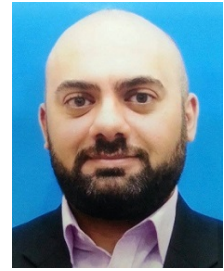


## EXPERT PROFILE

### IR. DR. SAMI SALAMA HUSSEN HAJJAJ

- Position: Senior Lecturer, College of Engineering, Universiti Tenaga Nasional (UNITEN)
- Years of professional experience: 15 years
- Research Centre: Institute of Informatics and Computing in Energy (Associate)
- **Research Forte:** Robotics, Automation, Internet of Things (IoT), Resources and Infrastructure Management, Human-Robot-Interaction (HRI), Field Robotics, The Robot Operating System (ROS), Robot Software, Cloud-Based Robotics, IoT-based Robotics.



## EDUCATIONAL BACKGROUND

- PHD in Engineering | Robotics | Universiti Tenaga Nasional (UNITEN)
- Master of science (Mech. Eng.) | Int. Islamic University Malaysia (IIUM)
- Bachelor of Engineering (Manufacturing Eng.) | Int. Islamic University Malaysia (IIUM)



## PROFESSIONAL EXPERIENCE

For his degree (Mechanical), Ir Dr Sami Hajjaj majored in Manufacturing Engineering and Technology. In his Masters (Manufacturing), he focused on Mechatronics. For his PhD, he worked on Robot Software, on implementing the Robot Operating System (ROS) in agriculture automation. This diverse background enabled him to work on multidisciplinary fields, such as automated systems, robotics, and since 2016, the Internet of Things (IoT).

As of today, Ir Dr Sami Hajjaj's work on IoT covers agriculture precision, vehicle safety, asset management, centralized water control, IoT-based robotics, and recently, IoT-enabled drones. From these works, he filed 3 patents, published several papers, and won a number of international innovative design awards and funding. Since Nov 2018, he also conducted several trainings in Malaysia, Taiwan, and Indonesia on IoT strategies and system development, and in 2019, he developed and conducted own IoT core-courses for his University's Mechanical Engineering program.

Ir Dr Sami Hajjaj is Professional Engineer (PEng), with the board of engineers Malaysia, a Chartered Engineer (CEng) with the Institute of Mechanical Engineers (IMechE) United Kingdom, a Senior Member of IEEE (SMIEEE), and a Certified IoT Specialist (CIoTs) with MIMOS Malaysia.

## KEY PROJECT HIGHLIGHTS:

- **Vehicle Location and Performance Monitoring System for Resources Management and Effective Utilization.**  
An all-out Resource Management System that utilizes the Internet of Things for: 1) streamlining processes, 2) maximize profits, and 3) generate new income from IoT Data. 1 Patent, 1 Q1 Journal, Gold Medal Winner at MTE2020, as well as national/international design innovation awards.
- **A Centralized Water Management System through the Internet of Things (IoT)**  
A cost-effective, retrofitting, expandable solution for water way management system, ideal for agriculture applications, flood mitigation, and water cooling for power plans and industries. 1 Patent, 1 Q1 Journal, Gold Medal Winners at ITEX2018, as well as other national/international design innovation awards.
- **Effective Adoption of Innovative Technologies in the TV & Film Industry: The IoT Robotic Camera Dolly**  
In collaboration with TV Al-Hijrah, the development of a remotely-operated Robotic Camera Dolly, allowing TV directors and crew to interact with a remote camera while in the comfort of their home studio. This system was developed and demonstrated at the studios of TV al-Hijrah, with great success.
- **Utilizing the Robot Operating System (ROS) in out-door agriculture applications**  
Automating outdoor, open-field agriculture operations is one of the biggest challenges in Agriculture Robotics and Automation. This project successfully utilized ROS to implement an open-source out-door agriculture robot.