Muhammad Adan

THIRD-YEAR ELECTRICAL ENGINEERING STUDENT | ELECTRICAL TECHNOLOGIST

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PROFESSIONAL PROFILE

Third-year Electrical Engineering student at Lakehead University and Mohawk College Electrical Engineering Technology graduate. Professional experience at IRIS Power - Qualitrol includes electronic-instrument testing, PCB troubleshooting and repair, test automation, and technical documentation. Project work spans embedded systems, PCB design, and power electronics.

EDUCATION

Lakehead University | Thunder Bay, ON 2026–2028
Bachelor of Engineering, Electrical Engineering | **Third-year standing** | **Expected graduation: 2028**

Mohawk College | Hamilton, ON 2021–2025
Advanced Diploma, Electrical Engineering Technology | Graduated April 2025

TECHNICAL SKILLS

Testing & instrumentation: PCB fault isolation and repair; calibration and burn-in troubleshooting; oscilloscopes, multimeters, function generators, computerized test equipment.

PCB & embedded hardware: KiCad schematic capture and PCB layout; reading schematics and tracing signals; STM32 and Arduino; ST-LINK and UART serial communication.

Software & documentation: C# / Windows Forms; PSIM power-electronics simulation; Tera Term test macros and logging; work instructions and troubleshooting reports.

PROFESSIONAL EXPERIENCE

Electrical Technologist (Full-time) | IRIS Power - Qualitrol May 2025 – Jun 2026
Mississauga, Ontario

- Diagnosed, repaired, and retested faulty production PCBs, returning usable boards to inventory and reducing replacement needs.
- Investigated calibration and burn-in failures with oscilloscopes, multimeters, function generators, and computerized test systems.
- Developed Tera Term macros to repeat pulse-response tests and log instrument behaviour while investigating difficult-to-reproduce faults.
- Interpreted schematics and traced signal paths to isolate suspected component faults and verify repairs.
- Created and updated testing and assembly work instructions to make technical procedures more consistent.
- Logged troubleshooting findings, test results, and repair actions to support technical follow-up and quality records.
- Participated in troubleshooting meetings to review recurring failures and discuss corrective actions.

Electrical Technologist (Co-op) | IRIS Power - Qualitrol May 2024 – December 2024
Mississauga, Ontario

- Assisted with instrument testing, diagnostics, and laboratory test setups under established safety and quality procedures.
- Drafted and revised laboratory and field work instructions and supporting technical notes.
- Collaborated with team members on testing activities and troubleshooting tasks.

SELECTED ENGINEERING PROJECTS

STM32 Flight Controller PCB

Personal project

- Designed a flight-controller schematic and multilayer PCB in KiCad around an STM32 microcontroller with motion, pressure, and magnetic sensing interfaces.
- Developed a C# flight-instrument dashboard; board assembly started, with full hardware testing still pending.

DC–DC Buck–Boost Converter

Power Converters course project

- Built and bench-tested a converter that steps DC voltage up or down; evaluated performance across operating conditions and loads.
- Compared PSIM simulation results with oscilloscope captures and laboratory measurements.

Rotating Solar Phone Charger & Power Bank

Capstone project

- Built an Arduino-controlled solar charger with motorized sun tracking, power-bank charging, protection, monitoring, and status indication.

Arduino Oscilloscope Display & Custom PCB

Personal project

- Generated text and geometric patterns with an Arduino Nano for oscilloscope X–Y display; designed a custom PCB in KiCad.
- Investigated timing, output filtering, scaling, and display behaviour.

Motor Performance Analysis (AC & DC Drives)

Variable-Speed Drives course project

- Tested AC and DC motors under multiple operating conditions; recorded results, compared performance against expectations, and reported findings.

Desktop AI Assistant

Personal software project

- Built a desktop conversational assistant with task automation, custom script execution, and supporting workflow tools.

ADDITIONAL INVOLVEMENT

- Volunteered on the IRIS Power - Qualitrol social committee, helping organize employee events and activities.

References available upon request.