

Message from the Co-chairs

CSCI 2023

It gives us great pleasure to introduce this collection of papers to be presented at The 2023 International Conference on Computational Science and Computational Intelligence (CSCI'23), December 13-15, 2023, Las Vegas, Nevada, USA.

The CSCI'23 International Conference includes papers from diverse communities, including researchers from: universities, corporations, and government agencies. Accepted papers are published by Conference Publishing Services (CPS). Papers published in the proceedings present solutions to problems in many important areas of computational science and computational intelligence.

Computational Science (CS) is the study of addressing problems that are impossible to solve (or difficult to solve) without computers. CS can be considered to be the bridge between computer science and other sciences. The field is interdisciplinary by nature and includes the use of advanced computing capabilities to understand and solve complex problems. In short, CS is the science of using computers to do science. Computational Intelligence (CI) is the study of computational methods in ways that exhibit intelligence. These methods adapt to changing environments and changing goals. There is a significant overlap between the fields of CI and Artificial Intelligence (AI). However, there is also a difference: in general AI techniques often involve top-to-bottom methods (i.e., methods to the solutions are imposed from the top) whereas CI techniques often involve bottom-up methods (i.e., solutions emerge from unstructured beginnings). An important part of CI includes a set of Nature-inspired computational approaches to address complex problems to which traditional methods are infeasible. Computational Science and Computational Intelligence, both share the same objective: finding solutions to difficult problems. However, as stated earlier, the methods to the solutions are different.

Considering the above broad outline, the International Conference on Computational Science and Computational Intelligence (CSCI'23) is composed of the following Research Tracks: Computational Science (CSCI-RTCS); Computational Intelligence (CSCI-RTCI); Computational Biology (CSCI-RTCB); Cyber Warfare, Cyber Defense, & Cyber Security (CSCI-RTCW); Artificial Intelligence (CSCI-RTAI); Smart Cities and Smart Mobility (CSCI-RTSC); Big Data and Data Science (CSCI-RTBD); Education - CS & CE (CSCI-RTED); Health Informatics and Medical Systems (CSCI-RTHI); Mobile Computing, Wireless Networks, & Security (CSCI-RTMC); Software Engineering (CSCI-RTSE); Internet of Things & Internet of Everything (CSCI-RTOT); Social Network Analysis, Social Media, & Mining (CSCI-RTNA); Cloud Computing and Data Centers (CSCI-RTCC); Parallel & Distributed Computing (CSCI-RTPD); and Signal & Image Processing, Computer Vision & Pattern Recognition (CSCI-RTPC).

The main objective of the CSCI Conference is to facilitate increased opportunities for cross-fertilization across CS and CI. The CSCI Conference is committed to encouraging diversity and eliminating discrimination in both its role as a conference and as a provider of services. CSCI aims to create a culture that respects and values each others' differences, that promotes dignity, equality and diversity, and that encourages individuals to develop and maximize their true potential. We are

committed wherever practicable to organizing a conference that broadly reflects the international community. We hope that we have achieved these important objectives.

The Steering Committee and the Program Committee would like to thank all those who submitted papers for consideration. The conference had paper submissions from 72 countries. About 59% of the submissions were from outside the United States. Each submitted paper was peer-reviewed by at least two experts in the field for originality, significance, clarity, impact, and soundness. In cases of contradictory recommendations, a member of the conference program committee was charged to make the final decision; often, this involved seeking help from additional referees. In addition, papers whose authors included a member of the conference program committee were evaluated using the double-blinded review process. One exception to the above evaluation process was for papers that were submitted directly to chairs/organizers of sessions/workshops; in these cases, the chairs/organizers were responsible for the evaluation of such submissions. The overall paper acceptance rate for regular and short papers was 18%; and 24% of the remaining papers were accepted as extended abstract (poster) papers (at the time of this writing, we had not yet received the acceptance rate for two research track.)

We are very grateful to the many colleagues who offered their services in organizing the conference. In particular, we would like to thank the members of the Program Committee and the Steering Committee of CSCI'23. The members of the committees will be requested (after the conference) to provide their expertise and services for selecting papers for publication (extended versions) in various research book series (to be prepared for publishers including: Springer, Elsevier, De Gruyter, and others). We would also like to thank the main sponsor of the conference: American Council on Science & Education.

We express our gratitude to all speakers and authors. We would also like to thank the followings: the staff at Luxor hotel (an MGM property; conference/meeting department), Ms. Hannah Gibbons and Ms. Kathy Salazar; Conference Publishing Services of IEEE Computer Society production editors and Quality Assurance staff, Javier Gurrola, Patrick Kellenberger, Jennifer Carruth, and Tricia Yamaguchi; and Dr. Soheyla Amirian (Faculty, University of Georgia), Dr. Farid Gharehmohammadi (Mayo Clinic), and Dr. Farzan Shenavarmasouleh (MediaLab, Georgia).

We present the proceedings of CSCI'23.

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