

KARAN HEMANT LASHKARE

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Studentenwohnheim Hadiko, Klosterweg 28, 76131 Karlsruhe

SUMMARY

- With 1.5 years of work experience in multiple Computer Vision projects using Python and including ROS2 for rapid prototyping.
- With 3 years of core mechanical design and implementation experience in turnkey projects in India.
- Currently pursuing Master's degree at Karlsruhe Institute of Technology, with specialization in Mechatronics to advance my career prospects.

TECHNICAL SKILLS

- OpenCV
- Camera Calibration
- SLAM
- Python
- ROS2

WORK EXPERIENCE

Master Thesis student (In Progress)

Forschungszentrum Informatik, Karlsruhe (FZI)

11/2024 - Present

- Title: Further development of intrinsic camera calibration models using deep learning techniques.
- Aim: Target is to address current challenges faced by the deep learning camera calibration models in autonomous (coarse) and medical application (fine).
- This also includes dataset generation using GAN.

Student Research Assistant

Karlsruhe Institute of Technology | Karlsruhe, Germany

Institute of Measurement and Control (MRT)

11/2024 - Present

- LiDAR Sensor Fusion and Map Perception using Deep Learning.
- Labelling of HD Maps (whole Karlsruhe region) for the test vehicle.

Institute of Information Management and Engineering (IMI)

03/2023 – 09/2024

- Identification and classification of identical components (e.g. metal parts, textured surfaces, and rough surfaces), using Generative model (VAE).
- Developed another completely new program for the same purpose using Python with OpenCV library with additional support from SIFT and FLANN.
- Achieved 100% success in image matching across all image conditions (lighting, distortion, exposure and motion).
- Our research is accepted in the IEEE Journal under KIT, yet to release.

Institute of Microstructure Technology (IMI)

04/2023 – 02/2024

- A custom program developed for the recognition of sensors prints created using variety of polymer material on a glass slide.
- Achieved 84% accuracy on test data for different types of polymer prints.

Student Research Assistant

Fraunhofer Institute of Optronics, System Technology and Image Analysis (IOSB) 03/2024 – 09/2024

- Developed an object detection system for unmanned water vehicle using Python, leveraging NVIDIA Jetson hardware for efficient performance.
- Integrated the system with ROS2-Humble to enable control of the vehicle.

Young Ambassador Germany-India

Deutscher Akademischer Austauschdienst (D.A.A.D)

07/2023 – 09/2024

- Helping students and researchers into their higher education process in Germany and keep the community informed about new regulations in education by organizing events, both online and offline.

Junior Mechanical Engineer (Full-time)

Praj Industries Limited, Pune, India

11/2019 – 10/2022

- Engineered and reviewed material handling systems for major oil refineries of India, which are IOCL, BPCL, and HPCL.
- Implemented sensor based autonomous welding machine system for bioethanol and biogas vessels for accurate weld seams.

EDUCATION

M.Sc. Mechanical Engineering (Mechatronics)

Karlsruhe Institute of Technology | Karlsruhe, Germany

10/2022 - Present

B.E Mechanical Engineering

Savitribai Phule Pune University | Pune, India

08/2015 –05/2019

LANGUAGES

- English | Level C2
- German | Level B2.1