

EXPERT PROFILE

DR. MOAMIN A MAHMOUD



- Position: Head of Unit (IICE), Senior Lecturer (College of Computing and Informatics)
- Years of professional experience: 10 years
- Research Centre: Institute of Informatics and Computing in Energy (IICE)
- **Research Forte:** Distributed and Autonomous Systems, Complex Adaptive System, Internet of Things (IoT), and Collective Intelligence in Drones Technology, Energy Informatics.

EDUCATIONAL BACKGROUND

- PhD in ICT, Universiti Tenaga Nasional (UNITEN), 2013.
- Master in IT, Universiti Tenaga Nasional (UNITEN), 2010.
- B.Sc. in Mathematics, University of Mosul, 2007.

PROFESSIONAL EXPERIENCE

Moamin A Mahmoud is currently a head of unit with the Institute of Informatics and Computing in Energy (IICE), Universiti Tenaga Nasional. His core expertise is in the area of Artificial Intelligence. However, he has a wide range of research interest, which includes Distributed and Autonomous Systems, Internet of Things, and Energy Informatics. Moamin has Recently been working on three projects, one to develop a Scalable Lightweight Blockchain Integrated Model (LightBlock) to enable the use of the blockchain in the context of the IoT; another project to formulate an evaluation framework to measure a configuration effectiveness of an IR4.0 smart application through employing significant evaluation indicators; and the last one to develop a predictive maintenance model using smart meter data for fault prediction and location in the power distribution grids. He has produced more than 90 articles of indexed journals, book chapters, and conferences. Based on his good reputation in the Field of "Autonomous and Distributed Systems", Moamin has been invited by several Bodies to serve in consultancy projects. He was the leader for a project with Integrated Learning Solution SDN. BHD to develop an agent-based automated monitoring and evaluation framework and integrate it to the LMS system. Another consultancy project with National Defence University of Malaysia led by Moamin to develop an agent-based automated negotiation model for decision making in construction domain. Moamin is also actively involved in a project with the Center for Sustainable and Inclusive Development Studies (SID), Universiti Kebangsaan Malaysia, to develop an agent-based computational economic (ACE) model that analyses the roles of the current energy policies in Malaysia and proposed emission trading scheme (ETS) towards electricity decarbonization. Moamin's research work has highly been recognized by Universiti Tenaga Nasional, he received number of awards in various categories such as Highest Citations, Highest H-Index, Highest Journal Ranking, Highest Number of Indexed Publications, and recently received Publication Excellence Award.

KEY PROJECT HIGHLIGHTS:

- A Security Enhanced Access Control Protocol for IoT-Based Smart Home Devices Using Blockchain Technology, May 2019 – August 2020. Role: Project leader.
Description: this project aims to propose a Scalable Lightweight Blockchain Integrated (LightBlock) model to enable the use of the blockchain in the context of the IoT applications. To achieve this goal.
- Development of Energy Smart Grid Ontology, March 2018 - August 2019. Role: Project leader.
Description: This project aims to provide flexible software platforms that can process data from a variety of sources, especially electronic sensor networks.
- A Task-oriented Multi-agent Collaboration in Drone Operations, February 2016 – July 2017. Role: Project member.
Description: we propose an intelligent task-oriented system in drone operations which comprises of multiple agents working concurrently to solve a problem or achieve a common goal driven by an adjustable autonomy algorithm.