

Hands-on engineer experienced in hardware integration and troubleshooting of complex systems. Comfortable working on-site, following structured procedures, and supporting installation and testing activities. Motivated to grow in field installation roles with strong ownership and teamwork.

PROFESSIONAL EXPERIENCE

EMBEDDED SYSTEMS ENGINEERING INTERN

Studio Edwin Van Der Heide

Sep 2023 — Jan 2024

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.
- Troubleshoot power, timing, and reliability issues, iterating on hardware-software integration to improve system robustness.

HARDWARE ENGINEER

Azimut Labs (Wavetec)

Aug 2020 — Jul 2022

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.
- Troubleshoot 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

Virtual Reality, UTwente

May 2023 — Jul 2023

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

Human-Robot Communication, UTwente

Sep 2022 — Dec 2022

Enschede, Netherlands

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

CAMPUS ROUTE BOT - EMBEDDED SYSTEM PROTOTYPE

Foundation of Interaction Technology, UTwente

Sep 2022 — Dec 2022

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

Hardware & Systems

Mechatronics, embedded systems, system integration, troubleshooting, validation & testing

Software & Tools

Linux, Python, Bash, embedded platforms (Raspberry Pi, Arduino)

Operations

Field support, technical documentation, cross-functional collaboration, leadership / mentoring