

A Word From the SMC 2023 General Chair and Co-Chair

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It is a great pleasure and honor to invite you to the IEEE International Conference on Systems, Man, and Cybernetics (SMC), the flagship conference of the IEEE SMC Society. SMC 2023 will be held on October 1–4, 2023, at the Hyatt Regency Maui Resort and Spa on the beautiful island of Maui, Hawai'i. This year's theme is "Improving the Quality of Life". The conference will provide a stimulating forum for researchers, educators, and practitioners to learn, share knowledge, exchange ideas, and report on innovations and developments in all aspects of systems science and engineering, human-machine systems, and cybernetics. We will do our best to make this event an intellectually stimulating and enjoyable experience.

This year, more than ever, we have an impressive number of distinguished speakers. Plenary Talks will be on topics from our three technical areas. Professor Susumu Tachi's talk on Telexistence will present the vision of a society where humans 'exist' and operate at a different physical or virtual location and can perform tasks there. Professor Maja Matarić's talk on personalized human-robot interaction will examine how robots can improve the quality of life of users of various ages who need assistance. Professor Francisco Herrera's talk will focus on Trust in Artificial Intelligence, a must-have characteristic when AI is employed in healthcare, government, justice, and daily life.

Keynote Talks will address specific areas related to the quality of life: Ecological systems and achieving food sustainability and addressing global climate challenges (Prof. YanFen Wang); Healthcare and bioinformatics including genetics (Prof. Sanghamitra Bandyopadhyay); Fighting diseases including cancer (Prof. Levente Kovács). Talks will also address technological approaches: Transdisciplinary approaches to scientific and societal problems of national and global significance (Prof. Azad Madni); Adopting technologies developed for space programs to address societal challenges (Dr. Fred Hadaegh); and advanced computing techniques, including quantum computing (Dr. Juan Bernabé-Moreno).

Invited Guest Speakers have also been selected to provide deep technical knowledge in specific areas of great significance or a novel vision of addressing a fundamental societal problem. Dr. Daniel Howard will share his decades of expertise in advancing AI systems in the defense and healthcare sectors, focusing on using genetic programming to solve the core problem of Explainable AI. Professor Yingxu Wang will address basic research in autonomous AI and symbiotic human-machine systems underpinned by contemporary intelligent mathematics. Dr. James Ayinde Fabunmi, an MIT Ph.D. with decades of contributions to advanced technologies in support of US DoD, will share how he has dedicated his efforts over the last two decades to helping developing nations advance through education and entrepreneurship.

Moreover, we have selected four Workshops, in addition to the 13th Workshop on Brain-Machine Interface Systems. These Workshops will allow for the exchange of ideas using presentation formats not typically found with the main SMC 2023 program, such as poster presentation from abstracts, industry posters, round table discussions, and panels. The selected Workshops include:

1. IEEE Future Directions Telepresence Workshop,
2. Workshop on AI and (cyber)security: Friend or Foe?,
3. Workshop on Patient's Data and Models in Neuroergonomics for Healthcare,
4. Toward Long-Term Robotic and Human Presence on the Moon and Mars Workshop.

Eleven Tutorials have also been selected, including:

1. Transfer Learning for EEG-based Brain-Computer Interfaces

2. Malware Analysis and Detection
3. Preference-Based Problem Solving for Combinatorial Applications
4. Quantum Machine Learning
5. Computational Social Simulations using E-CARGO
6. How to Extract Knowledge from Interactions: Combining Natural Language Processing, Pragmatics and Knowledge Engineering Techniques
7. Preference-Based Evolutionary Multi-Objective Optimization: Steppingstone to Involve Human in the Loop
8. Ethereum Smart Contract Development
9. Synthesizing Convergent Engineering Systems - A Hetero-functional Graph Theory Tutorial
10. Machine Learning for Low Power IoT Sensors
11. Designing and Validating Cyber-Physical Energy Systems

Lastly, we have 39 approved Special Sessions spread across our three technical areas. You can find the list and their respective codes on our website: <https://ieeesmc2023.org/contributing/paper-submission/>

More details about the speakers, workshops, tutorials, registration, etc. can be found on our website: <https://ieeesmc2023.org>; make sure to bookmark it! Note that paper submission deadline is fast approaching – April 15th, so please make sure to spread the word!

Lastly, SMC 2023 is being planned as an in-person conference which will accommodate a virtual track. Authors who are unable to attend in person due to travel/health restrictions will be able to present their papers virtually. Requests for virtual presentations will need to be approved by the conference registration chair.

We look forward to seeing you in Maui in October!



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