

Welcome to the *First IEEE Symposium of Computational Intelligence in Multicriteria Decision Making (MCDM 2007)*. Our goal was to provide a common forum for three scientific communities that have addressed different aspects of the MCDM problem and provided complementary approaches to its solution. The first approach is the *search process* over the space of possible solutions. We must perform efficient searches in multi- (or sometimes many-) dimensional spaces to identify the non-dominated solutions that compose the Pareto set. This search is driven by the solution evaluations, which might be probabilistic, stochastic, or imprecise, rather than deterministic. The second approach is the *preference tradeoff process*. We need to elicit, represent, evaluate, and aggregate the decision-maker's preferences to select a single solution (or a small subset of solutions) from the Pareto set. These preferences may be ill defined, and state or time-dependent rather than constant values. The aggregation mechanism may be as simple as a linear combination or as complex as a knowledge-driven model. The third approach is the *interactive visualization process*, which enables progressive decisions. We often want to *embed* the decision-maker in the solution refinement and selection loop. To this end, we need to show the impacts that intermediate tradeoffs in one sub-space could have in the other ones, while allowing him/her to retract or modify any intermediate steps to strike appropriate tradeoff balances. Given this perspective, we believe that MCDM resides in the intersections of these approaches.

For this purpose, we have invited researchers in meta-heuristics and evolutionary multi-objective optimization (EMO) to contribute their most efficient search algorithms, analyzing them for robustness, scalability, tolerance for imprecise solution evaluation, etc. We have also invited scientists from the Fuzzy Sets and Bayesian decision-making communities to discuss their selection methods, while asking researchers from the interactive visualization community to present their visualization tools and underlying cognitive models. As in all scientific endeavors, we must also create a baseline derived from the best traditional approaches to properly assess the benefits derived from newer techniques, such as Computational intelligence. Therefore, we have invited scientists from the International Society on MCDM to assess the current state-of-the-art in MCDM from an Operational Research perspective.

Overall, we received over 90 submissions, of which 63 have been selected for publication. The review process that led to this selection was enabled by the contributions of a very active Program Committee, whose members I am listing below in alphabetical order:

Hussein Abbas, Adel M. Alimi, Ulrich Bodenhofer, Piero Bonissone, Antonio Braga, Juergen Branke, Anna Buczak, Pei-Chan Chang, Balakrishnan Chandrasekaran, Kay Chen Tan, Francisco Chiclana, Chaochang Chiu, Carlos Coello Coello, Oscar Cordon, David Corne, Dragan Cvetkovic, Bernard De Baets, Beatriz De la Iglesia, Nauck Detlef, Thierry Denoeux, Matthias Ehrgott, Marco Farina, Rudolf Felix, Jonathan Fieldsend, Peter Fleming, David Fogel, Ashish Ghosh, Fernando Gomide, Michel Grabisch, Lluís Godó, Thomas Hanne, Arturo Hernandez, Francisco Herrera, Enrique Herrera-Viedma, Chongfu Huang, Christian Igel, Masahiro Inuiguchi, Hisao Ishibuchi, Naresh Iyer, Fernando Jimenez, Yaochu Jin, John Josephson, Janusz Kacprzyk, Urszula Kaczmarska, Uzay Kaymak, Gabriele Kern-Isberner, DaeEun Kim, Frank Klawonn, Laszlo Koczy, Mario Koeppen, Rudolf Kruse, Manuel Laguna, Xiaodong Li, Jie Lu, Ester Bernado-Mansilla, Vladimir Marik, Martin Middendorf, Kaisa Miettinen, Javier Montero, Sanaz Mostaghim, Hirotaka Nakayama, Shigeru Obayashi, Tatsuya Okabe, Luiz Eduardo Oliveira, Ian Packham, Nik Pal, Ian Parmee, Yaqub Rafiq, Alan Reynolds, Ra Ruan, Yew Soon Ong, Joao MC Sousa, Raj Subbu, Thomas Sudkamp El-Ghazali Talbi, Kiyoshi Tanaka, Vicenc Torra, Edward Tsang, Thomas Whalen, Ronald Yager, JingTao Yao, Xin Yao, Yiyu Yao, Gary Yen, Eckart Zitzler.

I also want to thank Prof. Luciano Sanchez and Prof. Hideki Katagiri for organizing two special sessions in the symposium, and Dr. Raj Subbu for coordinating these sessions. I want to show my appreciation to Prof. Gary Yen, MCDM Publicity Chair, whose promotional efforts have been critical in reaching out to the scientific communities, generating a large number of submissions and participants for this symposium.

Finally, I want to extend my gratitude to the two co-chairs, Prof. Carlos Coello Coello and Dr. Yaochu Jin, who supported the organization of this event since its conception and whose efforts have been crucial to the success of the MCDM symposium.

Piero P. Bonissone