

ICIT 2023

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ICIT 2023 Special Session Proposal

Title of the Proposal: Security control, communication technology and artificial intelligence for the health monitoring and control in estates

Technical Outline of the Session and Topics:

Outline of the Session: The COVID19 and its variants result to more than one billion of people being infected and more than 10 millions of people being died. The economic lost is uncountable. The spread within estates is crucial for this pandemic. To address this issue, the emerging technologies such as the security control, the communication technology and the artificial intelligence are required. In particular, the artificial intelligence technology is required for monitoring the health status of the individuals, the communication technology is required for transmitting the data to the server and the security control is required to protect the individuals' data. This Special Session (SS) aims to develop new technologies in the above areas for the control of the pandemic spreads in estates.

Topics of the Session:

- *Security control for data protection*
- *Computer cryptography for data protection*
- *Communication technology for data transmission*
- *Mobile networking*
- *Artificial intelligence for health monitoring*
- *Biomedical signal processing for health monitoring*
- *Pandemic spreads in estates*

IEEE IES Technical Committee Sponsoring the Special Session (if any):
Building Automation, Control and Management

Short bio and contact details of the Session Organizers



Wing-Kuen Ling received the B. Eng. (Hons) and M. Phil. degrees from the department of Electronic and Computer Engineering, the Hong Kong University of Science and Technology, in 1997 and 2000, respectively, and the Ph. D. degree in the department of Electronic and Information Engineering from the Hong Kong Polytechnic University in 2003. In 2004, he joined the King's College London as a Lecturer. In 2010, he joined the University of Lincoln as a Principal Lecturer and promoted to a Reader in 2011. In 2012, he joined the Guangdong University of Technology as a Full Professor. He is a Fellow of the IET, a senior member of the IEEE, a China National Young Thousand-People-Plan Distinguished Professor and University Hundred-People-Plan Distinguished Professor. He serves in the nonlinear circuits and systems technical committee, the digital signal processing technical committee and the power and energy for circuits and systems technical committee of the IEEE Circuits and Systems Community, as well as the cloud and wireless systems for industrial applications technical committee of the IEEE Industrial Electronics Society. He was awarded the best reviewer prizes from the IEEE Instrumentation and Measurement Society in 2008 and 2012. He has also served as the guest editor-in-chief of several special issues of highly rated international journals, such as the IET Signal Processing, the Circuits, Systems and Signal Processing, the HKIE Transactions and the American Journal of Engineering and Applied Sciences. He is currently an associate editor of the IET Signal Processing, the Circuits, Systems and Signal Processing, the Journal of Franklin Institute, the Measurement, the Measurement: Sensors, the Journal of Industrial Management, and the Frontiers in Signal Processing. He has published an undergraduate textbook, a research monograph, five book chapters, 220 internationally leading journal papers and 147 highly rated international conference papers as well as owned 50+ China patents. His research interests include the time frequency analysis, the optimization theory, the symbolic dynamics, the biomedical signal processing and the multimedia signal processing.



Kim-Fung Tsang received the Ph.D. degree in microwave/millimeter wave engineering from the Cardiff University of Wales, Cardiff, U.K., in 1995. He has close ties with industry, and is working actively on radio frequency identification (RFID) (ZigBee) for numerous applications, including energy management system for utilities, metering infrastructure, security, and office/home automation. He is currently an Associate Professor as well as the Director of Wireless Sustainability Center, Department of Electronic Engineering, City University of Hong Kong. He has published more than 150 technical papers. Dr. Tsang received the CityU Applied Research Excellence Award, the first Hong Kong Science and Product Innovation Competition, and the World Chinese Invention Exposition. He also received the EDN Asia Innovator Award, the Ericsson Super-Wireless Application Award, the Best Award from Freescale Semiconductor, the Innovation China Outstanding Entrepreneur Award, and the Excellent Product Award from the China Hi-Tech Fair. He is a fellow of the Hong Kong Institution of Engineers (HKIE).



Hao Ran Chi has been working as a researcher in the Instituto de Telecomunicacoes and Universidade de Aveiro, Portugal since Aug 2019. Before that, he obtained his Ph.D. from the City University of Hong Kong in July 2018, and his Bachelor with First Class Honor from the same university in 2013. He worked as a research scholar in the North Carolina State University after his Ph.D. graduation. Dr. Chi has published more than 50 technical papers in high IF journals and well-acknowledged conferences. He is the Guest Editor for IEEE Transaction on Industrial Informatics, IEEE Transactions on Consumer Electronics, Journal of Sensor and Actuator Networks, and Editorial Board Member of Sensors, Current Chinese Science. He is the Vice Chair of IEEE Standards of P1451.5.5 and P1451.5.6 Working Group, and Sub-TC Chair (Automated Network Management for IIoT) of IEEE IES Technical Committee on Building Automation, Control, and Management. Besides, he has experience organizing multiple international conferences such as IEEE ICC, IEEE IECON, IEEE INDIN, IEEE ISPCE, etc. Dr. Chi has been awarded/won competitions by academic and R&D organizations (e.g. IET, HKIE, HK Education Bureau). Dr. Chi has also successfully coordinated and managed many EU and Portugal projects. During his career, Dr. Chi has obtained expertise knowledge on 5G (and beyond), cloud/fog resource management, IoT infrastructure development, eHealth, and machine learning.