Online Path Generation from Sensor Data for Highly Automated Driving Functions

Abstract:
State-of-the-art autonomous driving systems rely on high precision map data. These map data are crucial to the driving function and therefore need to be validated during drive time. This work describes a probabilistic neural model inferring information about the road in front of an automated vehicle from sensory data. This problem is modeled as a pixel-wise classification problem. Thereby, the limitations of systems relying on pre-processed map data are overcome by replacing navigation related map data with online sensor information. The proposed model is trained based on recorded driving traces and allows the facilitation of the vehicle odometry as input label. Two use cases, namely Path Planning and Map Validation are presented and evaluated.