakai

P5501 **Cascade modeling with multihead self-attention [#20579]**
Chaochao Liu, Wenjun Wang, Pengfei Jiao, Xue Chen and Yueheng Sun
Tianjin University, China

P5502 **Object Detection with Extended Attention andSpatial Information [#20816]**
Yingda Guan, Zuochang Ye and Yan Wang
Tsinghua University, China

P5503 **Image Co-segmentation with Multi-Scale Dual-Cross Correlation Network [#20531]**
Yushuo Li, Yuanpei Liu, Xiaopeng Gong and Xiabi Liu
School of Computer Science and Technology, Beijing Institute of Technology, China

P5504 **Multi-Object Tracking Via Multi-Attention [#20532]**
Xianrui Wang, Hefei Ling, Jiazhong Chen and Ping Li
Huazhong University of Science and Technology, China

P5505 Black-Box Saliency Map Generation Using Bayesian Optimisation [#20651]

Mamuku Mokuwe, Michael Burke and Anna Sergeevna Bosman

Council for Scientific and Industrial Research, South Africa; University of Edinburgh, Scotland; University of Pretoria, South Africa

P5506 Heterogeneous Multi-Modal Sensor Fusion with Hybrid Attention for Exercise Recognition [#21578]

Anjana Wijekoon, Nirmalie Wiratunga and Kay Cooper

Robert Gordon University, United Kingdom

P5507 Forecasting Photovoltaic Power Production using a Deep Learning Sequence to Sequence Model with Attention [#20459]

Elizaveta Kharlova, Daniel May and Petr Musilek

University of Alberta, Canada

P5508 Attention-based Deep Learning Model for Text Readability Evaluation [#20465]

Yuxuan Sun, Keying Chen, Lin Sun and Chenlu Hu

Zhejiang University City College, China

P5509 M3LA: A Novel Approach Based on Encoder-Decoder with Attention Framework for Multi-modal Multi-label Learning [#20715]

Yinlong Zhu and Yi Zhang

Nanjing University, China

P5510 A Preliminary Study of Fusion ARTs with Adaptively Information Intensity Attenuation Controlling [#21874]

Wenxuan Zhu, Yaqing Hou, Qiang Zhang, Hongwei Ge, Xin Yang, Liang Feng and Xinghua Qu

Dalian University of Technology, China; Chongqing University, China; Nanyang Technological University, Singapore

P5511 CNN Based Perception System for Collision Avoidance in Mobile Robots using Stereo Vision [#21647]

Edgar Macias-Garcia, Deysy Galeana-Perez and Eduardo Bayro-Corrochano

Centro de Investigacion y Estudios Avanzados del Instituto Politecnico Nacional, Mexico

P5512 Group-patch based classification and asymptotic predicting imbalanced neuron spikes [#21453]

Mingli Zhang, Dongsheng Xiao, Timothy H. Murphy, Jean-Baptiste Poline and Alan Evans

Mcgill University, Canada; University of British Columbia, Canada

P5513 Developing Constrained Neural Units Over Time [#20566]

Alessandro Betti, Marco Gori, Simone Marullo and Stefano Melacci

University of Siena, Italy

P5514 n-Oscillator Neural Network based Efficient Cost Function for n-city Traveling Salesman Problem [#21726]

Shruti Landge, Vivek Saraswat, Srisht Fateh Singh and Udayan Ganguly

Indian Institute of Technology Indore, India; Indian Institute of Technology Bombay, India

P5515 Analysis of the Dynamic Oscillatory Process of a Neural-type Cell (NTC) and Its Input Voltage Bounds [#20624]

Zhengqing Wu and Robert Newcomb

Xi'an Jiaotong Univeristy, China; University of Maryland, College Park, United States

P5516 EEG-based brain-computer interface for alpha speed control of a small robot using the MUSE headband [#21254]

Cedric Simar, Mathieu Petieau, Anita Cebolla, Axelle Leroy, Gianluca Bontempi and Cheron Guy

Universite Libre de Bruxelles, Belgium

Session I-R44: Spiking and Other NN
Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Room 1, Chair: Krishna Reddy Kesari, Priyadarshini Panda

7:15PM **Transfer Learning by Weighting Convolution [#21509]**
Stephane Ayache, Ronan Sicre and Thierry Artieres
Qarma/LIS Aix-Marseille University, France; Qarma/LIS Ecole Centrale de Marseille, France

7:35PM **Differential Morphological Profile Neural Network for Object Detection in Overhead Imagery [#20195]**
Grant Scott, Alex Hurt, Alex Yang, Muhammad Islam, Derek Anderson and Curt Davis
University of Missouri, United States

7:55PM **Local Propagation in Constraint-based Neural Networks [#20586]**
Giuseppe Marra, Matteo Tiezzi, Stefano Melacci, Alessandro Betti, Marco Maggini and Marco Gori
University of Florence, Italy; University of Siena, Italy

8:15PM **Is Spiking Secure? A Comparative Study on the Security Vulnerabilities of Spiking and Deep Neural Networks [#21375]**
Alberto Marchisio, Giorgio Nanfa, Faiq Khalid, Muhammad Abdullah Hanif, Maurizio Martina and Muhammad Shafique
TU Wien, Austria; Politecnico di Torino, Italy

8:35PM **Robustness to Noisy Synaptic Weights in Spiking Neural Networks [#21645]**
Chen Li, Runze Chen, Christoforos Moutafis and Steve Furber
The University of Manchester, Great Britain

8:55PM **Enabling Homeostasis using Temporal Decay Mechanisms in Spiking CNNs Trained with Unsupervised Spike Timing Dependent Plasticity [#21813]**
Krishna Reddy Kesari, Priyadarshini Panda, Gopalakrishnan Srinivasan and Kaushik Roy
Purdue University, United States; Yale University, United States

Special Session I-SS25B: Machine Learning and Deep Learning Methods applied to Vision and Robotics
Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Room 2, Chair: Andres Fuster Guillo, Jorge Azorin-Lopez

7:15PM **Improving Deep Learning Approaches for Human Activity Recognition based on Natural Language Processing of Action Labels [#20301]**
Konstantinos Bacharidis and Antonis Argyros
University of Crete, Foundation for Research and Technology - Hellas (FORTH), Greece

7:35PM **Developmental Learning of Value Functions in a Motivational System for Cognitive Robotics [#20596]**
Alejandro Romero, Francisco Bellas, Abraham Prieto and Richard J. Duro
University of A Coruna, Spain

7:55PM **Using a 3D CNN for Rejecting False Positives on Pedestrian Detection [#20730]**
Francisco Gomez-Donoso, Edmanuel Cruz, Miguel Cazorla, Stewart Worrall and Eduardo Nebot
University Institute for Computer Research, Spain; Australian Centre for Field Robotics, Australia

8:15PM **An Experiment in Morphological Development for Learning ANN Based Controllers [#20835]**
Martin Naya-Varela, Andres Faina and Richard J. Duro
Universidade da Coruna, Spain; IT University of Copenhagen, Denmark

8:35PM **Event Recognition with Automatic Album Detection based on Sequential Grouping of Confidence Scores and Neural Attention [#21103]**

Andrey Savchenko

National Research University Higher School of Economics, Russia

8:55PM **Deep Learning Architecture for Group Activity Recognition using Description of Local Motions [#21678]**

Luis Felipe Borja-Borja, Jorge Azorin-Lopez, Marcelo Saval-Calvo and Andres Fuster-Guillo

Universidad Central del Ecuador, Ecuador; Universidad de Alicante, Spain

Special Session I-SS54: Online Intelligence and Trust Computation in Large-Scale Dynamic Networks

Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Room 3, Chair: Richard Duro

7:15PM **Higher-Order Heterogeneous Graph Convolutional Network Based on Meta-Paths [#20272]**

Wanting Zhao, Hao Xu, Wenzhuo Huang and Jinkui Xie

School of Computer Science and Technology, East China Normal University, China

7:35PM **Heterogeneous Graph Attention Networks for Early Detection of Rumors on Twitter [#20283]**

Qi Huang, Junshuai Yu, Jia Wu and Bin Wang

Institute of Information Engineering, Chinese Academy of Sciences, China; Department of Computing, Macquarie University, Australia; Xiaomi AI Lab, China

7:55PM **Text Classification using Triplet Capsule Networks [#20319]**

Yujia Wu, Jing Li, Chen Vincent, Jun Chang, Zhiquan Ding and Zhi Wang

School of Computer Science, Wuhan University, China; Pembroke College, Oxford University, Oxford OX1 1DW, UK, United Kingdom; Sichuan Institute of Aerospace Electronic Equipment, China

8:15PM **Support Correlation Filters Tracking using Mask Matrix [#20429]**

Zhenyang Su, Jing Li, Zhiquan Ding, Tianqi Qin and Yafu Xiao

Wuhan University, China; Sichuan Institute of Aerospace Electronic Equipment, China

8:35PM **HeteGraph: A Convolutional Framework for Graph Learning in Recommender Systems [#21014]**

Dai Hoang Tran, Abdulwahab Aljubairy, Munazza Zaib, Quan Z. Sheng, Wei Emma Zhang, Nguyen H. Tran and Khoa L.D. Nguyen

Macquarie University, Australia; Department of Computing, Macquarie University Sydney, Australia; The University of Adelaide, Australia; The University of Sydney, Australia; Data61, CSIRO, Australia

8:55PM **TRec: Sequential Recommender Based On Latent Item Trend Information [#21716]**

Ye Tao, Can Wang, Lina Yao, Weimin Li and Yonghong Yu

Griffith University, Australia; University of New South Wales, Australia; Shanghai University, China; Nanjing University of Posts and Telecommunications, China

Special Session I-SS33A: Computationally Intelligent Methods in Neural Data Processing

Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Room 4, Chair: Mufti Mahmud

7:15PM **A 3D Convolutional Neural Network for Emotion Recognition based on EEG Signals [#20801]**

Yuxuan Zhao, Jin Yang, Jinlong Lin, Dunshan Yu and Xixin Cao

Institute of Automation, Chinese Academy of Sciences, China; School of Software and Microelectronics, Peking University, China

7:35PM **Decoding Speech Evoked Jaw Motion from Non-invasive Neuromagnetic Oscillations [#21823]**

Debadatta Dash, Paul Ferrari and Jun Wang

The University of Texas at Austin, United States

7:55PM **Time sensitivity and self-organisation in Multi-recurrent Neural Networks. [#20634]**

Oluwatamilore Orojo, Jon Tepper, T.M. McGinnity and Mufti Mahmud

Nottingham Trent University, United Kingdom; Perceptronix Ltd, United Kingdom; Intelligent Systems Research Centre, United Kingdom

8:15PM **Deep Learning based Prediction of EEG Motor Imagery of Stroke Patients' for Neuro-Rehabilitation Application [#20926]**

Haider Raza, Anirban Chowdhury and Saugat Bhattacharyya

School of Computer Science and Electronics Engineering, University of Essex, England; School of Computing, Eng & Intel. Sys, Ulster University, Northern Ireland

8:35PM **A Long Short Term Memory Deep Learning Network for the Classification of Negative Emotions Using EEG Signals [#21520]**

Divya Acharya, Arpit Bhardwaj, Shivani Goel, Aditi Sakalle and Harshit Bhardwaj

Ph.D Research Scholar, India; Assistant Professor, India; Professor, India

8:55PM **Single-Trial EEG Classification with EEGNet and Neural Structured Learning for Improving BCI Performance [#21246]**

Haider Raza, Anirban Chowdhury, Saugat Bhattacharyya and Spyros Samothrakis

School of Computer Science and Electronics Engineering, University of Essex, England; Computing, Eng & Intel. Sys, Ulster University, Northern Ireland

Session I-R45:

Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Room 5, Chair: Olivier Caelen

7:15PM **Legal Document Classification: An Application to Law Area Prediction of Petitions to Public Prosecution Service [#20381]**

Mariana Y. Noguti, Eduardo Vellasques and Luiz S. Oliveira

MPPR, DInf/UFPR, Brazil; SAP SE, Germany; DInf/UFPR, Brazil

7:35PM **Automated Trading System for Stock Index Using LSTM Neural Networks and Risk Management [#21820]**

Thalita Silva, Audeliano Li and Edson Pamplona

Federal University of Itajuba, UNIFEI, Brazil

7:55PM **Answering Binary Causal Questions: A Transfer Learning Based Approach [#21008]**

Humayun Kayesh, Md. Saiful Islam, Junhu Wang, Shikha Anirban, A.S.M. Kayes and Paul Watters

Griffith University, Australia; La Trobe University, Australia

Session I-R46:

Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Room 6, Chair: David Brown

7:15PM **Exploring Clinical Time Series Forecasting with Meta-Features in Variational Recurrent Models [#20914]**

Sibghat Ullah, Zhao Xu, Hao Wang, Stefan Menzel, Bernhard Sendhoff and Thomas Back

Leiden Institute of Advanced Computer Science (LIACS),Leiden University, Netherlands; NEC Laboratories Europe GmbH, Germany; Sorbonne University, France; Honda Research Institute Europe GmbH, Germany

7:35PM **Towards Accurate Predictions and Causal `What-if' Analyses for Planning and Policy-making: A Case Study in Emergency Medical Services Demand [#20463]**
Kasun Bandara, Christoph Bergmeir, Sam Campbell, Debbie Scott and Dan Lubman
Monash University, Australia; Turning Point- Eastern Health Clinical School, Australia

7:55PM **Enhancing Music Recommendation with Social Media Content: an Attentive Multimodal Autoencoder Approach [#20750]**
Tiancheng Shen, Jia Jia, Yan Li, Hanjie Wang and Bo Chen
Tsinghua University, China; Tecent, China

8:15PM **Pseudo-Labeling for Small Lesion Detection on Diabetic Retinopathy Images [#20600]**
Qilei Chen, Ping Liu, Jing Ni, Yu Cao, Benyuan Liu and Honggang Zhang
The University of Massachusetts Lowell, United States; Department of Ophthalmology, The Second Xiangya Hospital, Central South University, China; The University of Massachusetts Boston, United States

8:35PM **MUNet: A Multi-scale U-Net Framework for Medical Image Segmentation [#21242]**
Wentao Zhang, Hao Cheng and Jun Gan
Department of Computer Science and Technology, Nanjing University, China

8:55PM **A Novel Sleep Stage Classification via Combination of Fast Representation Learning and Semantic-to-Signal Learning [#20018]**
Hongxin Xiang, Ting Zeng and Yun Yang
Yunnan University, China

Session I-R47:
Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Room 7, Chair: Alma Alanis

7:15PM **Forecasting Power Grid States for Regional Energy Markets with Deep Neural Networks [#21243]**
Yujiang He, Janosch Henze and Bernhard Sick
University of Kassel, Germany

7:35PM **A Data-driven Approach for Forecasting State Level Aggregated Solar Photovoltaic Power Production [#20778]**
Mashud Rana, Ashfaqur Rahman and Jiong Jin
Data61, CSIRO, Australia; Swinburne University of Technology, Australia

7:55PM **Forecasting Time Series for Electricity Consumption Data Using Dynamic Weight Ensemble Model [#20266]**
Cheng-Hsiang Hu and Yi-Ling Chen
National Taiwan University of Science and Technology, Taiwan

8:15PM **Temporal Convolutional Neural Networks for Solar Power Forecasting [#20726]**
Yang Lin, Irena Koprinska and Mashud Rana
School of Computer Science, University of Sydney, Sydney, Australia, Australia; Data61, CSIRO, Sydney, Australia, Australia

Plenary Poster Session I-P29: Mixture models, ensemble learning
Friday, July 24, 7:15PM-9:15PM, Room: IJCNN Poster Room 1, Chair: Ivanov Vladimir

P5701 **Diversity-Aware Weighted Majority Vote Classifier for Imbalanced Data [#21278]**
Anil Goyal and Jihed Khiari
NEC Laboratories Europe GmbH, Heidelberg, Germany

P5702 Learning Dynamic Weights for an Ensemble of Deep Models Applied to Medical Imaging Classification [#20226]

Andre G. C. Pacheco, Thomas Trappenberg and Renato A. Krohling

Federal University of Espirito Santo, Brazil; Dalhousie University, Canada

P5703 Solar Power Forecasting Based on Ensemble Learning Methods [#21619]

Naylene Fraccanabbia, Ramon Gomes da Silva, Matheus Henrique Dal Molin Ribeiro, Sinvaldo Rodrigues Moreno, Leandro dos Santos Coelho and Viviana Cocco Mariani

Pontifical Catholic University of Parana, Brazil; Federal Technological University of Parana and Pontifical Catholic University of Parana, Brazil; Federal University of Parana, Brazil; Pontifical Catholic University of Parana and Federal University of Parana, Brazil

P5704 Ensemble Methods for Solar Power Forecasting [#21106]

Zezhou Chen and Irena Koprinska

University of Sydney, Australia

P5705 Dynamic Multi-criteria Classifier Selection for Illegal Tapping Detection in Oil Pipelines [#20511]

Victor Henrique Alves Ribeiro, Pedro Henrique Domingues, Paulo Rodrigo Cavalin, Gilberto Reynoso-Meza, Helon Vicente Hultmann Ayala and Luis Fernando Alzuguir Azevedo

Pontifical Catholic University of Parana, Brazil; Pontifical Catholic University of Rio de Janeiro, Brazil; IBM Research, Brazil

P5706 Bayesian Stress Testing of Models in a Classification Hierarchy [#21180]

Bashar Awwad Shiekh Hasan and Kate Kelly

Caspian Learning, United Kingdom

P5707 Learning causal dependencies in large-variate time series [#20654]

Gianluca Bontempi

MLG, ULB, Universite Libre de Bruxelles, Belgium

P5708 Stein Variational Gradient Descent with Variance Reduction [#20779]

Nhan Dam, Trung Le, Viet Huynh and Dinh Phung

Monash University, Australia

P5709 Learning Filterbanks from Raw Waveform for Accent Classification [#21000]

Rashmi Kethireddy, Sudarsana Reddy Kadiri and Suryakanth V. Gangashetty

IIIT-Hyderabad, India; Aalto University, Finland

P5710 HDF: Hybrid Deep Features for Scene Image Representation [#20424]

Chiranjibi Sitaula, Yong Xiang, Anish Basnet, Sunil Aryal and Xuequan Lu

Deakin University, Australia; Ambition College, Nepal

P5711 Estimator Vectors: OOV Word Embeddings based on Subword and Context Clue Estimates [#21766]

Raj Patel and Carlotta Domeniconi

George Mason University, United States

P5712 Multi-label Feature Selection Method via Maximizing Correlation-based Criterion with Mutation Binary Bat Algorithm [#20063]

Yuanyuan Tao, Jun Li and Jianhua Xu

Nanjing Normal University, China

P5713 Modified Grey Wolf Optimizer based Maximum Entropy Clustering Algorithm [#20271]

Jia Cai, Guanglong Xu and Wenwen Ye

Guangdong University of Finance & Economics, China; Zhaoqing University, China

P5714 **Connection Sparsification and Orbit Stabilization of Dynamic Binary Neural Networks based on Multiobjective Evolutionary Algorithms [#20741]**

Tomoyuki Togawa and Toshimichi Saito

HOSEI University, Japan

P5715 **A Hybrid Paper Recommendation Method by Using Heterogeneous Graph and Metadata [#20748]**

Shi Hui, Ma Wei, Zhang XiaoLiang, Jiang JunYan, Chen ShuJuan and Liu YanBing

Institute of Information Engineering,Chinese Academy of Science;School of Cyber Security,University of Chinese Academy of Sciences, China; Institute of Information Engineering,Chinese Academy of Science, China; China cybersecurity review technology and certification center, China

P5716 **Neural Network Augmented Intelligent Iterative Learning Control for a Nonlinear System [#21666]**

Devi Lakshmidevinivas, Meryem Deniz and Balakrishnan S.N.

Missouri University of Science and Technology, United States

P5717 **Fusion of Feature Selection Methods for Improving Model Accuracy in the Milling Process Data Classification Problem [#20344]**

Maciej Kusy, Roman Zajdel, Jacek Kluska and Zabinski Tomasz

Rzeszow University of Technology, Poland

P5718 **Detection of Malicious SCADA Communications via Multi-Subspace Feature Selection [#21614]**

Ehsan Hallaji, Roozbeh Razavi-Far and Mehrdad Saif

University of Windsor, Canada

P5719 **A Light-Weight Crowdsourcing Aggregation in Privacy-Preserving Federated Learning System [#21641]**

Ke Zhang, Siu Ming Yiu and Lucas Chi Kwong Hui

The University of Hong Kong, Hong Kong; Hong Kong Applied Science and Technology Research Institute, Hong Kong

Plenary Poster Session I-P30: Semantic Cognition, emotion, coordination and behavior
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P5901 **Compose Like Humans: Jointly Improving the Coherence and Novelty for Modern Chinese Poetry Generation [#20371]**

Lei Shen, Xiaoyu Guo and Meng Chen

Key Laboratory of Intelligent Information Processing, Institute of Computing Technology, Chinese Academy of Sciences, Beijing; University of Chinese Academy of Sciences, Beijing, China; JD AI, Beijing, China

P5902 **Adversarial Cross-Lingual Transfer Learning for Slot Tagging of Low-Resource Languages [#20757]**

Keqing He, Yuanmeng Yan and Weiran Xu

Beijing University of Posts and Telecommunications, China

P5903 **Learning Label-Relational Output Structure for Adaptive Sequence Labeling [#20791]**

Keqing He, Yuanmeng Yan, Hong Xu, Sihong Liu, Zijun Liu and Weiran Xu

Beijing University of Posts and Telecommunications, China

P5904 **Legal Feature Enhanced Semantic Matching Network for Similar Case Matching [#21339]**

Zhilong Hong, Qifei Zhou, Rong Zhang, Weiping Li and Tong Mo

Peking University, China

P5905 Label Noise Robust Curriculum for Deep Paraphrase Identification [#20056]

Boxin Li, Tingwen Liu, Bin Wang and Lihong Wang

Institute of Information Engineering, Chinese Academy of Sciences & School of Cyber Security, University of Chinese Academy of Sciences, China; Xiaomi AI Lab, China; National Computer Network Emergency Response Technical Team Coordination Center of China, China

P5906 Towards Selective Data Enhanced Implicit Discourse Relation Recognition via Reinforcement Learning [#20289]

Meilin Zhou, Qi Liang, Lu Ma, Dan Luo, Peng Zhang and Bin Wang

Institute of Information Engineering, Chinese Academy of Sciences, China; Institute of Information Engineering, Chinese Academy of Sciences,, China; Xiaomi AI Lab, China

P5907 TERG: Topic-Aware Emotional Response Generation for Chatbot [#20339]

Pei Huo, Yan Yang, Jie Zhou, Chengcai Chen and Liang He

East China Normal University, China; Xiaoi Robot Technology Co., Ltd, China

P5908 Extricating from GroundTruth: An Unpaired Learning Based Evaluation Metric for Image Captioning [#20620]

ZhongQiu Zhao, YueLin Sun, NanXun Wang and WeiDong Tian

Hefei University of Technology, China

P5909 Mining Knowledge within Categories in Global and Local Fashion for Multi-Label Text Classification [#20658]

Sheng Bi, Peng Shi, Yuntao Du, Bin Jin and Lingshuang Yu

National Key Laboratory for Novel Software Technology, Nanjing University, China

P5910 Dependency Guided Graph Convolutional Network for Aspect-Based Sentiment Analysis [#20814]

Peng Shi and Sheng Bi

Nanjing University, China

P5911 Building a Better Lie Detector with BERT: The Difference Between Truth and Lies [#21048]

Dan Barsever, Sameer Singh and Emre Neftci

University of California, Irvine, United States

P5912 Multi-Channel Co-Attention Network for Visual Question Answering [#21196]

WeiDong Tian, Bin He, NanXun Wang and ZhongQiu Zhao

Hefei University of Technology, China

P5913 Cascading Top-Down Attention for Visual Question Answering [#21202]

WeiDong Tian, Rencai Zhou and ZhongQiu Zhao

Hefei University of Technology, China

P5914 Dependency Based Bilingual word Embeddings without word alignment [#21421]

Taghreed Alqaisi, Alexandros Komninos and Simon O'Keefe

University of York, United Kingdom

P5915 TSception: A Deep Learning Framework for Emotion Detection Using EEG [#20217]

Yi Ding, Neethu Robinson, Qiuhao Zeng, Duo Chen, Aung Aung Phyo Wai, Tih-Shih Lee and Cuntai Guan

School of Computer Science and Engineering, Nanyang Technological University, Singapore, Singapore; Neuroscience and Behavioral Disorders Program, Duke University - National University of Singapore Medical School, Singapore, Singapore; Singapore General Hospital, Singapore, Singapore, Singapore

P5916 Non-Linearities Improve OrigiNet based on Active Imaging for Micro Expression Recognition [#21663]

Monu Verma, Santosh Kumar Vipparthi and Girdhari Singh

Malaviya National Institute of Technology, India

P5917 Audio-Visual Weakly Supervised Approach for Apathy Detection in the Elderly [#21845]

Garima Sharma, Jyoti Joshi, Radia Zeghari and Rachid Guerchouche

Monash University, Australia; Centre Hospitalier Universitaire de Nice, France; INRIA, France

P5918 Can Adam Smith's Invisible Hand phenomenon be used for the analysis of Fourth Estate's impact and behavior? [#20628]

Tadeusz Szuba and Danuta Sztuba

UPJP2 University, Poland

P5919 Multimodal Emotion Recognition Using Deep Generalized Canonical Correlation Analysis with an Attention Mechanism [#20729]

Yu-ting Lan, Wei Liu and Bao-Liang Lu Center for Brain-like Computing and Machine Intelligence, Shanghai Jiao Tong University, China; Center for Brain-like Computing and Machine Intelligence, Department of Computer Science and Engineering, Key Laboratory of Shanghai Education Commission for Intelligent Interaction and Cognitive Engineering, Brain Science and Technology Research Center, China

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