KH SAFKAT AMIN

INTERESTS

- Programming
- Software Development
- Automated Driving Systems
- Agentic AI
- Computer Vision
- Modeling Simulation
- Technology Innovation
- Football & Motorsports
- Hiking

CONTACT

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safkat-portfolio.vercel.app

WORK EXPERIENCES

Master Thesis Student 06.2024 - 03.2025
Institute for Automotive Engineering, RWTH

- Developed a Python-based framework to harmonize heterogeneous trajectory data into a unified format for consistent behavior analysis.
- Implemented an automated enrichment pipeline to add environmental context to raw trajectory data.
- Structured and stored complex, multidimensional trajectory data in MongoDB, enabling flexible querying and efficient analysis.

Research Assistant 03.2024 - 03.2025
Institute for Machine Elements and Systems Engineering, RWTH

- Operated a tribological test bench to collect experimental data on wear and boundary layer formation.
- Built and validated predictive models using machine learning to analyze wear and lubrication behavior.

Software Developer 12.2022 - 07.2024
Team GalaXIs RWTH

- Developed core modules of the perception stack for real-time scene understanding in autonomous navigation and simulation.
- Implemented camera-to-BEV transformation, semantic segmentation, and object detection pipelines for lane, road, and obstacle analysis.

Executive Engineer 01.2018-02.2021
Rancon Auto Industries Limited, Bangladesh

- Oversaw vehicle production quality and reliability by conducting inspections, coordinating repairs, managing materials, and supporting pre-series testing to ensure compliance with OEM standards.

EDUCATION

M.Sc. in Automotive Engineering 10.2020 - 03.2025
RWTH Aachen University

- **Thesis:** Development of a framework for harmonization, enrichment and classification of behavioral data. (Grade 1.0/1.0).

B.Sc. in Mechanical Engineering 05.2012 - 02.2017
Bangladesh University of Engineering & Technology

TECHNICAL SKILLS

- **Programming:** Python, C++, Java, JavaScript, TypeScript, MATLAB
- **Web Development:** React, Tailwind CSS, Node.js, Express
- **AI & Robotics:** ROS/ROS2, TensorFlow, PyTorch
- **Databases:** PostgreSQL, MongoDB
- **Tools & DevOps:** Git, Docker, Linux
- **Simulation:** CARLA, Nvidia Isaac Sim, AVL Scenario Simulator
- **CAD:** SolidWorks, Fusion 360
- **Languages:** English - C1, German - B2