Bachelor's Thesis

Duckietown - Lane Detection with Obstacle Avoidance and Intersection Recognition

At LIS, we want to use the Duckietown hardware and software ecosystem to experiment with our reinforcement learning-based learning classifier tables (LCT) as part of the control system of the Duckiebots: https://www.ce.cit.tum.de/lis/forschung/aktuelle-projekte/duckietown-lab/.

More information on Duckietown can be found at https://www.duckietown.org/.

In this student work, we want to extend the bot's current abilities (lane following).

The goal of this work is to enable the bots to avoid obstacles on the road (e.g. ducks, other bots, ...) and to stop at intersections (red lines) for a predefined time.

At the end, there should be a seamless integration in the Lane Following Pipeline.

Prerequisites

- Knowledge about Image Processing
- Python

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