



5th Global Power, Energy and Communication Conference

Cappadocia/TURKIYE

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Special Session on Transition Toward the Deployment of Artificial Intelligence, IoT and Blockchain in Smart Grids and Smart Cities

Innovative Artificial Intelligence (AI) methods and techniques, particularly those based on machine/deep learning, computer vision, and the internet of things, are emerging to address a variety of real-world issues, including smart transportation, the management of public services, safety issues, and traffic monitoring. In reality, AI-based systems that also make use of IoT or cloud networks may be used as the basis solutions to this broad spectrum of issues. The Internet of Things (IoT), which connects the physical and digital worlds in a variety of fields including smart cities, smart electricity grids, healthcare, environmental problems, network monitoring, has significantly advanced sensing and communication technology. To properly manage billions of devices with the massive amounts of data created by IoT devices to guarantee low latency, energy efficiency, and other factors, there are still a number of issues for current IoT systems. In modern electricity networks, the analysis of reliability, security, and resilience to contingencies, and cybersecurity is very difficult since they contain intricate distributed generating networks and decentralized sensing, communication, and control infrastructures interacting with each other. This issue seeks to compile works that make systems, methods, solutions, and experimental findings that are intended to provide a contribution to all subjects associated with the aforementioned issues in smart grids and smart cities.

Topics of interest include, but are not limited to:

- The role of IoT in various domains of smart grids (i.g., intelligent transportation systems)
- Smart grid data analytics for enhanced resilience
- Identification of weaknesses of smart grids against faults and FDI attacks and anomalies
- AI-based techniques in power system operation and planning
- Impact of market mechanisms on grid resilience and security
- Novel theories, concepts, and paradigms of the convergence of IoT, AI, blockchain, and edge–cloud
- Framework, algorithms, and protocol design for distributed computing and IoT cloud
- Scheduling, deployment, monitoring, benchmarking, and metering for IoT-enabled energy grids
- Machine learning, AI, and other innovative approaches for smart cities and grids.
- Distributed Ledger Technology (DLT), blockchain, and smart contract in cyber-physical systems

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Hossein Shahinzadeh (Member, IEEE) was born in Isfahan, Iran, in 1987. He graduated from the Iranian Center of Excellence in Power Systems, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, with a scientific education in electrical engineering. Since September 2015, he has been an Academic Member of the Islamic Azad University of Najafabad's (IAUN) Department of Power Engineering, Faculty of Electrical Engineering. In Tehran, he works as an Associate Researcher at the Iran Grid Secure Operation Research Institute, AUT, and the Nirop Research Institute (NRI). He is also a Senior Scientist at SMRC, IAUN, Isfahan, where he works in the subject of smart city research. The Internet of Things (IoT), artificial intelligence, metaheuristic optimization methods, big data analytics, blockchain, V2G integration, 5G technology in smart grids, renewable energy deployment, energy storage facilities, power markets, microgrids, and long-term energy planning are some of his research interests in smart grids.



Jalal Moradi (Member, IEEE) was born in Isfahan, Iran, in 1988. He graduated with a scientific education in power systems engineering. He works as an associate researcher at the Iran Grid Secure Operation Research Institute, Amirkabir University of Technology, Teheran, Iran. He also has scientific cooperation with Smart Microgrid Research Center, IAUN, Isfahan, Iran. His area of expertise includes electricity markets, smart grids, transactive energy trading, artificial intelligence and data science, optimization, uncertainty modeling, IoT, Big data analytics, Blockchain, renewable energy, and energy storage technologies.



Sudeep Tanwar (Senior Member IEEE, LMISTE, MACM, MCSI (World's Top 2% Scientists)) is currently working as a Professor of the Computer Science and Engineering Department at the Institute of Technology, Nirma University, India. Dr. Tanwar is a visiting Professor in Jan Wyzykowski University in Polkowice, Poland and University of Pitesti Pitesti, Romania. Dr. Tanwar's research interests include Blockchain Technology, Wireless Sensor Networks, Fog Computing, Smart Grid, and IoT. He has authored 02 books and edited 13 books, more than 200 technical papers, including top journals and top conferences, such as IEEE TNSE, TVT, TII, WCM, Networks, ICC, GLOBECOM, and INFOCOM. Dr. Tanwar initiated the research field of blockchain technology adoption in various verticals in 2017. His h-index is 38. Dr. Tanwar actively serves his research communities in various roles. He is currently serving the editorial boards of Physical Communication, Computer Communications, International Journal of Communication System, and Security and Privacy. He has been awarded the best research paper awards from IEEE GLOBECOM 2018, IEEE ICC 2019, and Springer ICRI-2019. He has served many international conferences as a member of the organizing committee, such as publication chair for FTNCT-2020, ICCIC 2020, WiMob2019, member of the advisory board for ICACCT-2021, ICACI 2020, workshop co-chair for CIS 2021, and general chair for IC4S 2019, 2020, ICCSDF 2020. Dr. Tanwar is a final voting member for IEEE ComSoc Tactile Internet Committee in 2020. He is a Senior Member of IEEE, CSI, IAENG, ISTE, CSTA, and the member of the Technical Committee on Tactile Internet of IEEE Communication Society.



Michela Longo (Member, IEEE) received the M.Sc. degree in information engineering and the Ph.D. degree in mechatronics, information, innovative technologies and mathematical methods from the University of Bergamo, Bergamo, Italy, in 2009 and 2013, respectively. She is currently an Associate Professor with the Department of Energy, Politecnico di Milano. Her research interests include electric power systems and electric traction. She is a member of the Italian Group of Engineering about Railways (CIFI) and the Italian Association of Electrical, Electronics, Automation, Information and Communication Technology (AEIT).



Nadeem Javaid (Senior Member, IEEE) received the bachelor's degree in computer science from Gomal University, Dera Ismail Khan, Pakistan, in 1995, the master's degree in electronics from Quaid-i-Azam University, Islamabad, Pakistan, in 1999, and the Ph.D. degree from the University of Paris-Est, France, in 2010. He is currently a Tenured Professor and the Founding Director of the Communications Over Sensors (ComSens) Research Laboratory, Department of Computer Science, COMSATS University Islamabad, Islamabad Campus. He has supervised 158 master's and 30 Ph.D. theses. He has authored over 900 articles in technical journals and international conferences. His research interests include energy optimization in smart/microgrids and in wireless sensor networks using data analytics and blockchain. He was a recipient of the Best University Teacher Award (BUTA'16) from the Higher Education Commission (HEC) of Pakistan, in 2016, and the Research Productivity Award (RPA'17) from the Pakistan Council for Science and Technology (PCST), in 2017.

Deadlines of the special session:

Full paper submission (maximum 6 pages):	March 26, 2023
Notification of acceptance:	April 30, 2023
Final submissions due:	May 14, 2023

All the instructions for paper submission are included at the conference website.

<https://gpecom.org/2023/guidelines/>