Next Generation Artificial Intelligence and Energy Sustainability

Dr. Celestine Iwendi
School of Creative Technologies
University of Bolton, UK

ICADS '22 Invited Talk

Abstract— The industry is on a mission to capture the business value that comes with the Next Generation Artificial Intelligence in the context of Industry 5.0 and Energy 5.0 as regarding the provision of renewable energy production facilities. This has greatly increased the need to address the cyber risk landscape with a secure, vigilant, and resilient response and system in place. This marriage of algorithms, processes, and ingenuity will enable humans and machines work together utilizing human-centric design solutions in collaboration with human resources to enable sustainable, personalized, and autonomous manufacturing through enterprise social networks. This talk will analyse how AI could engender better and more informed decision-making during crisis management scenarios. Furthermore, we shall elaborate how Industry 5.0 actively encourages and enhances the relationship between humans and robots in a cyber-physical domain and in the field of energy consumption, while also relying on advanced five-sense and hologram-based communications.

Keywords— Industry 5.0, Energy 5.0, cyber risk, human-centric design, autonomous manufacturing, enterprise social networks

■ 1. **Speaker Profile** CELESTINE IWENDI is an IEEE Brand Ambassador as well as a visiting Professor with many universities including Coal City University, Nigeria; School of Computing, Faculty of Engineering, BIHER, India; and the School of Computing & Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, India.

He also serves as an Honorary Adjunct Professor and Investigator in the Center of Excellence in Robotics and Mechatronics, ITM Baroda University, India; Adjunct Professor, Delta State Polytechnic, Nigeria; Honorary Professor in the School of Computing Science and Engineering, Galgotias University, India; and an Associate Professor (Senior Lecturer) in the School of Creative Technologies, University of Bolton, United Kingdom. He is a Fellow of the Higher Education Academy, United Kingdom, and a Fellow of the Institute of Management Consultants.

His past assignments include Associate Professor, Bangor College China; Senior Researcher, WSN Consults Ltd, United Kingdom; Electronics and Sensor Researcher, University of Aberdeen, United Kingdom; and Lead Electronics Engineer, Inscentinel Ltd, United Kingdom. He received his Ph.D. in Electronics from the University of Aberdeen, United Kingdom, his MSc in Hardware Engineering from Uppsala University, Sweden, and his MSc and BSc in Electronic Engineering from Nnamdi Azikiwe University, Nigeria. He supervises/co-supervises several graduate (MSc and Ph.D.) students and mentors ACM student members at SAGE University Indore, India.

His research interests include Artificial Intelligence (AI), Internet of Things (IoT), wireless sensor networks, network/cybersecurity, machine learning, and data networks. He has authored over 60 peer-reviewed articles. He has served as chair (program, publicity, and track) in top conferences and workshops. He has delivered over 65

invited and keynote talks. He is a Distinguished Speaker, ACM; Senior Member of IEEE; Member, ACM; Member, IEEE Computational Intelligence Society; Senior Member, Swedish Engineers; Member, Nigeria Society of Engineers; and Member, Smart Cities Community, IEEE.

He is the Branch Counsellor of the IEEE University of Bolton Student Branch and a Board Member of the IEEE Sweden section. He mentors several Ph.D. students in Artificial Intelligence, robotics, Internet of Things and blockchain. He has developed operational, maintenance, and testing procedures for electronic products, components, equipment, and systems, and has also provided technical support to several organizations. He is a community developer, philanthropist and an international speaker in many top conferences and webinars. Dr. Celestine is listed among the 2% top-scientist list. The list has been prepared by Stanford University and published by Elsevier— https://lnkd.in/gVeV6CjB

Event Recording from June 14
Open House, Machine Learning, The Mortar of Modernization
Dr. Vishnu S. Pendyala
https://youtu.be/0T3DtvsMkK8