Ahmed Fathy
Computer Engineering Student

LinkedIn | GitHub | Portfolio

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OBJECTIVE

Motivated Computer Engineering student seeking an internship at Aeroqual to apply technical support background and engineering skills to the field of air quality and environmental sensing technology. Experienced in maintenance, calibration, and troubleshooting of Aeroqual monitoring systems and various scientific instruments.

EDUCATION

- **Cairo University, Faculty of Engineering** — Giza, Egypt
  B.Sc. in Computer Engineering; GPA: 3.6 — *2023 – 2027*

PROFESSIONAL EXPERIENCE

- **Al Nada Scientific Office** — Cairo, Egypt
  Technical Support Engineer (Part-time) — *June 2022 – 2024*
  - **Air Quality Monitoring Systems**: Provided technical support, maintenance, and calibration services for **Aeroqual Series 500** portable monitors and **AQM/AQS series** fixed monitoring stations, ensuring accurate real-time air quality data collection and compliance with environmental standards.
  - **Gas Detection Systems**: Performed troubleshooting, repair, and preventive maintenance on **Senko SI-100 series** and **MGT Multi-Gas Detectors**, including sensor replacement, calibration verification, and field deployment support.
  - **Environmental Instrumentation**: Maintained and calibrated diverse scientific equipment including **Casella** sound level meters and vibration monitors, **Kestrel** and **Davis** portable weather stations, ensuring measurement accuracy and regulatory compliance.
  - **System Installation & Field Support**: Conducted on-site installation, configuration, and commissioning of fixed and mobile monitoring stations, providing technical training to end-users and troubleshooting connectivity and data acquisition issues.
  - **Customer Consultation**: Delivered technical consultations to clients on instrument selection, calibration schedules, and best practices for environmental monitoring applications.

ENGINEERING PROJECTS

- **Tactic (Robotics & AI)** | *Embedded Systems, IoT, Computer Vision* Source Code | *2024*
  - **Real-Time Control System**: Developed browser-controlled robotics suite integrating AI computer vision with low-latency embedded hardware control using ESP32 microcontrollers and WebSocket communication.
  - **Sensor Integration**: Implemented YOLOv5 and OpenCV for real-time visual feedback processing and automated decision-making in robotic applications.

- **5-Stage Pipelined Processor (RISC)** | *VHDL, Computer Architecture, Embedded Systems* Source Code | *2025*
  - **Embedded System Design**: Engineered a 32-bit 5-stage pipelined processor in VHDL with custom ISA, implementing hazard detection and data forwarding for optimized throughput.
  - **Verification & Testing**: Validated functional correctness through rigorous simulation and testbench environments, demonstrating systematic debugging methodology.

TECHNICAL SKILLS

- **Engineering**: Embedded Systems, IoT Integration, Sensor Interfacing, Microcontrollers (ESP32, AVR/Arduino), Digital Signal Processing

- **Technical Support**: Instrument Troubleshooting, Calibration & Verification, Preventive Maintenance, Field Installation, System Commissioning

- **Environmental Instrumentation**: Air Quality Monitors (Aeroqual Series 500, AQM/AQS), Gas Detectors (Senko SI-100, MGT), Acoustic Devices (Casella), Weather Stations (Kestrel, Davis)

- **Programming & Software**: C/C++, Python, VHDL, Data Analysis, Embedded C, Real-Time Systems

- **Tools & Platforms**: Oscilloscopes, Multimeters, Calibration Equipment, Linux, Git, Data Logging Systems

Professional Competencies

- Technical problem solving and root cause analysis for complex instrumentation failures

- Customer consultation and technical training delivery to diverse audiences

- Field support coordination and on-site troubleshooting under time constraints

- Documentation of maintenance procedures and calibration records for quality assurance