

Guest Editorial: Special Issue for ICSEC 2023

Sheng-Lung Peng, Chetneti Srisa-An, Dinesh Goyal*

The International Computer Science and Engineering Conference (ICSEC) is the premier forum for researchers, practitioners, and educators in computer science, computer engineering, software engineering, information technology, and emerging technologies to showcase and discuss the latest innovations, research findings, experiences, trends, and concerns. ICSEC 2023 is jointly organized by the IEEE Thailand Chapter (IEEE Computer Society Thailand Chapter), the Multidisciplinary and Interdisciplinary School (MIDIS) and Faculty of Public Health of Chiang Mai University.

This special issue invited several authors to submit expanded versions of selected outstanding papers, and other submissions were also welcome. Each paper included in this issue underwent rigorous review by at least two experts in their respective research fields. Ultimately, five papers were selected for this special issue, and a brief overview follows.

In the paper entitled *“Intelligent Digital Ecosystems for Safe and Sustainable Wellness Tourism”* by Korawan Sangkakorn, Apichart Traisaeng, Kannikar Intawong, and Chalermchai Panyadee, they proposed an intelligent digital ecosystem integrating emergency medical systems, wellness services, and smart tourism technologies including AI, IoT, GIS, and mobile apps to enhance safe and sustainable wellness tourism in Chiang Mai, Thailand. Using a mixed-methods approach with geospatial analysis, surveys, and stakeholder interviews, findings show that multilingual alerts, health surveillance, and geographic mapping improve emergency response, coordination, and tourist confidence. However, disparities in certification and service quality between urban and rural providers highlight the need for policy and capacity development. The study contributes to integrating digital infrastructure, tourism management, and public health, offering a replicable model for safe and sustainable wellness tourism and informing resilience strategies for destinations worldwide.

In the paper entitled *“Machine Learning-based Classification of COVID-19 Preventive Behaviors Among University Staff and Students in Chiang Mai, Thailand”* by Thitikan Phuwiththanasap, Khanita Duangchaemkarn, Kitbordin Thongduang, Wanicha Pungchompoo and Waraporn Boonchieng, this study collected self-reported risk assessment data from 1,266 members of Chiang Mai University to explore group-level infection risks. Results showed that students faced higher COVID-19 risks than faculty members. To examine whether these differences reflected distinct or homogeneous risk patterns, machine learning models were trained to classify participants by

group. The model achieved 95% accuracy, indicating consistent and distinguishable risk profiles within each group. These findings demonstrate that survey-based data can reliably predict infection risks and support strategic public health decisions. Specifically, resource deployment can be guided by representative samples from large populations, enhancing preparedness and response efficiency during future outbreaks.

In the paper entitled *“Smart SEP Farmers: Digital Platform to Enhance Farmer Life Sustainability According to Sufficiency Economy Philosophy”* by Phattharawuth Somyana and Pattama Longani, the authors developed a network of “Smart SEP Farmers” through the SEPAction digital platform to advance Thailand’s Sufficiency Economy Philosophy (SEP) from the stages of “Action” to “Attain” to “Achieved”. A total of 312 farmers across nine northern provinces participated, using self-assessment tools and the Farmer’s Success Level guide to identify weaknesses and plan improvements. After adopting the platform, farmers’ overall potential increased by 31.29%, with many progressing to higher SEP levels. Agricultural expenses were reduced by 21.44%, and debts decreased by 19.74%, demonstrating improved self-sufficiency and well-being. The findings highlight the platform’s effectiveness in empowering farmers, enhancing productivity, and alleviating poverty. Recommendations for collaboration among government, academic institutions, and farmers are provided to promote sustainable smart farming and long-term rural development.

In the paper entitled *“Design and Developing Super APIs for Blockchain-based Applications”* by Ekkarat Boonchieng, Chaimade Busayatananphon, Sukhuntha Osiriphun, and Anusorn Chaikaew, this study investigates the development and performance optimization of Super APIs with a focus on Cross-Chain Communication Protocols. The goal is to enhance speed, decentralization, privacy, security, and scalability in API applications, particularly for financial transactions. Using comparative performance analysis, the study evaluates Super APIs against other cross-chain solutions. The proposed Super API integrates AES encryption for data security, JWT for authentication, and a Hypercube architecture for efficient node management. Results demonstrate significant improvements in response time, accuracy, and security, enabling seamless handling of both small- and large-scale data. Overall, the research provides a robust framework for secure, scalable, and high-performance Super API design, offering practical implications for decentralized and data-intensive digital ecosystems.

*Corresponding Author: Sheng-Lung Peng; Email: slpeng@ntub.edu.tw

For the final paper entitled “*Enhancing Cross-Domain Vehicle Detection with Transfer Learning and Source-Similar Sample Integration*” by Chi-Han Chen, Shu-Fang Zhang, Hsin-Te Wu, and Rung-Shiang Cheng, this study addresses the challenges of street-vehicle detection in diverse urban conditions, where variations in shooting angles, weather, and environment demand large annotated datasets when applying models to new regions. Although high-precision detection models exist, transferring them to a new domain often requires incorporating region-specific data into training. To avoid over-relying on prior domain knowledge and failing to detect target samples in the new task, they compare transfer-learning approaches such as knowledge distillation and cross-domain adaptation. The paper proposes a training paradigm that injects a small number of source-approximate samples from the original domain into the new-domain task, followed by fine-tuning. Experimental results show that this method yields superior adaptability and vehicle detection performance in the target domain compared to a model using knowledge distillation alone.

As guest editors of this special issue, we would like to thank all reviewers and authors for their helpful comments and significant contributions to this special. Finally, we thank Dr. Han-Chieh Chao, the Editor-in-Chief of JIT journal, for his encouragement and support to publish this special issue and to Ms. Sharon Chang, the Assistant Editor, for her professional help during the preparation of this special issue.

Guest Editors



Sheng-Lung Peng is a Professor at the Department of Creative Technologies and Product Design, and the Dean of the College of Innovative Design and Management, National Taipei University of Business in Taiwan. He is an adjunct Professor at National Dong Hwa University in Taiwan and Kazi Nazrul University in India. He is an Honorary Adjunct Professor at Sir Padampat Singhanian University and Baroda University, India. He serves as the president of the Association of Taiwan Computer Programming Contest and the Association of Algorithms and Computation Theory. He is a co-director of the ICPC Asia Pacific, and a director of the Institute of Information and Computing Machinery and the Taiwan Association of Cloud Computing. He is also a supervisor for the Chinese Information Literacy Association. His research interests are algorithm design in the fields of artificial intelligence, bioinformatics, combinatorics, data mining, and networking.



Chetneti Srisa-An is an Associate Professor of the Department of Computer Science at Rangsit University, Thailand. He received the BS degree in Electrical Engineering from Chiangmai University, Thailand, and the MS and PhD degrees in Computer Science from Illinois Institute of Technology, IL, USA, respectively. He also got his Master of Business Administration (MBA) degree from Loyola University of Chicago, USA. During 2000 – 2002, he was Senior Software Manager of the E-commerce Department, United Airlines, Chicago, IL, USA. During 2011 – 2014, he was Deputy Managing Director (DMD) at Advanced Research Group Co., Ltd. He has served as the Dean of Digital Innovation Technology (previously the Faculty of IT) and also as Vice President for Technology and Innovation at Rangsit University, Thailand, since 2020. He has also served as the President of the Association of Council of IT Deans, Thailand (CITT). His research interests are in AI, data analytics, Data Mining, digital privacy, and blockchain. He has published numerous articles in international conferences and journals.



Dinesh Goyal, Principal & Director at Poornima Institute of Engineering & Technology (PIET), Jaipur, is a Professor of Computer Science & Engineering with 25+ years in teaching, research, and administration. Holding B.E., M.Tech., and Ph.D. in CSE, his research expertise spans Cloud Security, Image Processing, Data Analytics, and Information Security. He established AICTE-sponsored IDEA Lab and Deep Learning Lab, secured >₹81 Lakh in grants (AICTE, TEQIP, ISTE) for research, MODROBS, and conferences. A NAAC empanelled assessor since 2021, he drives outcome-based education. Dr. Goyal holds CMI Level 5 in Management & Leadership (AICTE-UKIERI, Dudley University, UK). He has 36 published patents (2 granted), 1 copyright, 16 edited books (Springer, Wiley, etc.), 5 SCI, 116 Scopus, 52 Web of Science papers, and edits 2 SCI & 5 Scopus journals. An invited speaker/chair in global conferences (China, Japan), he has attended 25+ international events. Senior Member IEEE; Life Member ISC, CSI, IETE, ISTE; ACM Fellow.