

Forschungspraxis

Machine learning-aided coordination for the autonomous car-pedestrian crossing problem

The project considers the problem of decentralized decision making under input uncertainties. The problem is applied to a transportation scenario where an autonomous car runs on a road with the existence of pedestrians that are on the side walk and possibly about to cross the road. Both the car and pedestrian are modeled as rational decision makers that take (noisy) visual observation inputs as basis for their decision variables (speed adjustment for the car, and decision to cross or not cross for the pedestrian).

The decision makers will be modeled from machine learning algorithms that are trained to maximize the transport efficiency while keeping the probability of a crash as low as possible.

The use of DNN is envisioned. Several heuristic policies will be tested out for comparison.

Prerequisites

Machine learning, MATLAB, DNN, Python

Advisors

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