Abdelrahman Elawady

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Education

University of Prince Muqrin UPM — Madinah, Saudi Arabia
- B.Sc. in Electrical Engineering — Sep 2023 – Expected 2027

Experience

Summer training intern — Jun 2025 – Present

Jabal Al-Alam company JAA (Delta Controls partner) – Madinah, Saudi Arabia
- Assembled and configured 100+ BMS classic control electrical panels and developed I/O lists in Excel for GRMS and BMS applications, ensuring accurate mapping and efficient system configuration.
- Programmed building automation controllers using GCL+, and configured database software objects via BACnet, MS/TP, Modbus, Linknet and Ethernet/IP network protocols.
- Assisted in testing, commissioning, and troubleshooting of BMS field devices and panels (MCCs, DDCs, AHUs, Chillers, pumps), and created AutoCAD layouts and real-time monitoring graphics.

Academic projects

Sophomore Ionic Plasma Thruster project — May 2025
- Engineered a fuel-less ionic propulsion system using high-voltage corona discharge and plasma wind, leading the team to win 1st place in the UPM's All-Classes Electrical Engineering Competition.
- Designed and implemented a ZVS flyback driver circuit and voltage multiplier, achieving efficient high-voltage AC generation and enabling a fully functional, 3D-printed prototype with zero moving parts.

Smart LED Display Systems for Campus Offices — Nov 2024 – Feb 2025
- Designed and installed Bluetooth-enabled LED display systems for the Dean's Office and Career Center using ESP32 microcontrollers, optimizing RAM, DMA and flash memory, & integrating UART serial communication.
- Deployed custom web app and engineered cost-effective solutions that reduced implementation costs by approximately 75% compared to commercial alternatives with low maintenance for professional environments.

Freshman physics competition project – 2nd place — May 2024
- Collaborated with a colleague in a trial-and-error approach to design and construct a low-budget DIY axial flux electric generator using 250-loop coils and magnets mounted on a CD disk, resulting in 3V output.

Freshman signal analysis MATLAB project — May 2024
- Worked with a team designing and developing signal processing software that takes user-input, simulates adding noise to a signal, filters it with statistical algorithms & displays results on a graph for data visualization.

Research projects

Co-author researcher – AlUla Heritage and Tourism Research — Jun 2025
- Co-authored and reviewed a research paper published in Q2 GeoJournal (Springer Nature), exploring AlUla region in Saudi Arabia, contributing to literature review, data collection and writing.

Independent Programming projects

JavaScript to-do-list app — Jun 2023
- Created a JavaScript to-do-list web app that stores and retrieves data locally on the browser for task management.

Python Interactive covid-19 data visualization map — Jun 2021
- Developed an online interactive Covid-19 data map using python folium library and HTML I-frames.

Skills, Technologies & Interests

Skills &Technologies: MS (word, excel, PowerPoint), C++, Python, MATLAB, AutoCAD, Multisim, HTML, JavaScript.
Interests: creative scripts, scenarios, & content writing; Tutoring; graphic design on Canva

Leadership & Volunteering

- Electrical Engineering (ExZistence) club leader – UPM — Feb 2025 – Present
- 100+ hrs. Volunteering in various events and clubs including google developer student club (GDSC).