

MAAZ SALAH AHMED MOHAMED

Electronics Engineer - Embedded Systems, IoT & AI Solutions

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Saudi Driving License | Valid Membership in the Saudi Council of Engineers

SUMMARY

Results-driven Electrical and Electronics Engineer with 5 years of experience specializing in advanced Printed Circuit Board (PCB) design, embedded systems, IoT solutions, Artificial Intelligence (AI), and Python automation. Proficient in managing and analyzing big data and executing accurate data entry workflows. Proven track record in prototyping and deploying innovative electronics projects, including robotics, smart automation devices, and Graphical User Interfaces (GUI). Expert in hardware-software integration, cross-platform environments (Windows & Linux), microcontroller programming, and technical troubleshooting. Demonstrated leadership in steering technical volunteer initiatives and delivering hands-on engineering training, supported by Cisco certifications in Python, Ethical Hacking, and Cybersecurity.

CORE SKILLS

Technical Skills: Embedded Systems, Internet of Things (IoT), Artificial Intelligence (AI), Python Programming (Embedded Systems, GUI Development, Automation), PCB Design, Manufacturing Processes, Data Entry, Big Data Processing & Analysis

Hardware & Systems: Microcontrollers & Single-Board Computers (Arduino, ESP32, Raspberry Pi, NVIDIA Jetson), Sensor Integration, Hardware-Software Interfacing, Operating Systems (Windows, Linux)

Software & Engineering Tools: Altium Designer, Visual Studio, Microsoft Office Suite (Word, Excel, PowerPoint), Core Computer Proficiency

Soft Skills: Technical Training, STEM & Youth Mentoring, Problem-Solving, Team Leadership, Critical Thinking, Effective Communication, Teamwork

EXPERIENCE

Freelance Electrical & Electronics Engineer

Remote | 02/2019 - Present

- Engineered and prototyped 15+ custom Printed Circuit Boards (PCBs) using Altium Designer, managing the end-to-end lifecycle from schematic layout to final manufacturing processes.
- Developed and deployed Python automation scripts and Graphical User Interfaces (GUI) within Visual Studio, reducing data processing time by 30% and optimizing overall system operations.
- Programmed and integrated robust embedded systems utilizing microcontrollers (including ESP32, Arduino, Raspberry Pi, and NVIDIA Jetson) across Windows and Linux environments to meet diverse client requirements with 95% operational reliability.
- Architected Internet of Things (IoT) and Artificial Intelligence (AI) solutions, specializing in seamless sensor integration, big data handling, and wireless device communication, improving remote monitoring efficiency by 40%.
- Delivered comprehensive technical support and systematic troubleshooting to resolve complex hardware and electronic circuitry issues, achieving a 100% client satisfaction rate.

PROJECTS

AI-Powered Smart Assistive & Security Glasses for the Visually Impaired

08/2024

- Developed an integrated AI-driven navigation and security system utilizing NVIDIA Jetson, camera modules, and AR glasses to assist visually impaired individuals.
- Implemented real-time computer vision models for object detection, obstacle avoidance, and facial recognition, achieving over 90% detection accuracy to trigger automated safety audio alerts.

Automated & Remote-Controlled Multi-Axis Robotic Arm

03/2020

- Built and configured a multi-axis robotic arm controlled by a Raspberry Pi and high-torque servo motors for precise vertical and horizontal object manipulation.
- Integrated camera modules and IR sensors to enable autonomous computer-vision sorting, increasing sorting efficiency by 35% and securing manual remote operation.

Smart Agricultural Greenhouse with Wireless Sensor Network (WSN)

07/2019

- Architected an automated smart greenhouse system utilizing Raspberry Pi, ESP32, and ESP8266 microcontrollers communicating over a Wireless Sensor Network (WSN).
- Eliminated complex physical wiring by establishing wireless node-to-gateway communication, integrating distributed soil sensors to reduce water consumption by 40% through autonomous precision irrigation.

Universal IoT Home & Office Automation System

05/2019

- Engineered a retrofitting IoT solution to convert standard electrical appliances into smart, remotely controlled devices using ESP8266 microcontrollers and relays.
- Developed cloud-based control protocols to enable secure, real-time wireless switching (ON/OFF) of appliances via remote user inputs, reducing energy waste by up to 25%.

Smart Assistive Sign Language Translator (Graduation Project)

09/2018

- Designed and prototyped a two-way communication assistive device using a Raspberry Pi 3 and smart gloves embedded with flex sensors.
- Programmed the system to translate sign language gestures into text/speech with high precision, converting spoken audio and text files back into visual sign language via an integrated display.

EDUCATION

BSc in Electrical and Electronic Engineering (Communication)

AI-Neelain University - Khartoum, Sudan | 09/2018

CERTIFICATES

- Cisco Python Essentials 1 — 08/2025
- Cisco Python Essentials 2 — 08/2025
- Cisco Ethical Hacker — 08/2025
- Cisco Introduction to Cybersecurity — 08/2025

VOLUNTEER WORK & LEADERSHIP

Volunteer Member & Co-Founder

IEEE (Institute of Electrical and Electronics Engineers) | 10/2013 - 09/2018

- Co-founded and successfully established the official IEEE student branch at Al-Neelain University.
- Spearheaded the organization of 10+ technical seminars, engineering competitions, and educational workshops for over 200 students.

Deputy Executive Director

Junior Innovators Team — Khartoum, Sudan | 01/2020 - 02/2021

- Co-led organizational operations and strategic planning, coordinating technical training activities and volunteer schedules.
- Designed and delivered comprehensive STEM curriculums, teaching electronics fundamentals and basic programming to 50+ young learners.
- Managed and supported overall educational activities, ensuring seamless execution of training sessions.

LANGUAGES

- **Arabic:** Native
- **English:** Professional Working Proficiency