HARISH NATARAJAN RAVI

UNIVERSITÄT PADERBORN | EMBEDDED & AUTONOMOUS SYSTEMS ENGINEER

Highly motivated and experienced software development engineer with a strong C/C++, Python, and Linux environment background. Expert in software development, and project collaboration. Flexible to relocate to align with project needs and career growth.

CONTACT

harrish.nr@gmail.com
+49 1759526201
Bahnhofstraße 13, 71229 Leonberg
Portfolio
GitHub

SKILLS

Programming

C/C++ ●●●●○
Python ●●●○○
Matlab/Simulink ●●●○○

Operating Systems

Linux ●●●●●
Windows ●●●●●

Software, Tools & Platforms

ROS1/ROS2 ●●●●○
Sensor Fusion ●●●●○
LiDARs & Cameras/SLAM ●●●●○
FPGA/Xilinx ●●●○○
Machine & Deep Learning ●●●○○
Git/Docker/Kubernetes ●●●●○
CI/CD pipeline ●●●●○
Testing and Debugging ●●●●●
AUTOSAR & ASPICE ●●●●○
Jetson Nano/Raspberry Pi ●●●○○
Data handling/analysis ●●●●○

Languages

English — **Native Speaker**
Deutsch — **Intermediate**

EDUCATION

Masters in Computer Engineering
Oct 2020 - Sep 2024
Universität Paderborn, Germany

B. Eng. in Electronics and Communication Engineering
Sep 2011 - Jul 2015
Visvesvaraya Technological University, India

PROJECTS & CERTIFICATES

- **Self-Driving Cars Specialization**
- **Deep Learning Specialization**
- **Autonomous Vehicle Perception**
- **Visual Odometry for Motion Estimation**
- **Real Time Detection Transformers**

WORK EXPERIENCE

ADAS Research Intern and Master Thesis

Porsche Engineering GmbH — **Sep 2023 - Sep 2024**
Mönsheim, Germany

- Designed and implemented parking map reconstruction pipeline using SLAM.
- Developed LiDAR-based relocalization modules for generated parking map.
- Employed loop closure for parking map trajectory utilizing sensor data.
- Implemented methods for supporting HMI parking functions.
- Enhanced the performance of parking assist systems.

System Development - Video Perception

Robert Bosch GmbH — **Mar 2023 - Aug 2023**
Stuttgart, Germany

- Performed comprehensive analysis for L3 camera-based parking assist systems.
- Conducted verification and validation ensuring compliance with specifications.
- Collaborated with teams to ensure system reliability and performance.

Student Research Assistant

Fraunhofer IEM — **Sep 2021 - Feb 2023**
Paderborn, Germany

- Designed and implemented car-to-cloud demonstrator using simulators.
- Performed data extraction and analysis for telemetry data (SDV project).

Software Developer

Robert Bosch Engineering And Business Solutions Pvt Ltd — **Apr 2017 – Sep 2020**
Bengaluru, India

- Developed service layer functionalities for the DCM package.
- Implemented functions for OBD modules to aid Application layer.
- Responsible for debugging and testing of OBD functional modules.
- Experience in Functional Safety, Diagnostics, ADAS/AD, and ECU Protocols.
- Worked closely with cross-functional team for platform release activities.

Technical Analyst

IBM India Pvt Ltd — **Jul 2015 – Apr 2017**
Bengaluru, India

- Implemented test automation scripts and worked on functional tasks.
- Performed server node migrations and cluster booting tasks without impact.

THESES AND RESEARCH WORK

Generation and Relocalization of Parking Maps

- Designed and implemented a parking map pipeline using SLAM algorithms.
- Reconstructed and Relocalized vehicle within the generated parking map.
- Evaluated the real-time performance of the pipeline in vehicle and simulation.
- Enhanced the performance of parking assist systems.

Disaster Response Robots

- Implemented LOAM pipeline to map and localise the environment.
- Enhanced the real-time performance of the pipeline using loop closure methods.
- Developed abstraction to plugin key points extraction and descriptor algorithms.

REFERENCES

- Prof. Dr. Erdal Kayacan <erdal.kayacan@upb.de>
- -Ing. Jing Gong <jing.gong@porsche-engineering.de>