Sreenidhi Institute of Science and Technology, Hyderabad, India

ICICCSP 2022 Special Sessions
on

"Title of the special session"

Artificial Intelligence and IOT based Application in Engineering

<u>Aims & Scope of the Session (100-200 words):</u>

Artificial intelligence (AI) is intelligence established by machines, displayed by animal and humans. Any system that perceives its environment and takes actions that maximize its chance of achieving its goals. Artificial intelligence uses to describe machines that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving". The Internet of things (IoT) is a system of interconnected computing devices, objects such as machine, animals or people that are provided with unique identifiers with the ability to transfer data over a network. Computing is being transformed to a model consisting of services that are commoditized and delivered in a manner similar to utilities such as water, electricity, gas, telephony, etc. In such a model, users access services based on their requirements without regard to where the services are hosted. Several computing paradigms have promised to deliver this utility-computing vision. This also helps in automation of the system in industry through Science and Technology and Engineering like; Instrumentation, IT, Mechatronic, Telecommunication, Electrical, among few others. Currently, multilevel inverters are becoming widespread mainly for medium voltage – high power applications. The effort of the researchers and industry has leaded to a rapid advancement in designing new multilevel inverters, modulation techniques and control strategies. Other interesting research topics such as the fault tolerant operation, reduction of power losses, optimized control strategies and new applications have appeared recently. However, by and large, companies fail to systematically collect, store, analyze and use such data to improve process efficiency or meet other goals. So, these data sets need to be analyzed using AI or Machine learning concept that has experienced a boost in popularity among both academia and industry. This special session of the conference aims at providing an opportunity and platform to present and discuss recent advances in the field of IoT, Artificial Intelligent and Machine Learning independently and also as a confluence of ideas.

Topics of interest include, but are not limited to:

- ➢ Novel switched-source and switched-capacitor multilevel inverter topologies aiming at reducing device count
- ➢ Multilevel inverter operation under dynamic conditions
- ➢ Fault-tolerant multilevel inverter systems and their control
- ➢ Multilevel converters for grid connected applications such as renewable energy systems, active filter, STATCOM, FACTS and HVDC
- ➢ Carrier and non-carrier-based modulation and control schemes for power quality improvement
- ➢ AI techniques for power quality control in multilevel converters
- ➢ Advanced control schemes for harmonic control in multilevel inverters Machine Learning
- ➢ Machine learning and natural language processing
- ➢ Expert Systems
- ➢ Intelligent Systems
- ➢ Multi objective optimization
- ➢ Soft Computing and Agents
- ➢ IoT device or circuit design
- ➢ IOT Application in Engineering

Special Session Organizers (names and contact emails):
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Srinivas Sethi received his Master degree in Computer Application from Berhampur University, India in 1995, PhD in Computer Science from Berhampur University, India in 2011. He has25 years of experience in teaching and research. His research interests include Networking, Sensor and Cognitive Radio Network, Cloud Computing, Cognitive Science, BCI. He has published more than 80 Papers in reputed SCI/ Scopus/ Referred journals/ Conferences. He has produced 7 PhD holders and completed 9 research/ sponsored/ consultant Projects. **Prof. Sethi is presently working as a Professor in the Department of Computer Science Engineering & Applications at, Indira Gandhi Institute of Technology, Sarang, India.**

Ashima Rout received her.B.E. in ETC from Utkal University in   , Master degree in Communication from Jadavpur University, India in   , PhD in Computer Science from Utkal University, India in 2016. He has23 years of experience in teaching and research. His research interests include Networking, Cognitive Radio Network. He has published more than 80 Papers in reputed Scopus/ Referred journals/ Conferences. She has completed 2 sponsored research Project. **Prof. Rout is presently working as an Professor in the Department of Electronics and Tele-Communication Engineering at, Indira Gandhi Institute of Technology, Sarang, India.**

Dr. KAIBALYA PRASAD PANDA received the B.Tech. degree in electrical and electronics engineering from the Dr. M.G.R. University, Chennai, India, in 2011 and the M.Tech. degree in power electronics and drives specialization from the KIIT University, Bhubaneswar, India, in 2013. He has obtained the Ph.D. degree from Department of Electrical Engineering, National Institute of Technology Meghalaya in 2021. During his Ph.D, he has worked on "Development of Reduced Switch and Reduced Source based Multilevel Inverters for Renewable Energy Application". Currently, Dr. Panda is working as Ad-hoc faculty at NIT Andhra Pradesh. From 2013 to 2017, he was an Assistant Professor with the Department of Electrical Engineering, C. V. Raman College of Engineering, Bhubaneswar, India. He was also a visiting scholar with the University of Warwick, U.K., funded under the Joint UK-India Clean Energy program during Jan-March 2019. Dr. Panda was a recipient of several travel grants and Institute Best Research Award for outstanding research. He has authored/co-authored over 10 IEEE Transactions and reputed journals and also filed two patents. Recently, he has been listed in World's Top 2% of Researchers under the Energy category as per the Stanford University list.