Muhammad Rashid Ali Khan

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Website: www.rashidali.online • **References:** github.com/M-Rashid-Ali-Khan/ M-Rashid-Ali-Khan

Summary

A Mechatronics Engineer with experience in embedded systems, IoT and mobile robotics.

Patent

UCAV Landing Gear Design — Karachi, PK
Design Applications No: 22661-D — Mar 2024
IP Design Patent, IPO Pakistan

Professional Experience

CARE PVT. LTD. — Islamabad, PK
Embedded Design Intern — Aug 2023 – Sep 2023
- Collaborated on projects involving ESP IDF, RTOS, IoT, and MQTT
- Developed firmware for sensor integration and data communication.

NCRA — Islamabad, PK
Machine Learning Intern — Jul 2022 – Aug 2022
- Gained hands-on experience in ML, CNNs, and SVMs.
- Implemented real-time object detection using edge devices.

Education

NUST — Islamabad, PK
Bachelors in Mechatronics Engineering, **CGPA:** 3.61/4 — Oct 2020 – June 2024
Final Year Project: Autonomous Industrial Inspection Wheeled and Legged Robot

Skills and Interest

Programming Languages: C, C++, Python, Embedded C, Assembly (ARM, 8051), Ladder Diagram
Frameworks & Platforms: PLC RSLogix 500, ESP IDF, ROS, Arduino, Raspberry Pi, Jetson Nano, Keil
Technologies: I2C, SPI, UART, RS232, RTOS (FreeRTOS), MQTT, IoT, Linux, Git, GitHub
Additional Competencies: Path Planning, Technical Writing, Network Protocols
Cloud Services: DNS, Cloudflare Tunnels, Azure

Projects

- Autonomous Industrial Inspection convertible Wheeled and Legged Robot
- ESP32 based IOT device for monitoring in mobile vehicle
- IoT based Home Automation System with Dashboard Control
- NMEA Parser Library for GPS module data processing

Certifications

Cobot Robotic Arm UR-5 Certification — Islamabad, PK
National Centre for Robotics and Automation (NCRA) — Jan 2023

Leadership

AI Team Supervisor — Islamabad, PK
Robotics and Automation Club (RAC), CEME NUST — Aug 2022 – June 2024

Subject Mentor — Islamabad, PK
CEME Mentorship Club (CMC), CEME NUST — Oct 2023– June 2024