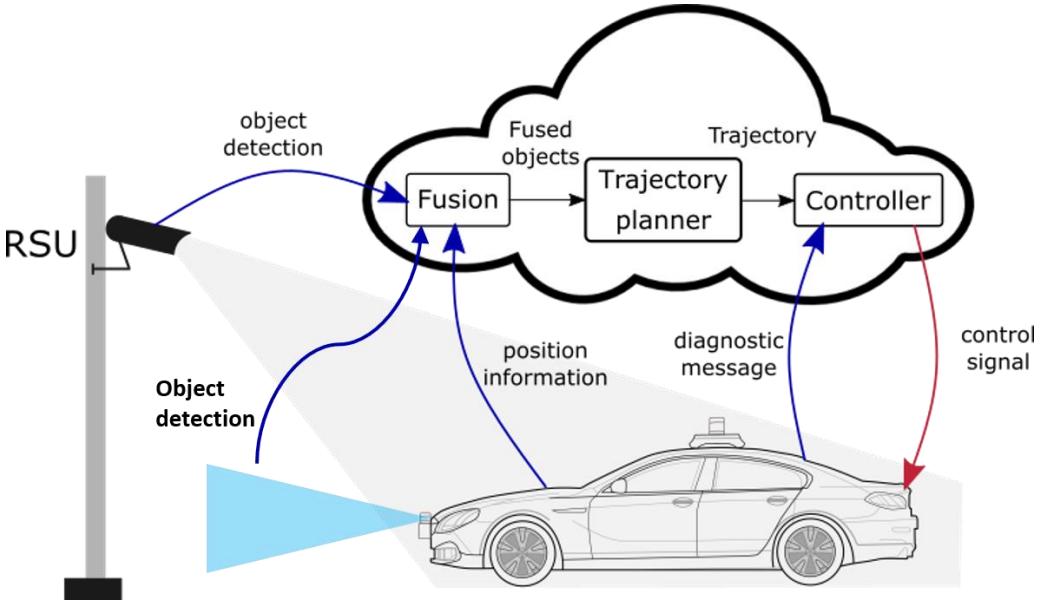
Technische Universität Graz
Erzherzog-Johann-Universität

Institut für Fahrzeugtechnik

Master Thesis



Development of a cooperative perception algorithm using on-board and infrastructure sensors

In the bilateral research project PECOP between TU Graz and Tongji University, an autonomous shuttle bus will be developed to enhance safety and comfort of such vehicles. Traditional perception approaches rely heavily on the ego vehicle sensors (radar, camera, lidar) facing limitations such as “short range” constraints. To address this, the Vehicle-To-Everything (V2X) has emerged, enabling vehicles to share and receive data from infrastructure and other vehicles. This master project involves developing a fusion algorithm that integrates data from onboard and infrastructure sensors (e.g., LiDAR, Radar, Camera) to expand perception range and improve reliability.

Responsibilities:

- Conduct a comprehensive literature review of existing cooperative perception algorithms.
- Design and develop a fusion algorithm.
- Implement the algorithm in simulation (IPG CarMaker and MATLAB/Simulink).
- Validate the algorithm in various use case scenarios.

Requirements:

- Strong interest in automated driving technologies.
- Solid programming skills.
- Experience with MATLAB/Simulink is advantageous.

Dauer: 6 months
Beginn: Every time

Für die Durchführung der Masterarbeit wird eine Aufwandsentschädigung angeboten.

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