



Manohar Kuse

Robotics & ML Systems Engineer
Zürich, Switzerland

About Me

Robotics and ML engineer focused on building end-to-end intelligent systems, from perception to deployment.

Experienced in integrating computer vision, robotics, and infrastructure into reliable real-world systems.

Strong interest in bridging research and production, with a focus on system design, automation, and leveraging modern AI techniques to accelerate engineering workflows.

Contact

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- [LinkedIn Profile](#)

Personal

Indian citizen
Open B-Permit in Switzerland

Languages:

- English (Fluent)
- German (A2)
- Marathi, Hindi

Working Experience

Senior Robotics Engineer

Dec 2025 - Present

Pick8Ship Technology AG, Zurich, Switzerland

- Designed an end-to-end **robotic picking system** integrating perception, planning, and execution
- Built real-time vision pipelines for **detection, segmentation, and 3D localization** in cluttered environments
- Developed camera-to-gantry **calibration** enabling vision-driven robotic execution
- Implemented collision-free placement planning using heightmap-based methods
- Integrated hardware subsystems (gantry, suction, cameras) into a unified pipeline
- Established dev & testing infrastructure (Docker, HIL testing, remote debugging & tracing)
- Prototyped LLM-assisted internal tooling for structuring engineering workflows

Senior Computer Vision Engineer

Jan 2022 - Dec 2024

Magicleap, Zürich, Switzerland

- Improved **SLAM relocalization** robustness by handling edge cases (e.g., stairs, IMU inconsistencies)
- Built **cloud-based KPI and evaluation pipelines** for continuous system monitoring (CI/CD, nightly runs, artifact tracking)
- Developed **sensor fusion models and simulation tools** for non-inertial platforms
- Contributed to **production SLAM systems** using C++, TensorFlow, and Python

Robotics Engineer

Apr 2020 - Nov 2021

Rovenso AG, Fribourg, Switzerland

- Improved **LiDAR-based localization** using IMU + GPS sensor fusion (GTSAM, ROS)
- Developed **robot mission control interfaces** (UI, mapping, waypoint planning)
- Designed and implemented **autonomous docking system** using vision and feedback control

Skills

Programming Languages

- C++17/20, Python – Proficient in efficient, production-ready code; Experience with design patterns and generic programming.
- Maintained large-scale production C++ & Python codebases with performance-critical modules.

Perception & Machine Learning

- Specializations:** 3D vision, SLAM, relocalization, pose estimation, reconstruction
- Experience:** real-time pipelines, sensor fusion, learned descriptors
- Tools:** PyTorch, TensorFlow, OpenCV, PCL



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Robotics

- **Tools:** ROS/ROS2, RViz, Ceres Solver, re:run, GTSAM
- **Specializations:** perception-to-action systems, robotic manipulation, calibration
- **Experience:** Real-time SLAM pipelines, sensor fusion, trajectory planning and optimization. Visualization with RViz and foxglove

AI-Assisted Engineering & Tooling

- LLM-assisted workflows for structuring and automating engineering processes
- Prompt-driven pipelines for data extraction and system integration

Systems & Infrastructure

- Docker, Linux, CI/CD (GitHub Actions)
- Cloud: GCP (Compute, Storage, BigQuery, Cloud SQL)
- Distributed debugging, logging, and testing pipelines

Education

Doctoral Studies (Ph.D)

Aug 2013 - Dec 2019

The Hong Kong University of Science and Technology (HKUST)

- Thesis: "Techniques for a failsafe Visual Inertial SLAM System"
- Learning to relocalize using streetview data
- Drone Kinematics and Control
- Web Frontends for KPI monitoring
- Tech: Python, Tensorflow, C++, ROS, GTSAM, Voxelbox, Flask, MongoDB, CERES solver

Bachelor of Technology (B.Tech)

2008-2012

The LNM Institute of Information Technology, Jaipur, India

- Communication and Computer Engineering

Select SLAM Projects

*Both projects related to my doctoral thesis (~2019)

Kidnap recovery in VI-SLAM

- Relocalization in visual-inertial SLAM system
- Learned image descriptors
- 3D pose and alignment

<https://github.com/mpkuse/cerebro>

Image Descriptor Learning

- Image level descriptors
- trained using street view
- Deep neural network architecture

https://github.com/mpkuse/cartwheel_train

References

Benjamin Langman (Former Manager)

Senior Director, Magicleap Switzerland

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Lucian Cucu (Former Manager)

R&D Team Lead, Wayout Robotics, Switzerland

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Prof. Shaojie Shen (Thesis Supervisor)

Associate Professor, HKUST, Hong Kong

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