Developing Kinematic Abilities and Trajectory Tracking for a Mobile Robot

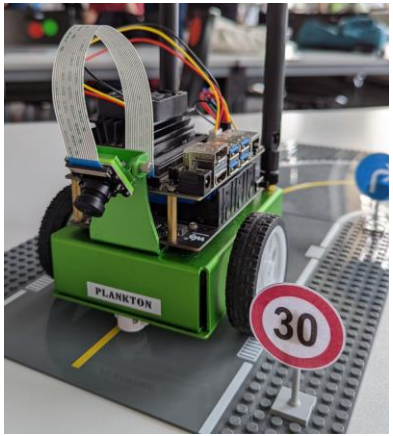
Bachelor‘s Thesis

TECHNISCHE UNIVERSITÄT DARMSTADT

An exciting Bachelor's Thesis project is available, focusing on advancing the capabilities of the JetBot, a mobile robot located within our robotics laboratory. The primary objective of this thesis is to equip the JetBot with essential kinematic abilities, including directional changes, lane changes, approaching specific points, and line tracking. The position of the robot can be tracked via a camera system, which is installed in the laboratory

Following the establishment of these fundamental skills, the thesis will progress to the more complex task of trajectory tracking. An initial approach will involve employing the carrot-and-stick principle to guide the robot along trajectories. Upon successful implementation and testing, the ultimate goal is to enable the JetBot to navigate arbitrary trajectories within the laboratory environment, potentially including challenging tracks like those found in Formula 1 circuits.

Prerequisites: Excellent programming skills (Python), Strong interest in robotics, Basics of control engineering, high motivation for independent work in the institute's robotics laboratory.



JetBot as a mobile robot

Interested? Feel free to contact me with your transcript or records:

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