Week Report #02

Week 2 (04.15. - 04.19.)

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Overview

- Ni9elf-colab
- End-to-End Learning of Driving Models
- Refined Project Idea
- Plans for Week 03

Ni9elf-colab

- Read through the Ni9elf-colab Documentation
  - Summary in /docs/notes/Ni9elf-colab.md

- Relevance for the project:
  - Real time capable Object Detection from RGB-D data useful for object/floor type detection
  - Issues with small objects may not be applicable for mobile robot identifying objects in an enclosed space

End-to-End Learning of Driving Models

- Read through parts of End-to-End Learning of Driving Models with Surround-View Cameras and Route Planners
  - Summary in /docs/notes/EndToEndLearningOfDrivingModels.md

- Relevance for the project:
  - Datasets probably irrelevant
  - Driving Model Learning potentially useful
  - Cited sources may contain useful information

Refined Project Idea

- Object/Floor Detection and Path Planning for Mobile Robots
  - Floor Type & (Canny) Edge Detection for Environment Mapping
  - Floor Type & Object Detection to find target waypoints for the mobile robot
  - Mobile Robot Driving Model
    - Task Planning and Prioritisation Module
    - Route Planning Module setting waypoints in the virtual environment map and adjusting route for obstacles
    - low-level navigation routine driving to the next/highest priority waypoint

Plans for Week 03

- Read remaining sources
  - End-to-End Learning of Driving Models with Surround-View Cameras and Route Planners
  - End-to-End Navigation with Branch Turning Support using Convolutional Neural Network
  - Taskonomy: Disentangling Task Transfer Learning
  - LayoutNet: Reconstructing the 3d Room Layout from a Single RGB Image
- Create first draft of mission statement