

# Mueez Ali

**Mechatronics Engineer | Industrial Automation & Control Enthusiast**

📍 Lahore, Pakistan | 📞 +92 322 9304593 | ✉ [engineermueezmeca@gmail.com](mailto:engineermueezmeca@gmail.com)

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## Objective

Motivated **Mechatronics Engineer** with expertise in **Industrial Automation, Control Systems and Instrumentation**. Passionate about integrating **PLC and SCADA** to enhance industrial processes. Seeking opportunities to apply my knowledge in a dynamic and innovative environment.

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## Technical Skills

- ✓ **Automation & Control:** PLC Programming (Tia Portal, OpenPLC, RSLogix) PID Control
  - ✓ **Instrumentation:** Flow/Pressure/Temperature sensors, Transmitters, Control Valves, Pneumatics & Hydraulics
  - ✓ **Industrial Standards:** ISA/IEC standards, P&ID and Control Loop Design basics
  - ✓ **Software & Programming:** Linux, MATLAB, Python, C Language, SolidWorks
  - ✓ **Sensors & Actuators:** LiDAR, IR, Ultrasonic, Proximity, LDR, Thermistor, Pneumatic Valves, DC/Stepper/BLDC Motors
  - ✓ **Manufacturing & Robotics:** Maintenance, Pneumatics, Hydraulics, ROS-enabled Mobile Robots, Autonomous Navigation
  - ✓ **Data Analysis & Documentation:** Excel, Research, Technical Report Writing
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## Technical Projects

### ⚙ PLC-Based Automation & Control Systems

- Developed **4-way traffic control system** using **OpenPLC** for signal management.
- Led **automatic product alignment on conveyors** using **pneumatics and a latching mechanism**.
- Designed **industrial automation projects** utilizing **PID controllers** for precision control (e.g., Aero Pendulum, PID testing Instrument, Ball & Beam Balancing).

### ⚙ Instrumentation & Process Control

- Modeled and simulated **Ligasure bipolar vessel sealer** using MATLAB for signal conditioning and noise cancellation.
- Designed an **automatic mechanical ventilator** using the **TIVA microcontroller (Cortex-M Processor)**.
- Developed a Remote Switch device using **Bluetooth** and a TIVA Microcontroller.
- Developed a real-time system using LDR, motion sensors, and Arduino with Wi-Fi for **IFTTT/Gmail** notifications.

- Captured **vibration and current signals** and performed data acquisition with MATLAB for **fault detection** and **Predictive Maintenance**.

#### ✦ Robotics & AI Optimization

- Leading **fabrication and control of a ROS-enabled mobile robot** as FYP for education industry and research applications using **Jetson Nano**.
- Implemented Genetic Algorithms in **Python/C** for optimization problems (**N-Queen, Knight's Problem, Maze Solving**).
- Created Jumping Jack Motion Detector Counter using **OpenCV** and **GUI**, improving fitness tracking efficiency.

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### Professional Experience

#### ◆ Core Solar SMC Pvt. Ltd. – Automation & Operations Intern (June–Aug 2024)

- Led **solar power optimization project** improving energy efficiency.
- Conducted **system troubleshooting** for increased operational efficiency.

#### ◆ Orient Apparel – Electrical Maintenance Intern (June–Aug 2023)

- Diagnosed and resolved **electrical faults in automated production lines**.
- Assisted in maintenance of **industrial control panels**.

#### ◆ IET UET Lahore – Director of Public Relations (Aug 2024 – Present)

- Managed **strategic communication and event coordination** for 1000+ members.
- Built industry partnerships to organize **automation and technology seminars**.

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### Education

#### 🎓 BSc Mechatronics & Control Engineering

*University of Engineering & Technology (UET), Lahore | 2021–2025*

**Graduated in June 2025 | 📊 CGPA: 3.11**

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### Professional Alignment

Passionate about **industrial automation, control, and instrumentation** with expertise in **PLCs, SCADA, and process optimization**. Skilled in **sensor integration, control systems and predictive maintenance** with a proven ability to enhance industrial efficiency. Eager to **drive innovation in automation!**

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