INDIN 2023 Special Session on

SS 09 – Edge Computing-Based Pervasive Artificial Intelligence Towards Industry 5.0

organized by

Principal Organizer: Hao Ran Chi (haoran.chi@ua.pt)
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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.

Organizer 1: Kim-Fung Tsang (ee330015@cityu.edu.hk)
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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).

Organizer 2: Wing-Kuen Ling (yongquanling@gdut.edu.cn)
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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.

Organizer 3: Rutvij H. Jhaveri (rutvij.jhaveri@sot.pdpu.ac.in)
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Dr. Rutvij H. Jhaveri is an experienced educator and researcher working in the Department of Computer Science & Engineering, Pandit Deendayal Energy University, Gandhinagar, India. He conducted his Postdoctoral Research at Delta-NTU Corporate Lab for Cyber-Physical Systems, Nanyang Technological University, Singapore. He completed his PhD in Computer Engineerng in 2016. In 2017, he was awarded with prestigious Pedagogical Innovation Award by Gujarat Technological University. Currently, he is co-investigating a funded project from GUJCOST. He was ranked among top 2% scientists around the world in 2022 and 2021. He has 2500+ Google Scholar citations with h-index 25. Apart from serving as an editor/ guest editor in various journals of repute, he also serves as a reviewer in several international journals and also as an advisory/TPC member in renowned international conferences. He authored 130+ articles including the IEEE/ACM Transactions and flagship IEEE/ACM conferences. Moreover, he has several national and international patents and, copyrights to his name. He also possesses memberships of various technical bodies such as ACM, CSI, ISTE and others. He is a member of the Advisory Board in Symbiosis Institute of Digital and Telecom Management, and other reputed universities since 2022. He is an editorial board member in several Springer and Hindawi journals. He also served as a committee member in "Smart Village Project" - Government of Gujarat, at the district level during the year 2017. His research interests are Cyber Security, IoT systems, SDN and Smart Healthcare.

Call for Papers

Edge computing has emerged to collaborate with cloud computing, with low transmission latency, physically short distance to users, and relatively high privacy protection. The conceived user densification towards 6G brings challenges and opportunities simultaneously, for the future edge computing development. Meanwhile, we have witnessed the proliferation of artificial intelligence (AI) in 5G, which has been discussed to achieve the targeted scenarios of 5G, i.e., enhanced mobile broadband (eMBB), ultra-reliable and low latency communication (URLLC) and massive machine-type communications (mMTC). The success of AI leads it to being pervasive, and dominant towards 6G-based automation.

Edge computing has been widely acknowledged to motivate pervasive AI, supporting emerging industrial scenarios. In particular, the discussion of Industry 5.0, covering diverse domains such as supply chain, transportation, healthcare, etc., has also been raised, emphasizing the unachieved goals of the development of Industry 4.0, towards human-centric and sustainable industrial activities, which will highly rely on edge computing-based pervasive AI.

This Special Issue focuses on tackling the challenges brought by pervasive AI and edge computing technologies, considering the emerging applications and corresponding requirements towards Industry 5.0.

Topics of interest include, but are not limited to:
- Theoretical modeling, analysis and development of edge computing-based AI technologies
- Network configuration, virtualization, and protocol for edge computing towards Industry 5.0
- Embedded AI in edge computing for Industry 5.0
- Security and privacy for edge computing
- Emerging industrial applications relying on edge computing and pervasive AI (e.g., healthcare, transportation, supply chain, etc.)
- Integrated testbed and case studies with data analytics with edge computing and pervasive AI for Industry 5.0

Submissions Procedure: All the instructions for paper submission are included in the conference website https://2023.ieee-indin.org/index.php

Deadlines:

Deadline for submission of papers:	**March 01, 2023**
Notification of acceptance of papers:	**April 15, 2023**
Final manuscripts due:	**June 05, 2023**

IEEE IES Technical Committee Sponsoring the Special Session (if any):

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