Wahaj Ahmad

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Robotics-focused engineer with hands-on experience building interactive robotic systems and integrating hardware + software. Strong in prototyping, testing, and debugging end-to-end pipelines (sensors, control, and user interaction). Comfortable working in lab or on-site environments with a practical, reliability-first mindset.

💼 Professional Experience

EMBEDDED SYSTEMS ENGINEERING INTERN   **Sep 2023 — Jan 2024**
Studio Edwin Van Der Heide   *Rotterdam, Netherlands*

- Integrated and validated an autonomous embedded system combining hardware, power management, and Linux-based software for long-term deployment.
- Integrated Raspberry Pi–based hardware with power electronics and peripherals; verified system stability through extended unattended testing.
- Developed and maintained scripts and services for system scheduling, logging, remote access, and automated data transfer.
- Troubleshot power, timing, and reliability issues, iterating on hardware–software integration to improve system robustness.

HARDWARE ENGINEER   **Aug 2020 — Jul 2022**
Azimut Labs (Wavetec)   *Karachi, Pakistan*

- Supported field installation and deployment of electromechanical machines at customer sites, working with field engineers and customer technical teams.
- Integrated and validated hardware modules (POS terminals, scanners, EMV readers) for international customer projects.
- Troubleshot integration and deployment issues hands-on, coordinating with factory and software teams to resolve problems.
- Conducted quality testing through factory visits and standardized installation and troubleshooting documentation.
- Mentored two junior engineers across hardware and technical support, supporting planning and issue resolution.

VR/AR SYSTEM FOR REMOTE FACTORY SUPPORT   **May 2023 — Jul 2023**
Virtual Reality, UTwente   *Enschede, Netherlands*

- Built a VR/AR system for remote factory support, enabling real-time inspection and guidance during installation and validation.
- Implemented VR tooling (Unity/C#) and AR overlays (Python/OpenCV) with marker-based tracking for accurate alignment.
- Collaborated in a multidisciplinary team and validated system performance through iterative testing.

SQUID MIND - EMBEDDED ROBOTICS PROJECT   **Sep 2022 — Dec 2022**
Human-Robot Communication, UTwente   *Enschede, Netherlands*

- Built an embedded robotic system integrating microcontrollers, sensors, actuators, and audio/visual feedback.
- Prototyped and troubleshot system behavior to ensure stable and repeatable operation.

CAMPUS ROUTE BOT - EMBEDDED SYSTEM PROTOTYPE   **Sep 2022 — Dec 2022**
Foundation of Interaction Technology, UTwente   *Enschede, Netherlands*

- Developed a receptionist robot integrating microcontroller hardware, I/O devices, and speech systems.
- Validated system behavior in a public setting through iterative prototyping and testing.

🎓 Education

MSc Interaction Technology, *University of Twente, Netherlands*   **Sep 2022 — Feb 2026**
Thesis: Exploring the Design Potential of Wizard of Oz Elicited Hand Gestures for Fighting Game Control

- Investigated human-operated command systems under time-critical conditions, focusing on performance limits and reliability using Wizard-of-Oz prototyping

BSc Electrical Engineer, *Habib University, Pakistan*   **Aug 2016 — Jun 2020**
Thesis: BSc. Thesis: Autonomous Robot With Door Opening Mechanism and Traversal

- Designed and tested an autonomous robot with a vision-guided 4+1 DOF manipulator to detect and open lever-handle doors, validated through simulation and real-world experiments.

✂ Skills

Robotics & Systems	Mechatronics, embedded systems, sensor integration, serial (I2C/SPI), troubleshooting
Software & Tools	Linux, Python, C++, Bash, Git, Docker, Raspberry Pi, Arduino, ROS2
Operations	Debugging (logs), test procedures, commissioning/field support, technical documentation, leadership