Vardhan Mistry

mistryvardhan@gmail.com +49 176 29028526 13.03.2000
Chemnitz, Germany https://www.linkedin.com/in/vardhan-mistry/
github.com/Vardhan1303 Male Indian (Valid German Work Permit)

MSc Mechatronics graduate with a strong research-oriented and computational background in machine learning, computer vision, and image-based data analysis. Experienced in designing reproducible pipelines, analyzing complex visual data, and independently executing research-driven projects with academic rigor.

Professional Experience

04/2025 – 12/2025
Stollberg, Germany

Master's Thesis – Flexible Soiling Detection for Automotive Cameras
IAV GmbH

- Developed a **camera-based concept to detect raindrops and soil** induced sensor degradation in autonomous vehicles.
- Built and annotated a **50,000+ multi-camera image dataset** (pinhole, fisheye, stereo).
- Designed, trained, and evaluated **CNN and Vision Transformer segmentation** models under clean and degraded conditions.
- Reduced **false detection rate** from **4.03% to 0.17%** using clean-image supervision strategies.
- Exported models to **ONNX** and validated **7 ms** inference on NVIDIA RTX A1000 embedded hardware.

12/2024 – 02/2025
Chemnitz, Germany

Software Development Intern – Computational Imaging
IAV GmbH

- Developed a **Python-based procedural raindrops generation and preprocessing pipeline** for image analysis tasks.
- Automated manual workflows, improving reproducibility and efficiency.
- Compared data generation strategies to ensure **statistical consistency and robustness.**
- Delivered **version-controlled, documented pipeline** compliant with research standards.

08/2022 – 08/2023
Mundra, India

Assistant Manager - Industrial Automation
Adani Group

- Coordinated **industrial robotic installations** across mechanical, electrical, and control teams.
- Managed execution, contractors, and materials with **on-time delivery and zero safety incidents.**
- Prepared **technical reports and dashboards** for management decision-making.

Projects

05/2025 – 07/2025

Platooning Autonomous Following Robot
- Designed **vision-based low-cost following system** as an alternative to LiDAR.
- Implemented **real-time pose and distance estimation using Kalman filtering.**
- Integrated perception with **closed-loop motor control** for stable autonomous behavior.

Education

10/2023 – 02/2026
Weingarten, Germany

RWU Hochschule Ravensburg-Weingarten
Master of Science in Mechatronics (Overall Grade: 1.8/5.0)
Key Modules: Advanced Mathematics, Advanced Control Systems, Robotics

07/2018 – 05/2022
Vadodara, India

The Maharaja Sayajirao University of Baroda
Bachelor of Engineering in Mechanical Engineering (Overall Grade: 1.2/5.0)

Technical Skills

Programming & Frameworks: Python, C++, NumPy, Pandas, PyTorch, OpenCV, Git, Linux, Docker

Machine Learning & Computer Vision: Deep learning, image segmentation, unsupervised pattern analysis, model evaluation, dataset handling

Research & Reproducibility: Pipeline design, experiment tracking, documentation, version control

Computational Systems: Large-scale datasets, performance analysis, model validation

Math & Methods: estimation, filtering (Kalman), numerical optimization

Certificates

TensorFlow for Deep Learning Bootcamp — Udemy

Python for Computer Vision with OpenCV and Deep Learning — Udemy

Advanced Driver Assistance Systems (ADAS) — Udemy

Languages

German — Proficient (B1) | **English** — Fluent (C1) | **Hindi** — Native | **Gujarati** — Mother tongue