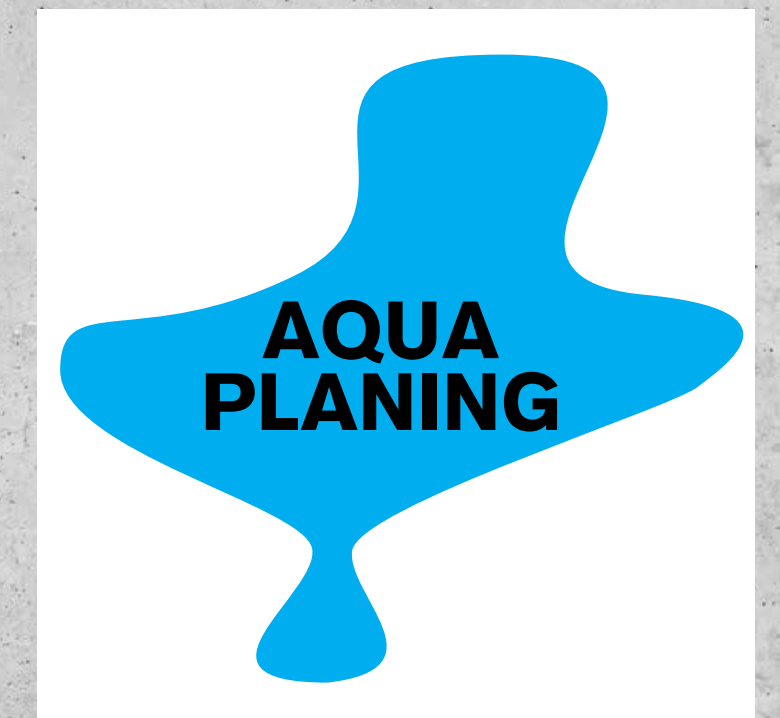


DeepDrive

Projekt: Ute Orner-Klaiber, Medieninformatik, 6.Semester
Betreuer: Prof. Johannes Maucher, Johannes Theodoridis , Daniel Grießhaber

Implementierung eines Algorithmus der Objekte erkennen kann:
SSD — Single Shot MultiBox Detector

5 Objekte:

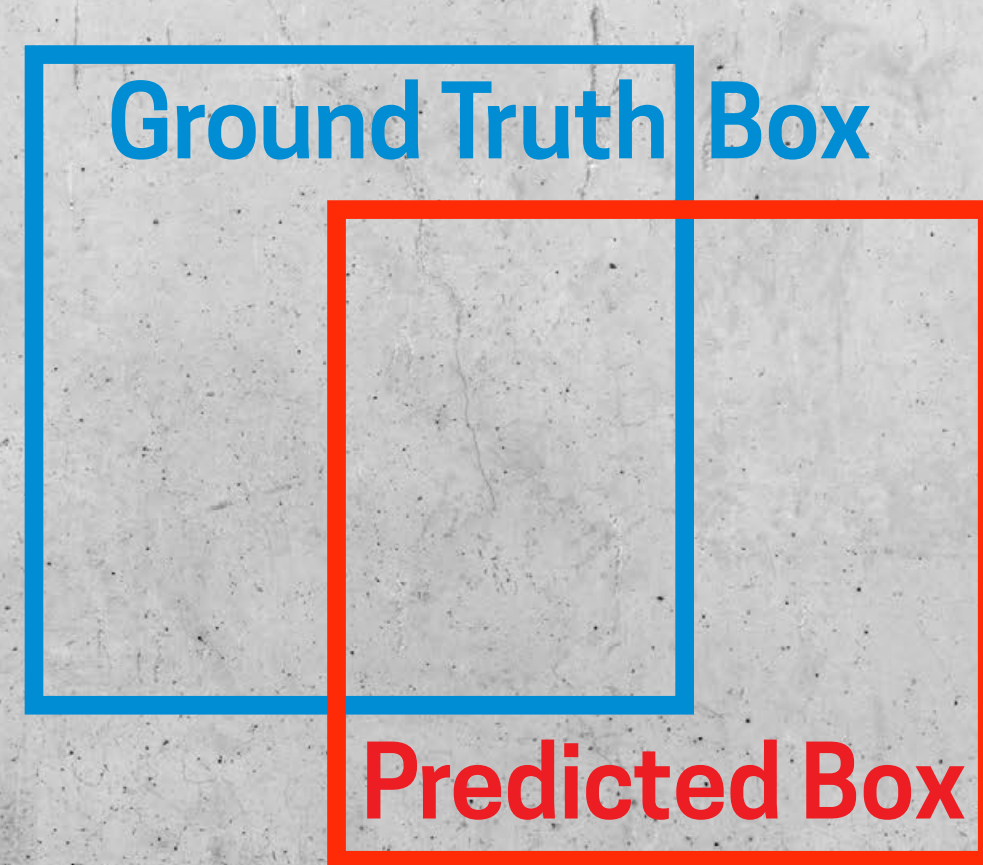
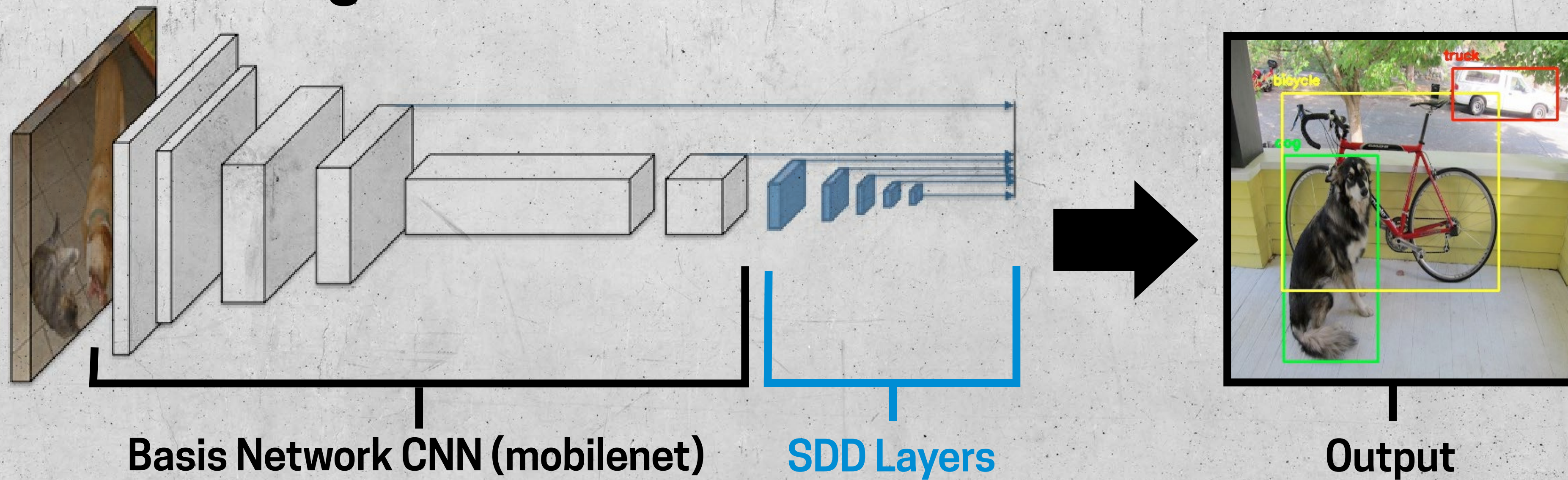


Paper: SSD: Single Shot MultiBox Detector, Wei Liu et al. 2015

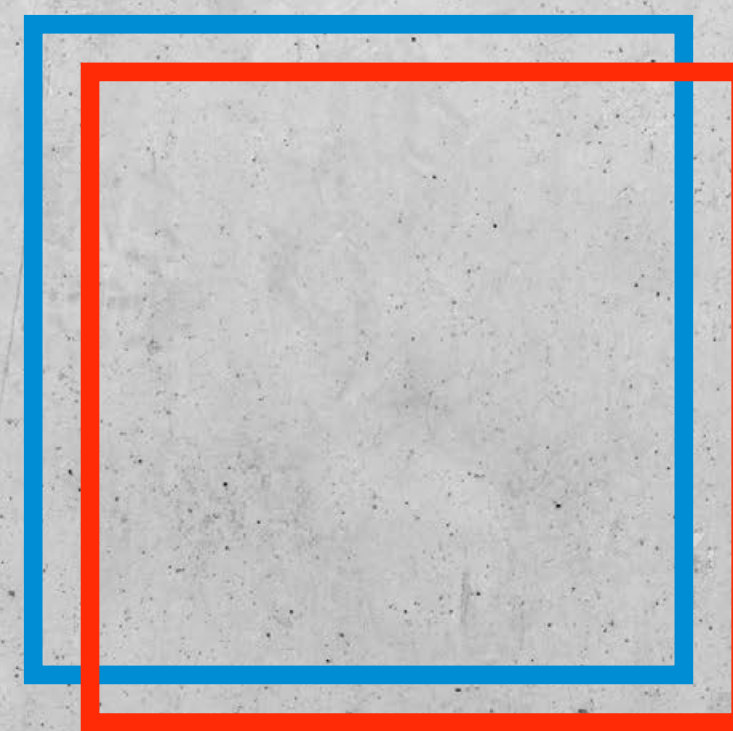
Python — TensorFlow — Objekterkennung

SSD — Single Shot MultiBox Detector

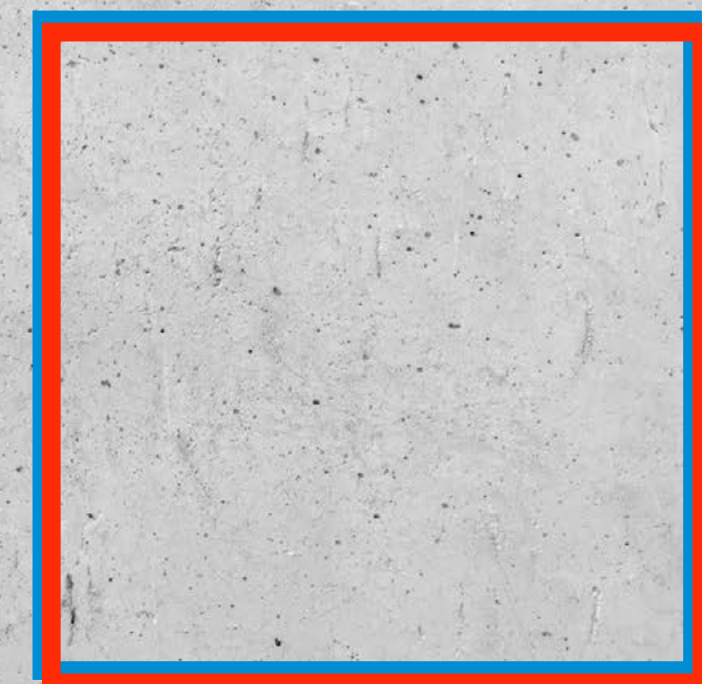
DeepDrive
/



schlecht



OK

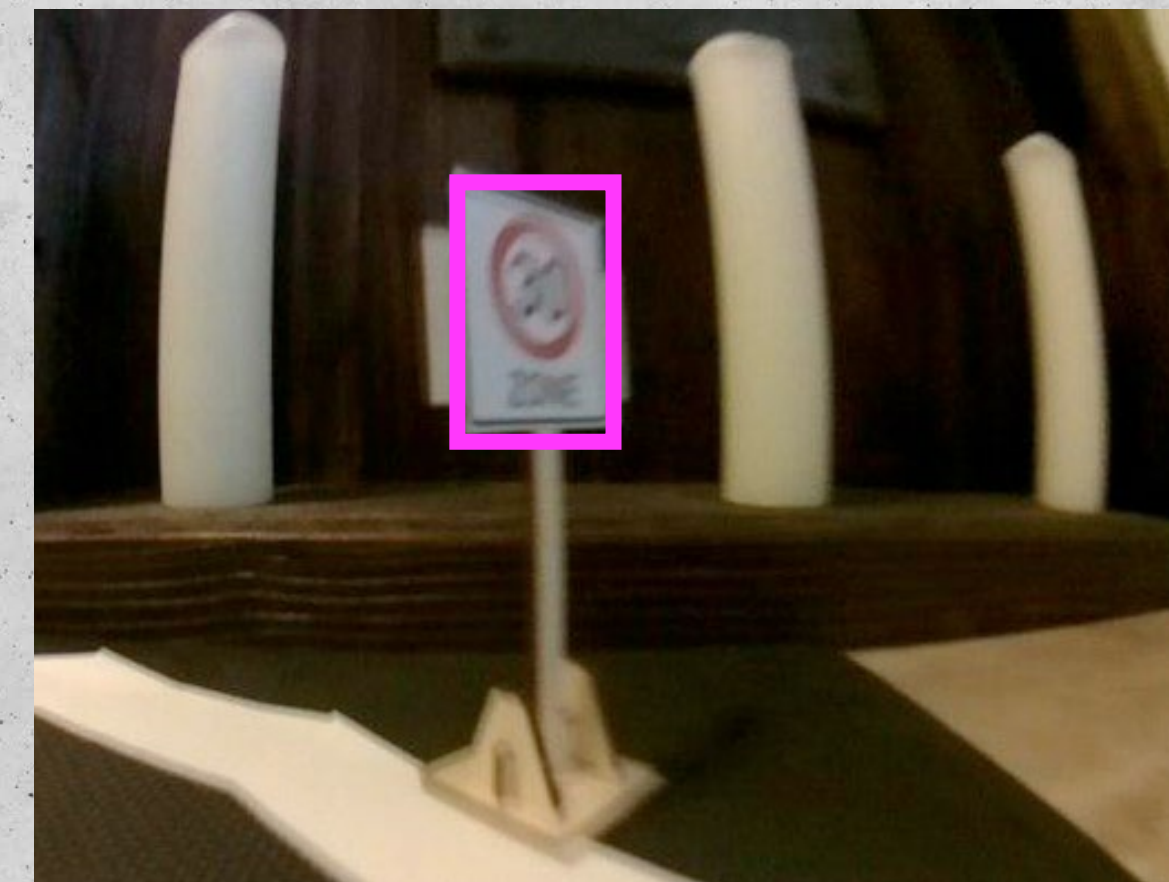
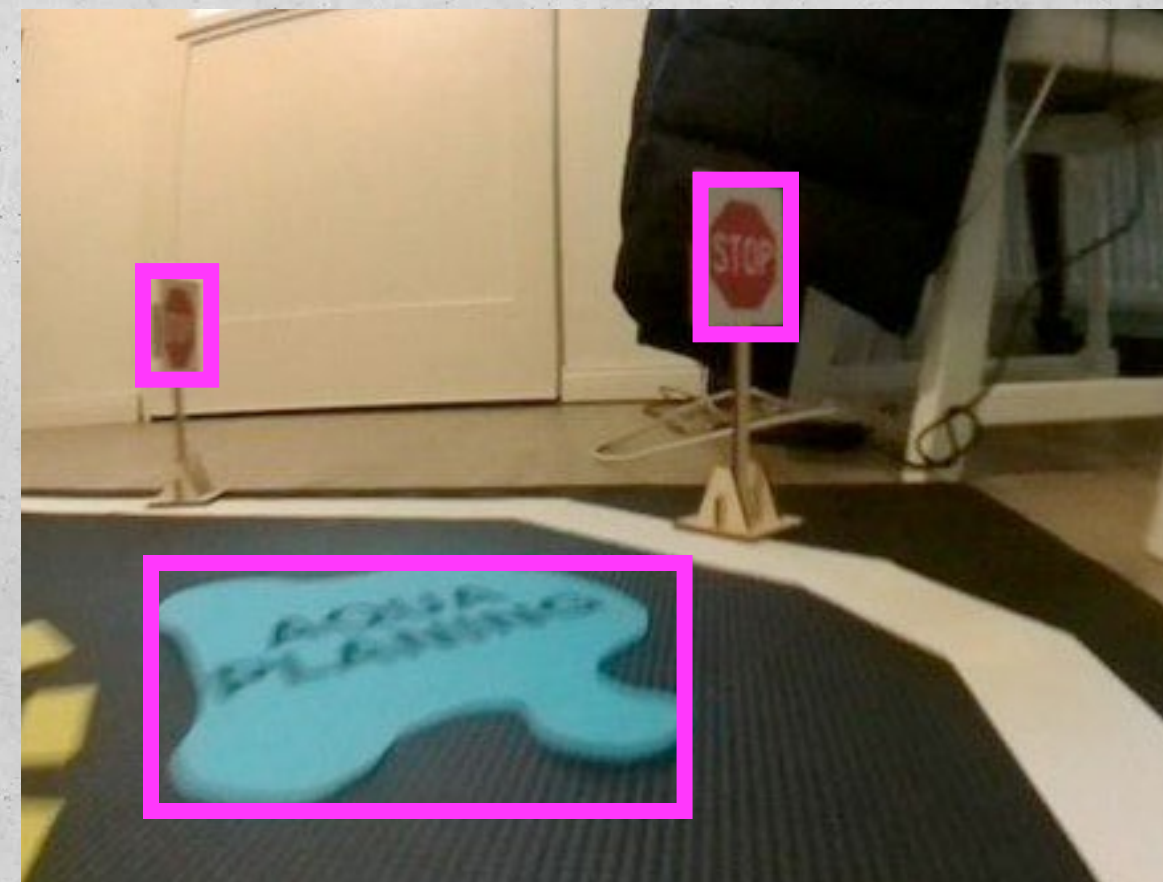
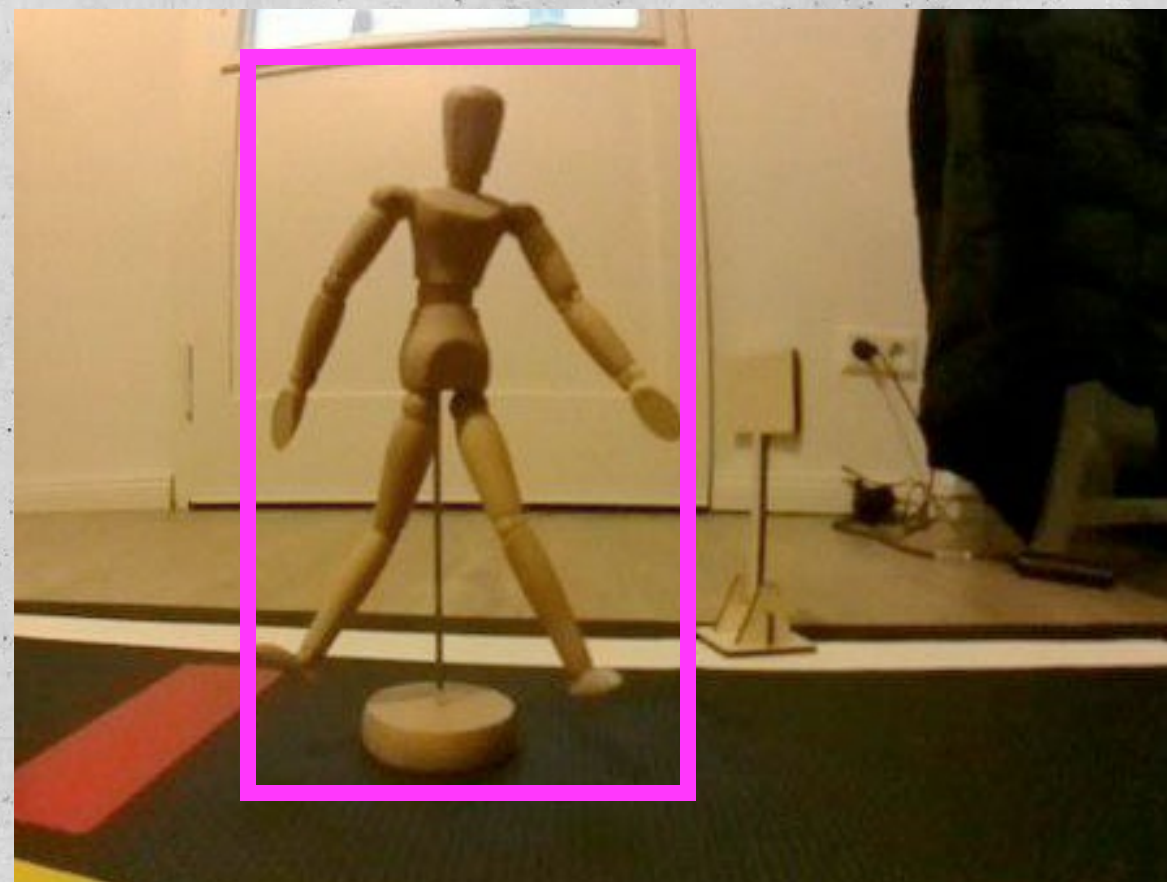


sehr gut

Erstellung eigenes Dataset:

6000 Bilder – gelabelled mit dem Tool *Labellmg*

DeepDrive
/



Training:

- GPU (JARVIS Server HDM)
- 80.000 Epochen
- 6 Stunden
- pretrained weights (COCO dataset)
- data augmentation



Finale Model Datei:

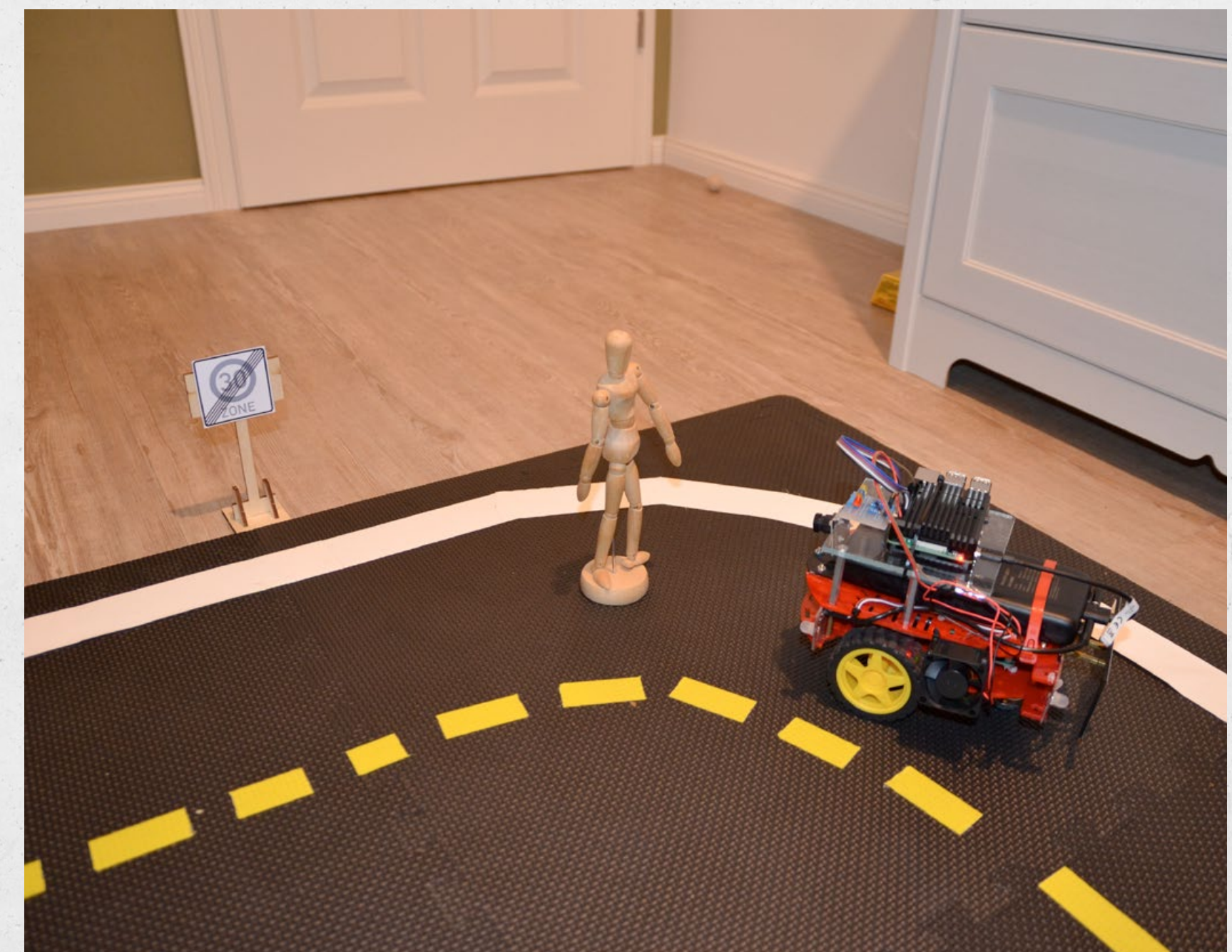
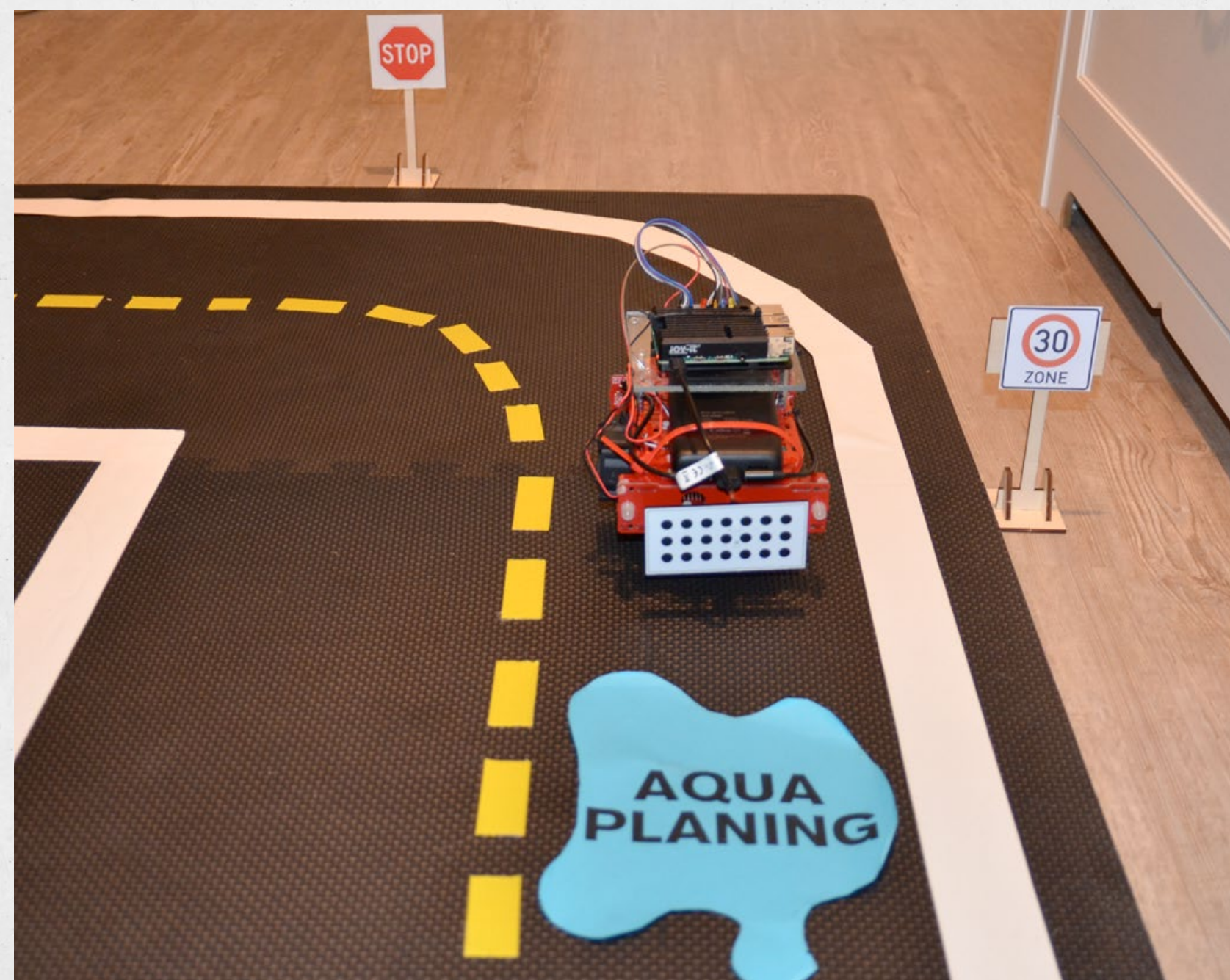
model_deepdrive.pb (22 MB)

Duckjetown



Projekt: Ute Orner-Klaiber, Medieninformatik, 6.Semester
Betreuer: Prof. Johannes Maucher, Johannes Theodoridis , Daniel Griebhaber

Autonomes Modellauto fährt auf Straße, erkennt Objekte und reagiert entsprechend
Grundlage: Duckietown Plattform

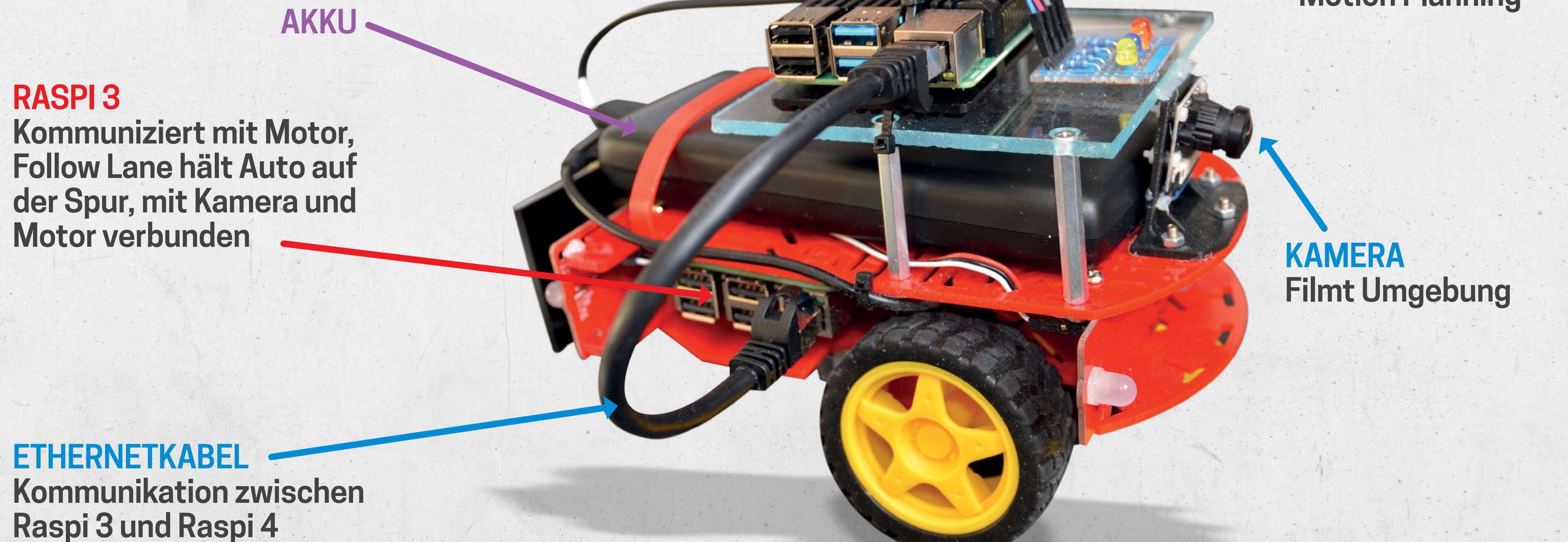


Raspberry Pi — ROS (Robot Operating System) — Docker — Embedded System

Aufbau Modellauto:

- Alles im Embedded System
- keine Cloud
- Keine Datenweitergabe
- Kommunikation der Komponenten über ROS-Nodes

Duckjetown 



Struktur Inference

Duckjetown 

