

Muhammad Irsyad bin Murtadha

Subang Jaya, Selangor | +60-183804497
irsyad493@gmail.com



Summary

As a **research officer** at MIMOS Berhad, I **possess** strong analytical, communication, and coordination skills. I'm **passionate** about **learning** and **keeping up** with the latest developments in the field, particularly in the context of **Industrial Revolution 4.0**. I'm eager to **broaden** my knowledge and skillset to become a more proficient professional in this field.

Experience

MIMOS Berhad | Kuala Lumpur, Kuala Lumpur
Research Officer | 06/2022 - Present

I am currently involved in a project called **AIREM** (Artificial Intelligence Residential Monitoring), which is being funded by **MOSTI** (Minister of Science and Technology). The aim of this project is to develop a single sensor that collected high frequency data (**voltage** and **current**) that can be attached to the main distribution box in a house, and use **AI algorithms** to disaggregate the combined signal from multiple appliances. By doing so, **AIREM** will enable homeowners to monitor their energy usage and identify the appliances that consume the most energy, thus helping them to save money on their utility bills.

As a **Research Officer**, my responsibilities have included:

1. **Collecting high frequency** data (Instantaneous Voltage and Current) using a **Digitizer Card** attached to a computer.
2. **Developing** data **preprocessing** modules in Python to extract features from high frequency data.
3. **Conducting** research on Non-Intrusive Appliance Load Monitoring (**NIALM**) algorithms by analyzing research papers and providing feedback to the team.
4. **Implementing** research methods from papers using Python (**Jupyter Notebook**) and MATLAB (**MATLAB Live Editor**).
5. **Training** Machine Learning **models** using extracted features from high frequency data with Python Scikit-learn Package.
6. Building a Python **simulator** with multithreading programming to simulate the sensor performance.
7. Designing monitoring **dashboard** for data from Python Simulator using IOT ThingsBoard platform by connecting it with Python Simulator.
8. Providing two research **reports** for company internal evaluation.
9. Conducting a **Survey** Report for marketing strategy.
10. Become the main **author** of research paper for IEEE Control & System Graduate Research Colloquium (ICSGRC 2023).

Education

KISMEC | Sungai Petani, Kedah
Experiencing Sensor and IOT | 04/2022

1. **Learn** basics of **networking** system (Wi-Fi Configuration, Cable Installation and etc.).
2. Utilizing **microcontrollers** (Arduino, Esp32) by using **Arduino** Programming Language.
3. **Implementation** and understanding of the **MQTT Broker** (Hivemq, AdaFruit).
4. Create some **IOT mini projects** (Temperature and Humidity Monitoring, Voice Command, Servo Motor Control and etc.)
5. Understand the **implementation** of machine to **machine communication** through the use of Bosch **IoT Gateway**.
6. **Learn** about the **application** and **importance** of sensors technology in Internet of Things.
7. **Practice programming** the Bosch XDK 110 sensors to send data to Bosch IoT Gateway.
8. **Store data in database** (SQL) and implement basic data visualisation.

Universiti Teknologi Malaysia | Johor Bahru, Johor
Bachelor of Engineering (Nuclear) | 08/2021

1. Graduated with **CGPA: 3.28**
2. **Writing MATLAB** code for simulation program to visualize neutron flux in homogeneous and thermal reactor for Final Year Project. The code is **delivered** to the lecturer for **assisting** the junior students for better understanding of visualizing neutron flux
3. **Group Leader** in Nuclear Power Plant Design. Creating a **documentation** for Advance Pressurized Water Reactor
4. **Sports and Special Task Officer** of Nuclear Engineering Student Society (NESS) for 2019/2020 session. **Managing** the society's members data and **assisting** in organizing the events held by the society's members.
5. **Representing Rugby College Team** for UTM Sports Day in 2017/2018 (Kolej Tun Hussein Onn (**KTHO**)) and 2019/2020 (Kolej Datin Seri Endon (**KDSE**)) session.

Skills

Python, SQL, Microsoft Excel, Microsoft Word, Linux, Java, JavaScript, HTML, CSS, Python

References

Yong Keh Kok (Principal Researcher MIMOS Berhad)

+6016-2337672/kk.yong@mimos.my

Mr. MOHAMAD WIJDAN BIN MOHD ARIFF (Senior Trainer Kedah Industrial Skills and Management Development Center)

+6017-3602908/wijdanariff@kismec.com

MR. HALIM BIN ABDUL RAHMAN (Chief Assistant Director Atomic Energy Licensing Board)

+6017-6553486/halim@aelb.gov.my

DR. MOHSIN BIN MOHD SIES (SENIOR LECTURER UTM SKUDAI)

+6012-711 9506/mohsin@utm.my