Guest Editorial: Special Issue on "Recent Advance in Future IoT for Intelligent Society and Industry", SGIoT 2022 and 2023

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The Internet of Things (IoT) constitutes a networked system comprising computing devices, machinery, and digital systems that digitalize the physical world. Its impact has already permeated various aspects of human life, therefore the Special Issue encompassed recent advance areas such as education, health, management, law, and closely connected to future developments regarding intelligent society and industry. Additionally, the implementation of the smart grid underscores a crucial lesson: security considerations must be ingrained into the foundation of any IoT deployment from its inception.

The objective of this special issue is to showcase cutting-edge and forward-looking papers highlighting recent advancements in diverse applications of wireless technologies, which hopes to enabl the society and industry to face and realize new developments and challenges in IoT deployments. Thus, these papers were carefully chosen from the SGIoT 2022/2023 conference. Subsequent to a thorough review process, four exceptional papers of high quality were chosen for publication, and a brief overview of each is provided below.

The first article "Predicting Teaching Effectiveness Based on Technology Integrated Language Learning" by Wan-Chi Yang et al. provides the relationship between English teachers' approval of Instant Response Systems (IRSs) and their perceived effectiveness in teaching was investigated. The results indicated that factors influencing teaching effectiveness encompassed constructivist pedagogical beliefs, attitudes towards IRS implementation, perceived usefulness of IRSs, and the presence of facilitating conditions. The utilization of tools based on IRSs exhibited a favorable influence on student motivation, engagement, and academic success. These IRS-based tools were identified as catalysts for invigorating the classroom environment, offering timely information and feedback, thereby enhancing teachers' ability to assess students' learning advancements.

The second article "Network Management Based on Funeral Internet of Things and Incremental Services" by Chih-Chun Ho et al. introduces a novel funeral service connection network that centers around funeral-related content and establishes connections based on Internet integration. This network incorporates features such as cloud scanning, two-dimensional code tombstones, and remote monitoring of tombstone status. Because of the service involves topics of humanistic care, information management, individual rights and interests. Adhering to The Basic Data Standard of Funeral and Interment Management Information System and The Data Exchange and Sharing Standard of Funeral and Interment Management Information System, as outlined and issued by the Ministry of Civil Affairs of China, the network aims to fully embody humanistic care and modern technological characteristics. It strives to create a secure and comfortable network management environment, with the ultimate goal of providing a "comfortable funeral" experience within a universal network that meets the expectations and needs of the people.

The third article "Intellectual Property Management and Legal Protection Mechanism of Blockchain-based Crowdsourced Testing" is written by Cheng-yong Liu et al. The article refers to both intellectual property and legal protection issues of crowdsourced testing in blockchain service. As crowdsourced testing services experience robust growth, the advent of Internet technology has simultaneously given rise to challenges such as inconsistent management of intellectual property, ambiguous ownership rights, and a deficit in trustworthiness. Furthermore, a new intellectual property management framework for crowdsourced testing is necessary. Safeguarding the intellectual property of crowdsourced testing requires more than just technical measures; it necessitates complementary legal support. This includes enhancing laws and regulations pertaining to judicial and administrative protection of intellectual property and adeptly managing the legal aspects of risk control associated with the intellectual property of crowdsourced testing.

Finally, the fourth article "The Research Development Track of Internet of Things in the Application Area of Communication Technology" by Chia-Yu Wu et al., refers that computer networks, mobile media, and information and communication technology (ICT) have experienced continuous growth, with the evolution of communication technology intricately linked to that of ICT. The research delves into the evolving role of the Internet of Things in the context of ICT development. Utilizing main path analysis and keyword co-occurrence network analysis, the study aims to uncover the primary research trajectory, cluster dynamics, and future directions in the research and development of the Internet of Things within the domain of communication technology.

As the Guest Editors of this special issue, we would like to express our gratitude for the generous support provided by our esteemed colleagues who devoted their time to reviewing papers for possible inclusion in this special issue. Moreover,

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Guest Editors

Chun-Hsien Sung received his Ph.D. degree in Law from University of Aberdeen (UK) in 2009. He is an assistant professor of Department of Financial, Ming Chuan University. He is also director of the Taiwan Society of Comparative Criminal Law. He has been an council member of the Research Society of Civil and Commercial Law under Zhuhai Law Society(2018-2019), and a lecturer at Judges Academy, Taiwan(2016-2017). His research interests include law and technology (including, IoT, Blockchain, and Personal Data Protection),and intellectual property law.

Chun-Cheng Lin received the B.S. degree in Mathematics, M.B.A. degree in Business Administration, and Ph.D. degree in Electrical Engineering from National Taiwan University in 2000, 2007, and 2009, respectively. He has been a Distinguished Professor (since 2020) and an Associate Dean of Management College (since 2017) at National Yang Ming Chiao Tung University, which he joined in 2011. He has also been an adjunct Chair Professor at Asia University, Taiwan (since 2020). Since 2022, he has been the President of Operations Research Society of Taiwan (ORSTW) (also, INFORM Taiwan Chapter). He was an Assistant Professor of Computer Science at University of Taipei (2010–2011) and National Kaohsiung University of Science and Technology (2009–2010). His main research interests include smart manufacturing, energy management system, metaheuristic algorithms, machine learning, Internet of things, wireless networks, as well as computational management science.

Der-Jiunn Deng received the Ph.D. degree in electrical engineering from the National Taiwan University in 2005. He joined the National Changhua University of Education as an Assistant Professor in the Department of Computer Science and Information Engineering in August 2005 and then became a Distinguished Professor in 2015. In 2018, he was seconded to Overseas Chinese University as the Dean of Research and Development for a period of one year, and then he was seconded to the Department of Industrial Technology, Ministry of Economic Affairs, as the Technical Expert of Science and Technology for a period of two year. Dr. Deng is an EAI fellow and has received a number of research awards, such as the Research Excellency Award of National Changhua University of Education, the Outstanding Faculty Research Award of National Changhua University of Education, the ICS 2014 Best Paper award, the NCS 2017 Best Paper Award, and the Chinacom 2017 Best Paper Award. Dr. Deng is the Co-Editor-in-Chief of EAI Endorsed Transactions on IoT and Journal of Computers. He serves as an associate editor in IEEE Network Magazine and International Journal of Communication Systems. He also served or is serving on several program chairs, symposium chairs, and technical program committees for IEEE, EAI and other international conferences. His research interests include B5G/Pre 6, Quality-of-Service, and Wireless Local Area Network.