

# Sadim Rahman Badhan

*Embedded Systems · Robotics & Autonomous Systems · Seeking Werkstudent or Praktikum*  
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## PROFILE

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Electronic Engineering student at Hochschule Hamm-Lippstadt with practical experience in programming and embedded systems development. Some background in machine learning with interests in cybersecurity, robotics, and autonomous driving technology. Seeking a Praktikum to apply and grow these skills in a hands-on engineering environment.

## EDUCATION

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### B.Eng. Electronic Engineering

2023 – Present

*Hochschule Hamm-Lippstadt, Germany · 6th Semester*

Grade: 2.7 (German scale)

**Relevant Modules:** Microcontrollers, Computer Science 2, Engineering Design, Prototyping and System Design

### B.Sc. Computer Science & Engineering

2021 – 2022

*Daffodil International University, Dhaka, Bangladesh · Transferred to Germany*

Grade: 3.3 / 4.0

### Higher Secondary Certificate (HSC), Natural Science

2018 – 2020

*Nawab Habibullah Model High School & College, Uttara, Dhaka, Bangladesh*

Grade: 4.67 / 5.0

### Secondary School Certificate (SSC), Natural Science

2017 – 2018

*Ashraf Textile Mills High School, Tongi, Gazipur, Bangladesh*

Grade: 4.56 / 5.0

## PROJECTS

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### Autonomous Driving System | Hochschule Hamm-Lippstadt

- Contributed to a team-built autonomous robot (Arduino Uno) performing line following, obstacle detection and avoidance using IR and ultrasonic (HC-SR04) sensors.
- Designed custom sensor mounts in SolidWorks and 3D printed them at the university workshop.
- Wrote C++ template code to establish the embedded control structure for the team to build upon.
- Contributed to the shared technical documentation including SysML diagrams; responsible for writing, organising, and producing a visual Git repository document.
- Assisted with physical assembly of the robot including soldering of electronic components.
- Team achieved 2nd place out of all competing teams in the end-of-semester competition; project graded 1.0.

### Traffic Light Control System | Hochschule Hamm-Lippstadt

- Developed a T-junction traffic light controller using two Arduino Uno boards communicating via UART serial protocol.
- Implemented finite state machine logic in Embedded C++ to manage traffic phase sequencing and timing across both boards.
- Documented the system architecture using UML Class Diagrams and State Diagrams to model object structure and control flow.

### Alzheimer's Disease Detection API | Personal Project

- Performed Exploratory Data Analysis (EDA) on numerical tabular datasets using pandas and NumPy to identify class distributions and feature correlations.
- Trained an Artificial Neural Network (ANN) in TensorFlow/Keras achieving binary classification of Alzheimer's indicators from tabular features.
- Deployed the model as a REST API using FastAPI; validated all endpoints with Postman.

## Kry0Steg | Semester Lab Project

- Built a desktop cryptographic tool in C++ using the GTKMM (GTK C++ bindings) framework with a graphical user interface.
- Implemented classical cipher algorithms including Caesar cipher and ROT13, alongside encoding utilities and basic steganographic functionality using null cipher technique.
- Presented at the end-of-semester lab project showcase.

## AutoSeekOut, Web Scraping Automation Tool | Freelance (Upwork)

- Engineered a Python/Selenium automation tool replacing a manual data-entry pipeline for a US-based client.
- Extracted, cleaned, and structured web data into validated CSV deliverables, reducing processing time significantly.
- Delivered under a real client contract via Moonhub on Upwork, meeting all quality and deadline requirements.

## WORK EXPERIENCE

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### Freelance Data Entry Specialist | Moonhub via Upwork

Sep 2022 – Nov 2022

- Scraped and cleaned structured datasets using client-provided tools and self-built Python automation.
- Delivered CSV outputs meeting client specifications; received positive feedback for accuracy and turnaround.

## SKILLS & TOOLS

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**Programming:** C++, Embedded C, Python, JavaScript (Node.js / Next.js)

**Embedded & Hardware:** Arduino, Microcontrollers (AVR), Sensors (Ultrasonic, IR), DC Motors, I2C, UART, Soldering

**ML / Data:** TensorFlow / Keras, scikit-learn, pandas, NumPy, Jupyter Notebook

**Software & DevOps:** REST API (FastAPI), Docker, Git, Linux (CLI), Postman

**Design & Modelling:** SolidWorks, Figma

## LANGUAGES

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**Bengali** (Native) | **English** (C1, Professional) | **German** (A1, currently improving)

## VOLUNTEERING

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**Blood Donor** | Quantum Foundation Bangladesh

2018 – 2023

- Volunteered at regular donation camps; awarded Certificate of Recognition by the organisation.

## INTERESTS

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Chess, Robotics & Maker Projects, Content Creation, Gaming, Anime