IEEE WCCI 2020

IEEE World Congress on Computational Intelligence

Virtual Conference – July 19-24, 2020

- 2020 IEEE Congress on Evolutionary Computation (CEC)
- 2020 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)
- 2020 International Joint Conference on Neural Networks (IJCNN)

2020 CONFERENCE PROCEEDINGS

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wcci2020.org

Technical Support

Conference Catalysts

Phone: +1 352 872 5544
cdyer@conferencecatalysts.com

WELCOME MESSAGE FROM THE GENERAL CHAIRS

On behalf of the Organizing Committee, it is our great pleasure to welcome you to the IEEE World Congress on Computational Intelligence (WCCI 2020), being held from July 19-24, 2020. WCCI 2020 features the three flagship conferences of the IEEE Computational Intelligence Society (CIS) under one roof: The 2020 International Joint Conference on Neural Networks (IJCNN 2020); the 2020 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2020); and the 2020 IEEE Congress on Evolutionary Computation (IEEE CEC 2020).

The Congress was scheduled to be held at the Scottish Events Campus, Glasgow, Scotland. However, due to the COVID-19 global pandemic, holding the congress in person in Glasgow became impossible. Whilst we would have loved to host you in Glasgow, we hope to provide you with an exciting virtual experience of the city and the conference programme in an online format. We greatly appreciate the efforts of everyone who has contributed to the creation of our virtual platform, which will allow you to interactively learn about the latest developments in computational intelligence. You will have the opportunity to engage directly with authors, as well as the many leading experts, who are kindly giving their time to share their valuable insights through keynote talks, workshops, tutorials, panel discussions, and contributed talks.

IEEE WCCI 2020 received a record 3,118 paper submissions, of which 1,819 highest quality papers were accepted from over 73 countries, following a rigorous peer-review process involving at least three reviewers per paper. The highlights of the Congress include:

- A public lecture by Yoshua Bengio on artificial neural networks and deep learning
- 4 Plenary Speeches by leading scholars: Barbara Hammer, Kay Chen Tan, Carlos Coello Coello, and Jim Bezdek
- 15 keynote speeches by world-renowned scholars, 5 from each conference
- 4 panel sessions
- 35 cutting-edge tutorials, including 11 on Neural Networks, 17 on Evolutionary Computation, 4 on Fuzzy Systems and 3 on Hybrid Methods
- 10 workshops to stimulate discussions between participants on active and emerging topics of computational intelligence
- 170 special sessions including 61 for IJCNN, 42 For CEC, 37 For FUZZ, and 30 Cross-Disciplinary sessions
- 13 challenging and contemporary competitions, including a Strategy Card Game AI competition

Apart from attending the interactive technical program sessions, participants are also invited to attend various social and networking events that are being virtually organized during the IEEE WCCI 2020, including Women in Computational Intelligence (WCI), Student Activities, and the IEEE CIS Chapters Forum.

Last but not least, we would like to express our deepest gratitude to everyone involved in making the Congress a success. In particular, we wish to acknowledge the excellent leadership and support of our three WCCI Conference Chairs: Asim Roy (IJCNN), Nikhil Pal (FUZZ-IEEE) and Yaochu Jin (IEEE CEC),

and their respective Technical Chairs, the local organizing committee coordinator, the IEEE CIS Leadership team, and the IEEE WCCI 2020 sponsors, specifically: the IEEE, the IEEE CIS, the International Neural Network Society (INNS), and the Evolutionary Programming Society, IET. We would also like to extend our thanks to all members of the organizing committee, the keynote, plenary, and public lecturers, the tutorial speakers, the special session, workshop and panel session organizers, the program committee members and reviewers, the conference participants, and all contributing authors who will be presenting their high quality research. Finally, we would like to acknowledge the timely support provided by our PCO, Conference Catalysts.

We hope everyone will enjoy the virtual experience of Glasgow, Scotland, through our online platform and will have the chance to visit one of Europe's most dynamic cultural capitals and the "World's Friendliest City" soon in the future.

Amir Hussain, Marios Polycarpou, Xin Yao
IEEE WCCI 2020 General Co-Chairs