

Bedrijf / opdrachtgever : PXL Smart-ICT

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Aantal medewerkers: 25

Aantal IT medewerkers: 23

Aantal technische begeleiders: 5

Afstudeerrichting: Applicatie-ontwikkeling - AI & Robotics

Opdracht

Micromobility: Autonomous Driving

The AI & Robotics Lab is conducting research to create a prototype solution for the problem of micromobility. This prototype involves an autonomous golf cart that can find its way around the Corda Campus.

Previous research and development resulted in a monitoring tool to analyze sensory

input in real-time and enables us to record the data that is retrieved. Furthermore, trained AI-models can be run in shadow mode in the tool, so AI decisions can be analyzed on the go.

During this internship for 2 students, you will develop and train a working, self-driving model that can navigate to fixed points on Corda Campus. You will closely cooperate with each other and Electronics colleagues, who will provide support concerning the hardware.

While searching for the optimal way to realize autonomous driving in this context, you will extend the existing framework with features that are needed for your use case.

Extra Info

The existing framework consists of several ROS nodes that exchange information about sensors, cameras, recordings and AI decisions. The code is mainly written in Python. The monitor frontend is web-based, but will not require lots of extra work during this internship.

Your sole focus is making the cart drive autonomously. This means:

Determine a global path (path planning)

Keep it on the road

Control the speed

Make sure it stops in dangerous situations

When possible, avoid unknown objects at a safe speed

You will work together to accomplish this, we will discuss the exact distribution of the different tasks.

Omgeving

Andere

Randvoorwaarden

ROS knowledge is required, so no time is lost at the start of the internship. Knowledge about autonomous driving is a pro.

Driving the golf cart requires a driver's license (B).

Thesis can be written in English, but this is not an absolute requirement, Dutch is an option as well.

Onderzoeksthema

As you've noticed, the whole internship is research-based, as you will be working with relatively new concepts and technologies. We will add a specific research subject for each student, which he/she will investigate individually.

Junior-colleague 1

You will investigate how to use GPS coordinates of the golf cart and the destination to create a global navigation plan for each navigation session. In other words, you will be tasked to search for an optimal path planning solution in our specific context.

Junior-colleague 2

You will investigate how the cart will behave when it encounters unexpected objects like pedestrians, road works, ... Firstly, you will look for ways to detect these objects, and secondly, you will search for a way to avoid the obstacles in a safe manner. In other words, you will be tasked with the cart's object avoidance.

Inleidende Activiteiten: Sollicitatiegesprek

Aantal studenten: 2 studenten

Aanwezig op het Handshake Event:

Stageopdracht voor:

Andere bemerkingen:

Handtekening Stagebedrijf
Steven Palmaers

Naam en handtekening stagiair