Masterproef verslagen: Dieter Balemans

Datum	25-02-2019
Aanwezigen	Dieter Balemans; Jens de Hoog
Verslag vergadering	Research simulators + tools Installation + testing CARLA Simulator Installation NVIDIA Digits platform Defined research questions
To do's	Start implementation preprocessing step Camera object detection → Digits Lidar segmentation → pointcloud library

Datum	04-03-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	Setup Nvidia Digits to train DNN models Setup Ros_bridge for carla Researched openCV -> usage of dnn for object detection Researched KITTI http://www.cvlibs.net/datasets/kitti/
To do's	Python script for carla actor simulation: RGB and LIdar Point cloud segmentation (point cloud library) Ros (DUST) node for object detection (YOLO model)

Datum	11-03-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- Python script for carla actor simulation: RGB and LIdar - Done - Point cloud segmentation (point cloud library) - Segmentation done (http://pointclouds.org/documentation/tutorials/don_segmentation.php#theoretical-primer) - Researched object tracking algorithms -> real time lidar object (segment) tracking
To do's	Lidar segmentation with CUDA Camera object detection with YOLO and CUDA

Datum	18-03-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- Object detection using YOLO (darknet) and openCV https://pjreddie.com/darknet/yolo/ - Installation of PCL cuda => implementation semi working
To do's	Simon - Check voor hardware Dieter - PCL cuda implementation - Yolo object to ROS

Datum	25-03-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- PCL reimplementation of segmentation algorithm: better results - Intermediate Paper - Full installation on new system with more powerful GPU (capable of running yolov3 and segmentation simultaneously) - Documented installation process Problems: PCL GPU doesn't work ⇒ C++ SIGSEGV
To do's	https://sensorfusion-carla.readthedocs.io/en/latest/ https://github.com/siddharthbhonge/YOLO_with_Nvidia_jetson_TX2 Fusion step implementation PCL GPU Intermediate paper

Datum	01-04-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- Research Kalman filter (libraries) for object tracking + started implementation fusion step - Intermediate paper - Fixed PCL GPU problem
To do's	Implementation fusion fase System 2: low level fusion

Datum	24-04-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- Implementation fusion fase = Time synchronization; coordinate transformation; object association - Researched object tracking (Kalman filter)
To do's	Implement Kalman filter (using libraries) for tracking objects ⇒ future work System 2: clustering base YOLO

Datum	29-04-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- Improved system 1: camera first fusion (good accuracy + stable fps) - Implemented system 2: cluster based yolo (improvements needed => performance depends on clustering algorithm)
To do's	KITTI benchmark tests (backup carla tests)

Datum	06-05-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- KITTI benchmark tests (raw data) => evaluation script in dev kit but need need to find right hypotheses to evaluate - Searched ways to improve detection
To do's	PCL bounding box Uitvoeren KITTI benchmark State of the art

Datum	15-05-2019
Aanwezigen	Dieter Balemans; Simon Vanneste
Verslag vergadering	- PCL bounding box (not optimal) - KITTI benchmark using the raw dataset and tracklets as ground truth
To do's	Paper Extra results (3D parameter)