Remote Sensing Technology
TUM Department of Civil, Geo and Environmental Engineering
Technical University of Munich

Job Posting: Student Research Assistant

Setting up a Simulation Framework for Autonomous Driving

Background

State-of-the-art machine learning models for semantic segmentation and depth estimation require a large amount of labeled data. Recent development has shown that synthetically generated data can be part of the solution to this problem. Moreover, simulators allow for automatically navigating through the simulated scenario. Thus, they can serve as a testbed for autonomously driving vehicles or as a training environment for active and reinforcement learning approaches. In our research, we are exploring techniques such as multi-task learning and video frame prediction for road scene understanding.

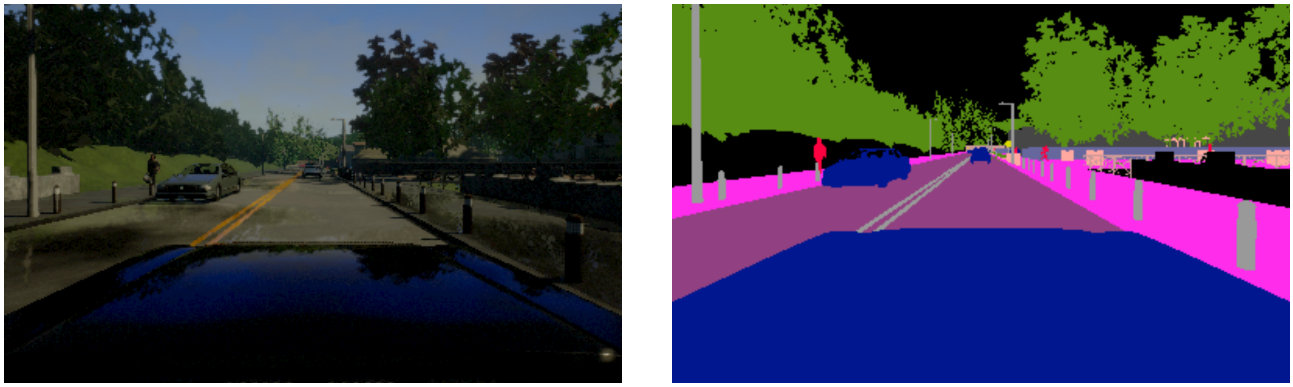

Image: Simulated scenario and corresponding semantic segmentation map generated by CARLA

Tasks

The focus of your work as a student research assistant will be to setup and maintain an existing simulator on our machines. The chosen simulator CARLA can be operated in client/server mode, with the simulation being done by a server. The client sends requests, such as steering commands, and receives rendered frames and labels for them in turn.
Future tasks may include maintenance of the system, as updates are frequently being released, as well as active participation in both our research projects and the development of the open source project CARLA.

Requirements

- Since we're usually busy with our research, we expect you to work independently (this will allow you to do your own experiments and thus actively take part in our projects)
- Basic Python skills are helpful (you will be able to advance your programming skills as you work)

Setting up the system is a straightforward and well-documented task, so please feel free to apply!

Contact

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