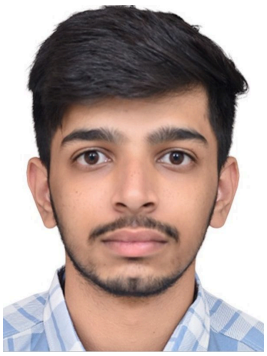

Dhaivat Joshi

| Embedded Software Engineer | PCB Designer |

dhaivatjoshi0106@gmail.com +49 157 58249432

39118, Magdeburg, Germany linkedin.com/in/dhaivatjoshi-jd

dhaivatjoshi.me (Portfolio) github.com/Dhaivatjoshi

@JustElectronicX

PROFILE

Master's student in Electrical Engineering and Information Technology at Otto-von-Guericke University Magdeburg with hands-on experience in embedded systems, Linux-based development, PCB design, and IoT applications. Skilled in error analysis, system validation, GUI prototyping, and Hardware prototyping.

PROFESSIONAL EXPERIENCE

05/2025 – 07/2025
Delhi, India

PCB Designer | Embedded Software Developer
enord

- Developing ESP32-based systems with FreeRTOS for multi-sensor protocol to USB Serial communication.
- Designing custom PCBs, including an Ethernet splitter for drone applications, using KiCad 9.
- Programmed and validated Linux/RTOS-based embedded systems with Ubuntu for testing and evaluation.
- Conducted software verification and bug analysis for multi-sensor applications, reporting results in Git-based workflows.

06/2021 – 10/2023
Anand, India

Embedded Software Developer
InSignEx

- Embedded Systems & IoT Expertise: Developed and optimized firmware for microcontrollers (PIC18, ESP8266EX, AVR Atmega328p), and integrated IoT solutions using protocols like MQTT, SPI, I2C, UART, and MODBUS.
- Hardware Design: Designed and optimized schematics and PCB layouts in KiCad for various projects, including a Hydroponic System and a voice-controlled scrolling display, completing six hardware projects in total.
- Full-Stack Development: Developed user interfaces for the Gh5001 Green House Monitoring System app, utilizing MQTT, Thingspeak, and Firebase for data-driven applications, and developed three custom Android apps with Kodular.
- Programming Skills: Proficient in C, C++, and Python, with experience in RTOS development and creating three C libraries to enhance system functionality.
- Project Management: Managed project data and development using tools like Visual Studio, Arduino IDE, and Excel with Python, streamlining workflows for multiple hardware and software projects.

EDUCATION

10/2023 – present
Magdeburg, Germany

M.TECH ELECTRICAL ENGINEERING AND INFORMATION TECHNOLOGY
Otto-von-Guericke Universität Magdeburg
Field of Focus: Electrical, Embedded System, Control System, Power Electronics

07/2017 – 04/2021
Anand, India

B.TECH ELECTRONICS AND COMMUNICATION ENGINEERING
Charotar University of Science and Technology
Field of Focus: Embedded Systems, Fundamentals of Electronics and Power Electronics
Final grade: 8.01 CGPA or Equivalent to 2.0 in Germany

LANGUAGES

German — Basic
Goethe Zertifikat A1 (currently improving)

English — Fluent

TECHNICAL SKILLS

Software - Proficient
GIT/Github, GitLab, KiCad(EDA), EasyEDA, Proteus, Microsoft Office (Word | Excel | Power Point), Arduino IDE, STM32CPlaube IDE, ntUML, Jenkins, CI/CD

Communication protocols - Competent
IOT, MQTT, SPI, I2C, UART, ESPNOW, MODBUS, CANBUS

Programming language - Competent
C, C++, Embedded C, ROS, Python, PHP, HTML(basics)

Floor skills - Expert
Rapid prototyping, micro soldering, circuit debugging, PCB production

Microcontroller Board - Competent
STM32, ESP8266ex, ESP32, PIC18, ATtiny85, Arduino UNO/ Mega, Raspberry pi

OS
Linux(Ubuntu), windows, FreeRTOS

PROJECTS

Hydroponic System
InSignEx
- Designed and validated a fully automated hydroponic system with IOT control via ESP8266, managing pH and humidity sensors, pumps, and feeders on a 12V DC supply, Designed custom schematics and PCB layout using KiCad.
- Integrated an RTC for precise relay timing, enabling automated Schedule and Repeat modes, performed hardware verification and software validation to ensure reliable long-term operation.
- Created and tested an Android app for seamless system configuration over MQTT using JSON data, supported by RTOS-based firmware for efficient control and real-time monitoring.

Electronic steering wheel with pneumatic shifting system
OJASWAT MOTORSPORT
- Designed and developed a smart steering wheel for a Formula Student car to control critical systems.
- Integrated gear shifting, radiator fan control, and real-time sensor data display using dedicated microcontrollers.
- Implemented CAN BUS communication for efficient inter-controller data sharing and enhanced driver feedback.

IOT Spybot
B.Tech Project
- Development of an IoT SpyBot with a Raspberry Pi that can be controlled remotely via a mobile app, featuring live video transmission, temperature, pressure, and motion data monitoring. The robot communicates via Firebase Database.

USBASP AVR Programmer
B.Tech Project
- A USB in-circuit programmer for Atmel AVR controllers that allows you to install new bootloaders and firmware on popular AVR microcontrollers.

EXTRACURRICULAR ACTIVITIES

02/2019 – 03/2021
Anand, India

Electrical Team Lead
Ojaswat Motorsport - University's Formula Student Team
- Led an electrical Team, converting a racing bike circuit to suit a Formula student car application.
- Designed and developed the entire embedded system for a Formula Student Car Designed, Led a team in debugging, and testing, enhancing performance and safety features.