



# KH SAFKAT AMIN

## WORK EXPERIENCES

### Master Thesis Student

*Institute for Automotive Engineering, RWTH*

06.2024 - 03.2025

- 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

*Institute for Machine Elements and Systems Engineering, RWTH*

03.2024 - 03.2025

- 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

*Team GalaXIs RWTH*

12.2022 - 07.2024

*Rancon Auto Industries Limited, Bangladesh*

- 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

*RWTH Aachen University*

04.2021 - 03.2025

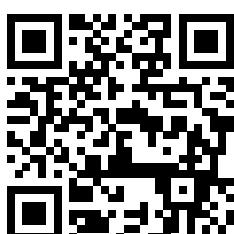
### B.Sc. in Mechanical Engineering

*Bangladesh University of Engineering & Technology*

05.2012 - 02.2017

## 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



## INTERESTS

- 💻 Programming
- 💻 Software Development
- 🚗 Automated Driving Systems
- 🤖 Agentic AI
- 📷 Computer Vision
- ⚙️ Modeling Simulation
- 💻 Technology Innovation
- ⚽ Football & Motorsports
- 🥾 Hiking

## CONTACT

- 📍 Kastanienweg 25, 52074 Aachen
- 📞 +4915752642171
- ✉️ safkat.amin@rwth-aachen.de
- LinkedIn: khsafkatamin
- X: KhSafkat\_Amin
- Github: khsafkatamin
- Portfolio: safkat-portfolio.vercel.app