

Assignment

To achieve sustainable food production, the Mechatronics Research Group works on several agricultural robotics projects. In one of the projects, a weed removal tool is developed that can be used on mobile agricultural robots. A first prototype of that tool was developed and is currently available.

The tool should be able to work on a mobile robot that is continuously driving over fields. The tool receives the coordinates of detected weeds and crops in its working area. The tool uses heat to remove the weeds and should be able to plan the head from weed to weed and keep the tool stationary on a weed while the robot moves.

Task description

The planner for the tool is currently made in ROS 2. The task will be to analyse the current approach, and to design and implement the planner and test it for challenging situations. Testing can be done in simulation with a model of the tool and plants (lower image), but we also have a physical test setup with moving weeds and crops (upper image).

The focus will be on dynamic motion planning of the tool using the MoveIt2 framework.

Practical Information

Student Profile: Mechatronics, Computer Science / HBO-ICT, applied computer science

Duration: February 2023 – July 2020

Compensation: ±230 euros per month before taxes

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