Jun Meng

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Skills: Python, C/C++, ROS/ROS2, MATLAB/Simulink, Git, Docker, Linux OS, CATIA

Roles: I'm looking for a challenging role as **Software Developer** / **Test Engineer** / **Simulation Engineer** / **AI Engineer** in the fields of AD/ADAS, Robotics etc.

Education

M.Sc. in Automotive Engineering | **Technical University of Munich** — Munich, DE | 10/2020 – 06/2024

Curricula: DL, CV, SW Development of ADAS, E/E in Automotive (CAN, LIN, FlexRay) — *Grade: 2,3*

B.Eng. in Vehicle Engineering | **South China University of Technology** — Guangzhou, CN | 09/2015 – 06/2019

Curricula: Mechanical Engineering, Control Theory, Vehicle Dynamics — *Grade: 3.78/4.0 (best 5%)*

Projects

Mamba-based 3D Object Detection with Object Relation (Slide) — 12/2023 – 06/2024

Master's thesis, School of CIT, TUM — *Python, PyTorch, GNN, 3D Object Detection*

- Design a GNN-based module and integrate into two-stage LiDAR-based baseline models to infer object relation explicitly.
- Apply newly proposed Mamba-based feature encoder as 2D BEV backbone in baseline models to reduce model complexity.
- Results: Experiments on KITTI and Waymo datasets. FLOPs reduced by 40%, average mAP improved by over 1%.

Autonomous Driving Simulator and Benchmark with ROS2 (GitHub) — 06/2022 – 12/2022

Semester thesis, School of CIT, TUM — *Python, C#, ROS2, OpenCV, Depth Estimation*

- Develop autonomous driving simulator on *Neuro-Robotics Platform* , developed with ROS2, results visualized in Rviz.
- Implement YOLOv5 for 2D object detection and SGBM for stereo depth estimation, distance errors limited in cm-level.

Work Experiences

Intern ADAS (Praktikant Fahrerassistenzsysteme) — 03/2023 – 08/2023

Porsche Engineering Group GmbH — *Mönsheim, DE*

- Task: Pre-development of ML-based collision prediction for Highway-Pilot (HWP) function. (**Certificate**)
- Process FlexRay-formatted sensor data (LRR and camera), determine sovereign zone, develop labeling tool, establish dataset.
- Develop and train a model to classify surrounding vehicles as safe / unsafe based on their history behaviors in Frenet coordnate.
- Test through various scenarios, evaluate safety vote and reliability in collision prediction using KPI metrics.

HiWi: ROS Developer — 10/2022 – 02/2023

ENSNARE TUM — *Munich, DE*

- Task: UAV localization for automated construction.
- Develop ROS-based AprilTag detection and tracking pipeline with BASLER camera and SONY-SDK. (**GitHub**)
- Validate tracking system's real-time capability with total station. Lag less than 0.1 s under FPS 16.

Formula Student China: Leader Aerodynamics — 11/2017 – 06/2019

SCUT-Racing — *Guangzhou, CN*

- Technical tasks: CAD design and CFD simulation for Aero-Kits; Manufacturing of CFK-parts; Track testing and data analysis.
- Team management; Financial management for the subteam Aerodynamics.

Skills & Hobbies

- **Programming**: Python, C/C++, ROS/ROS2, MATLAB/Simulink, CUDA, Git, Docker, Linux OS
- **CAD & CAE**: AutoCAD, CATIA, SolidWorks, Blender, ANSYS, StarCCM+
- **Languages**: Chinese (Native) | English (Business-fluent) | German (Business-fluent)
- **Hobbies**: Car model handworking, Photography, Hiking, Driving
- **Driver's License**: Klasse B (DE)

August 12, 2024