Bachelorarbeit / Masterarbeit

Reinforcement Learning Based Trajectory Tracking for Highly Automated Vehicles

Beschreibung
For autonomous driving, driver assistance systems have to be capable of precisely tracking precomputed trajectories without bringing other road users in danger. Consequently, the planning and control of such trajectories plays an important role in the field of autonomous driving due the fact that such vehicles need to be capable of using their full maneuverability in unknown and dynamic environments to fully adjust in real time to sudden changes in their environment.

In this work, Reinforcement-Learning algorithms shall be applied to the tracking of trajectories for automated vehicles. For this purpose, the following steps are to be elaborated:
- Literature research to the state of art in reinforcement learning based trajectory control.
- Implementation of the algorithms in a given simulation framework.
- Depending on the progress, applying the trained policy on our test vehicle.

Beginn
ab sofort

Voraussetzungen
Good programming skills (Matlab, C++/Python)
preferably practical knowledge in ROS

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