



IEEE WCCI 2022

IEEE WORLD CONGRESS ON COMPUTATIONAL INTELLIGENCE
PADUA, ITALY • 18 - 23 July, 2022

2022 IEEE CONGRESS ON
EVOLUTIONARY COMPUTATION (CEC)

2022 IEEE INTERNATIONAL CONFERENCE ON
FUZZY SYSTEMS (FUZZ-IEEE)

2022 INTERNATIONAL JOINT CONFERENCE
ON NEURAL NETWORKS (IJCNN)

2022 CONFERENCE PROCEEDINGS

Please visit website for more information!

wcci2022.org

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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 (IEEE WCCI 2022), being held July 18-23, 2022. IEEE WCCI 2022 features the three flagship conferences of the IEEE Computational Intelligence Society (CIS) under one roof: The 2022 International Joint Conference on Neural Networks (IJCNN 2022); the 2022 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2022); and the 2022 IEEE Congress on Evolutionary Computation (IEEE CEC 2022).

The congress is scheduled to be held at the Padua Congress Center as a face-to-face event to re-establish the crucial role of traditional social contacts which have been limited to virtual interactions due to the COVID-19 pandemic. Moreover, this was the opportunity to celebrate the 800 years anniversary from the foundation of the University of Padua.

The IEEE WCCI 2022 offers a rich scientific program, social and networking events and industrial activities to the participants enabling them to engage directly with authors, as well as the many leading experts in the field of computational intelligence, who are kindly giving their time to share their valuable insights through plenaries, keynote talks, workshops, tutorials, panel discussions, and contributed talks.

This edition of the congress features for the first time an Industry Day, adding in this way a new dimension to reflect the growing interest of Industry in Computational Intelligence applications.

We are thankful to the 2068 expert reviewers from the fields who supported the review process, that for the first time introduced a paper bidding feature to improve the quality of reviews.

We received 2646 paper submissions, of which 1467 highest quality papers were accepted from over 73 countries across all continents, following a rigorous double-blind peer-review process involving at least three reviewers per paper.

The highlights of the congress include:

- 934 oral presentations organized in 255 sessions with the following conference distribution: 154 FUZZ-IEEE, 223 IEEE CEC, 557 IJCNN;
- 533 poster presentations organized in 5 sessions within IJCNN;
- 5 plenary speeches by leading scholars: Jim Keller, Paul Werbos, Michael Bronstein, Bing Xue and Tinne Tuytelaars;
- 1 plenary speech by Marco Landi within the Industry Day;
- 15 keynote speeches by world-renowned scholars, 5 for each conference;
- 7 panel sessions including the panel on The Role of Diversity and Inclusion in Responsible Technological Innovation;

- 32 cutting-edge tutorials including 1 full day tutorial by NVIDIA on Fundamentals of Deep Learning, 8 on Neural Networks, 20 on Evolutionary Computation, 3 on Fuzzy Systems;
- 7 workshops to stimulate discussions between participants on active and emerging topics of computational intelligence;
- 87 special sessions including 42 for IJCNN, 22 for IEEE CEC, 23 for FUZZ-IEEE;
- 8 challenging and contemporary competitions, including the Human-Machine Crosswords Challenge.
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Beside attending the interactive technical program sessions, participants are also invited to attend various social and networking events that are being organized during the IEEE WCCI 2022, including the IEEE CIS Women in Computational Intelligence (WCI) reception, and the Mentoring Program.

The organization of a conference like this is a tremendous task relying on many people. 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 Conference Chairs: Barbara Hammer and Kay Qin (IJCNN), Patricia Melin and Oscar Cordon (FUZZ-IEEE), Sanaz Mostaghin and Carlos A. Coello Coello (IEEE CEC), and their respective Technical Chairs. In addition, we would like to mention the different chairs: submission, program, publication, publicity, tutorial, keynote, competition, special session, finance, registration, conflict of interest, student activities, plagiarism, Conference Catalysts, the entire program committee, and all volunteers.

We would like to specifically mention and thank our submission chair Nicolo Navarin, for the professional, dedicated work and his kindness. Personal thanks go to Matteo Bellomi, professional conference organizer, who did not hesitate to spend several nights working on the local arrangements. Special thanks go to Jo-Ellen Snyder for her dedication to IEEE CIS event management, and to Katie Becker Colón for supporting the INNS events.

We thank all our sponsors: the IEEE, the IEEE CIS, the International Neural Network Society (INNS), the Evolutionary Programming Society, IET, University of Padova, Department of Mathematics “Tullio Levi-Civita”, the gold sponsors European Space Agency and expert.ai, the silver sponsors Elsevier and Springer Nature, the bronze sponsors Google and Baker and Hughes, the technical sponsor NVIDIA.

We hope everyone will enjoy the experience of Padua, Italy, in one of the oldest Universities, where Galileo Galilei taught for 18 years.

Marco Gori and Alessandro Sperduti
IEEE WCCI 2022 General Co-Chairs

Piero Bonissone
IEEE WCCI 2022 Honorary General Chair