AMIRUL ADAM BIN MD SHAH

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ABOUT ME

Electronic Engineering graduate with hands-on experience in system support, embedded systems, IT troubleshooting, digital solutions, and data analytics. Experienced in Python automation, Linux environments, hardware-software integration, RFID access control systems, website development, and technical support. Skilled in system monitoring, root cause analysis, incident troubleshooting, and documentation. Strong ability to analyze technical issues, collaborate with cross-functional teams, and implement reliable solutions to improve system availability, performance, and user experience.

Skills:

Technical Skills:
Python Programming | Data Analytics & Visualization | Linux (Ubuntu) | Hardware Troubleshooting | Embedded Systems | PCB Prototyping & Soldering | Electronic Circuit Debugging | Root Cause Analysis (RCA) | Failure Analysis | Production Testing | Test Automation | Manufacturing Data Analysis | KPI Dashboard Development | Exploratory Data Analysis (EDA) | Data Cleaning & Validation | New Product Introduction (NPI) | GRR & Test Validation | FPGA Platform Support | NVIDIA Orin Platform Support | RFID/UHF Systems | IoT System Integration | AutoCAD | MATLAB | Multisim | Proteus | Microsoft Excel | Power BI | SQL (Basic) | Technical Documentation & Reporting | System Monitoring | Equipment Inspection | Basic Networking (LAN/TCP/IP/Wi-Fi) | System Installation & Validation | Cross-Functional Engineering Collaboration | Safety & Quality Compliance

Soft Skills:
Problem Solving | Analytical Thinking | Critical Thinking | Technical Troubleshooting | Communication Skills | Team Collaboration | Leadership | Adaptability | Fast Learning Ability | Initiative | Responsibility | Attention to Detail | Time Management | Organizational Skills | Project Coordination | Decision Making | Customer Service Orientation | Professionalism | Work Under Pressure | Continuous Learning | Safety Awareness | Quality Improvement Mindset | Shift Work Readiness

WORK EXPERIENCE

Altek Medical Sdn Bhd
Management Trainee (Data Analytics & Engineering) (2025 – 2026)

- Analyzed manufacturing and production test data to identify system anomalies, defect trends, yield degradation and process inefficiencies.
- Developed Python scripts for automating data processing, log analysis, reporting and test automation in VistaX test environment.
- Conducted data cleaning, validation, and Exploratory Data Analysis (EDA) on SFCS and production datasets for data integrity and traceability.
- Performed Root Cause Analysis (RCA) and failure analysis to identify defect mechanisms and corrective improvements.
- Developed KPI dashboards and performance reports for yield monitoring, defect tracking and test station efficiency.
- Provided support for the Linux (Ubuntu)-based system testing, hardware-software integration and engineering validation workflows.
- FPGA and NVIDIA Orin platform validation, including firmware testing and embedded system validation.
- Conducted board level failure analysis, including functional testing, solder inspection, and X-ray analysis.
- Supported new product introduction (NPI) activities by performing GR&R studies, developing SOPs, and validating tests.
- Worked with engineering, production and quality teams across functions to solve technical problems and increase system reliability.

EMTEX CTS Sdn. Bhd.

Technical Assistant (2024 - 2025)

- Worked with EMTEX CTS Sdn. Bhd. for technical guidance and evaluation to develop a 4G RF Detector Radiation System as an independent project for an engineering competition
- Designed and implemented RF detection system with ADL5902 RF Power Detector for RF signal power measurement for communication engineering applications.
- Designed RF circuits, integrated hardware, implemented PCB, calibrated, tested and validated systems for system accuracy and reliability.
- Performed experimental testing and performance analysis in various RF signal environments to assess detector accuracy and enhance system performance.
- Fixed hardware problems interpreted measurement results and designed improvements to optimise the prototype performance.
- Created technical documentation, test reports and project presentation material for engineering evaluation and competition participation.
- Designed and developed a prototype of RF detector on FR-4 PCB substrate using ADL5902 RF Power Detector and ESP32 microcontroller for measurement and real-time monitoring of RF signal.
- Simulated and optimised antenna using CST Microwave Studio, then calibrated and tested using S-parameter with VNA for antenna performance validation.

FREELANCE PROJECT

Wedding Website Development | Freelance Web Developer | 2025 – 2026

- Designed and developed a custom wedding website based on client requirements with focus on user experience, functionality and responsive design.
- Involved in all phases of full life cycle of website development process from gathering requirements, planning design, implementation, testing to deployment.
- Developed interactive website features such as event information pages, digital invitations, RSVP functionality, image galleries and UI elements.
- Executed website testing, troubleshooting, content updates and technical support to ensure smooth operation after deployment.
- Collaborated directly with clients to ascertain their requirements, provide technical solutions and implement enhancements based on their feedback.
- Provided a reliable web-based platform using programming, problem solving, and digital solution development skills.

Madinah Food Industries Sdn. Bhd.

Part-Time Sales & Marketing Assistant | 2021-2023

- Supported sales activities and customer engagement while developing communication and relationship -management skills and assisted in product promotion and coordinated with customers to understand requirements and improve service delivery.
- Monitored customer feedback and contributed to sales reporting and operational coordination.
- Developed experience in presenting product information and supporting business growth initiatives.

INTERNSHIP

Electric Library (Malaysia) Sdn. Bhd.

- Assisted with the construction and troubleshooting of smart access systems based on RFID/UHF and facial recognition, displaying a solid understanding of IoT integration and AI-based system behavior.
- Involved in PCB prototyping, soldering, and signal validation to facilitate hardware-software integration, which is critical for intelligent edge device deployment.
- AutoCAD was used for schematic layout and design validation, as well as system documentation and reporting that adhered to technical requirements.
- Functionality testing, data validation, and user feedback collecting were all carried out in accordance with data-driven improvement and AI model refining concepts.
- Led the development of a Smart Door Lock System on Falcon's embedded platform, showing embedded AI logic integration, microcontroller interface, and end-to-end system validation.

EDUCATIONAL BACKGROUND

- Master of Electrical Engineering (By Research) | Part-Time 2026 – Present
- Research focus: AI-based detection systems using deep learning and computer vision techniques for intelligent recognition and classification applications.
- University Tun Hussein Onn (Bachelor of Electronic Engineering with Honours) 2021 - 2025
- Polytechnic Merlimau Malacca (Diploma in Electronic Engineering (Communication)) 2018 – 2021

PROJECT

Radio Frequency Detector

Project Lead / Owner | 2024–2025

- Designed RF Detector system for accurate detection of RF signal power and real time monitoring in communication engineering applications.
- Designed and implemented an RF detection circuit using the ADL5902 RF Power Detector integrated with ESP32 for the purpose of signal processing and data monitoring.
- Designed and built a FR-4 PCB prototype, including circuit integration, hardware assembly, calibration, testing and system validation.
- Designed and simulated antennas in CST Microwave Studio and used Vector Network Analyser (VNA) testing and calibration to assess antenna performance.
- Performed experimental analysis, RF signal measurement and performance evaluation under different operating conditions to ensure system accuracy and reliability.
- Designed the real-time monitoring capability based on Blynk IoT platform, data analysis and performance evaluation based on MATLAB.
- **Awards:**
- Gold Award – Final Year Project, Universiti Tun Hussein Onn Malaysia (2025)
- Best Project in Communication Engineering Cluster, Universiti Tun Hussein Onn Malaysia (2025)
- **Technologies:** ADL5902 RF Power Detector, ESP32, Arduino IDE, FR-4 PCB, CST Microwave Studio, MATLAB, Blynk IoT, Vector Network Analyzer (VNA), Microstrip Patch Antenna (2.6 GHz), RF Circuit Design, Antenna Calibration, Signal Measurement, PCB Design, Hardware Testing, System Validation

Water Quality Monitoring System With SMS Alert Notification
Embedded Systems Project | 2024–2025

- Developed an IoT-based Water Quality Monitoring System for continuous real-time monitoring of pH, turbidity, and temperature to ensure safe water quality under normal and emergency conditions.
- Designed and integrated Arduino, water quality sensors, SIM900A GSM module, and a DC-AC power converter to provide reliable SMS notifications when abnormal water quality parameters exceeded predefined safety thresholds.
- Implemented real-time data acquisition, sensor monitoring, and threshold-based alert mechanisms to enable rapid emergency response and improve water quality management.
- Performed hardware integration, sensor calibration, circuit testing, troubleshooting, and system validation to ensure accurate measurements and reliable operation in various environmental conditions.
- **Awards:** Gold Award – Integrated Design Project (IDP) Showcase Day, Universiti Tun Hussein Onn Malaysia (2025)
- **Technologies:** Arduino Uno, SIM900A GSM Module, DC-AC Power Converter, pH Sensor, Turbidity Sensor, Temperature Sensor, IoT, Embedded Systems, Sensor Integration, GSM Communication, SMS Alert System, Data Acquisition, Hardware Testing, System Validation, Real-Time Monitoring, Electronic Circuit Design

EXTRACURRICULAR ACTIVITIES

- Student Project Evaluation Panel – University Tun Hussein Onn, 2026
- BEM Graduate Engineer Certificate – Board Of Engineer Malaysia, 2026
- IEM Graduate Engineer Membership – The Institution Of Engineers, 2026
- International Islamic Science Innovation & Invention Competition 2022 (Bronze) - University Tun Hussein Onn, 2022
- Data Science with Python: Concepts and Demonstration – University Tun Hussein Onn Malaysia, 2021
- NIOSH Safety Passport (Green Card) – Certified by the National Institute of Occupational Safety and Health (NIOSH)
- Sign Language for All (BIUS) – University Tun Hussein Onn Malaysia, 2021
- Videography Workshop – University Tun Hussein Onn Malaysia, 2021
- TM Fiber Optics Training: Installation, Connection, Testing & Maintenance, 2020

REFERENCES

Prof. Dr. Syarfa' Zahirah binti Sapuan

- Supervisor of Final Year Project, Universiti Tun Hussein Onn Malaysia
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En Muhammad Azhad Zikry Bin Nazli

- Supervisor Engineer Altek, Altek Sdn Bhd
- Phone: +60 11-1535 3438