

Guest Editorial: Special Issue on Selected Papers from ICICE 2024

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The rapid advancement of artificial intelligence (AI) continues to reshape industries and research, driving innovation across numerous fields. In the post-pandemic era, the integration of AI with technologies such as IoT, edge computing, and blockchain has unlocked new scientific and industrial opportunities. This special issue, featuring selected papers from ICICE 2024, highlights cutting-edge advances in network technology, computing, IoT, and computer engineering—with a particular focus on AI-driven solutions. Topics range from social media and quantum communications to UAV-assisted networks, security, cloud/edge computing, and AI applications in e-learning and services. The contributions demonstrate novel methodologies and practical implementations that extend the current state of knowledge.

This issue includes four papers that address both technical challenges and societal impacts, reflecting a shift toward smarter, more connected digital ecosystems.

The first paper, by Su and Su, introduces a hybrid ARIMA and Random Forest model to predict learning outcomes in MOOCs. By combining time-series analysis with machine learning, the model achieves high accuracy (F1-score = 0.8961, $R^2 = 0.9024$), enabling early identification of at-risk learners and supporting educational interventions.

The second contribution, by Zhang et al., examines how augmented reality (AR) can assist artists in evaluating outputs from AIGC platforms. Using Web AR within a cognitive load and technology acceptance framework, the study offers a decision-support tool that enhances usability and reduces decision fatigue.

Ding et al.'s paper presents an AR flavor-mapping system for individuals with olfactory or gustatory impairments. Through visual symbolization of taste attributes, the system supports sensory compensation and training, showing positive results in user engagement and rehabilitation potential.

Finally, Li et al. apply immersive VR and fsQCA to digitally visualize Overseas Chinese Yinxin correspondence. Their approach identifies key factors that foster emotional resonance, supporting interactive heritage preservation and user-centered cultural engagement.

Together, these studies illustrate the transformative role of AI, IoT, and AR across education, health, culture, and creative industries. They highlight a trend toward adaptive, human-centric technologies that balance technical innovation with practical relevance.

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for their invaluable contributions. We hope this issue encourages further interdisciplinary research in innovation, communication, and engineering.

Guest Editors



Liang-Wen Ji was born in Taipei, Taiwan, in 1965. He received the B.S. degree in physics, the M.S. degree in material science, and the Ph.D. degree in microelectronics from National Cheng Kung University (NCKU), Tainan, Taiwan. In 2005, he became Associate Professor with the Institute of

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Sheng-Joue Young was born in Tainan, Taiwan. He received the B.S. degree from the Department of Physics, National Changhua University of Education, Changhua, Taiwan, in 2003, the M.S. degree from the Institute of Electro-Optical Science and Engineering from National Cheng Kung University,

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Siu-Tsen Shen has studied widely, gaining her Master degree in Industrial Design Research from the Design Academy of Eindhoven, and her PhD in Design from Goldsmiths College, University of London. She has been a visiting professor at UCL and Middlesex University, UK and is currently a Professor in Multimedia Design at the National Formosa University, Taiwan. Her research interests lie in the areas of HCI, User-Centred Design, Cross-Cultural Research, User Interface Design, and Design Team Formation using Personality Type. She is an editor in chief in *Journal of Multimedia, Art, Design and Education* (ISSN 2634-1395) and *Journal of Cultural and Creative Industries Research* (ISSN 2221-6170). She is the General Co-Chairman and leads a technical committee for Innovation in Design, Communication and Engineering (IEEE ICICE) since 2012, and International Conference on Applied System Innovation (IEEE ICASI) since 2015.



Stephen D. Prior is a drone expert, engineer and educationalist who leads a multidisciplinary research group at the University of Southampton. His innovative work on drone design builds on his personal experience as an engineer and scientist. Stephen has built an unorthodox and creative team of aeronautical engineers, design engineers and robotic experts. Stephen has an international profile as an academic and conference chair. He publishes widely and speaks frequently at national and international events. He is especially interested in collaborative research at the intersections between traditional disciplinary boundaries and brings his considerable knowledge and insight to thinking on unmanned systems and the future of aircraft.