

GARotics

Green asparagus harvesting robotic system

iROS
Hamburg 2015



- <https://www.youtube.com/watch?v=wcp2Uq2E6IE>

Experiment keypoints

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- Automatic asparagus harvesting
- Vision-based asparagus detection and tracking using Microsoft Kinect v2
- Vision-based asparagus quality assessment depending on size and shape
- Novel gripping mechanism with three robotic arms for increased harvesting rate



Vision System

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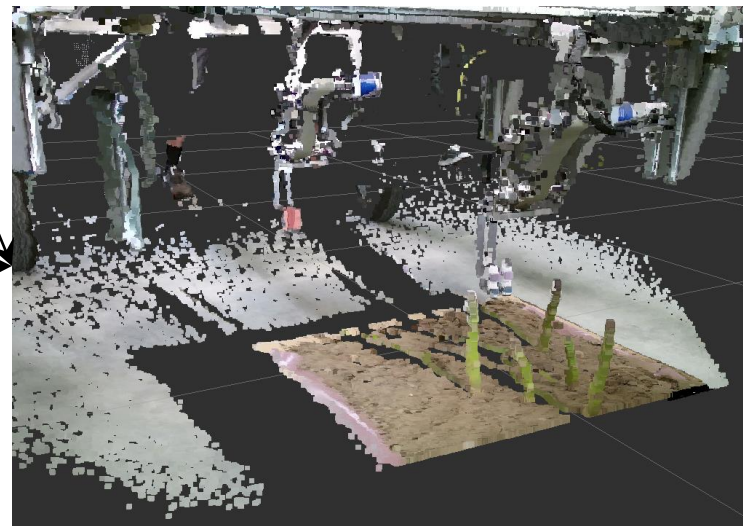
RGB Image



Microsoft Kinect v2



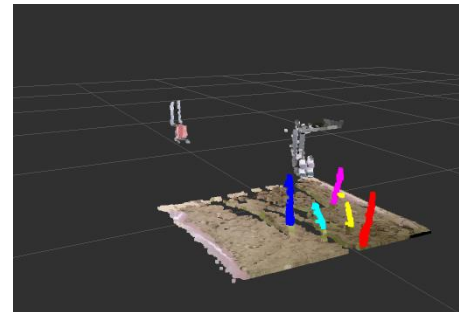
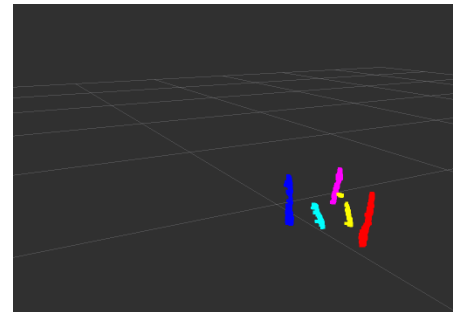
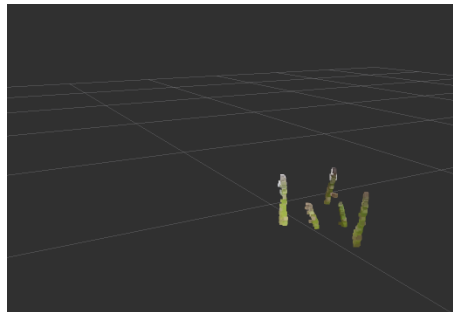
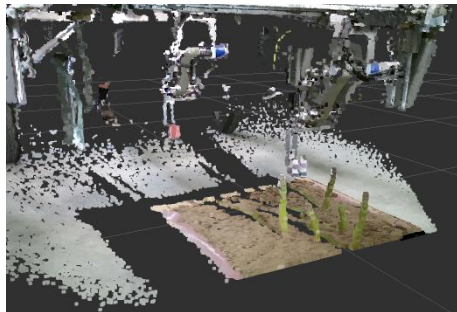
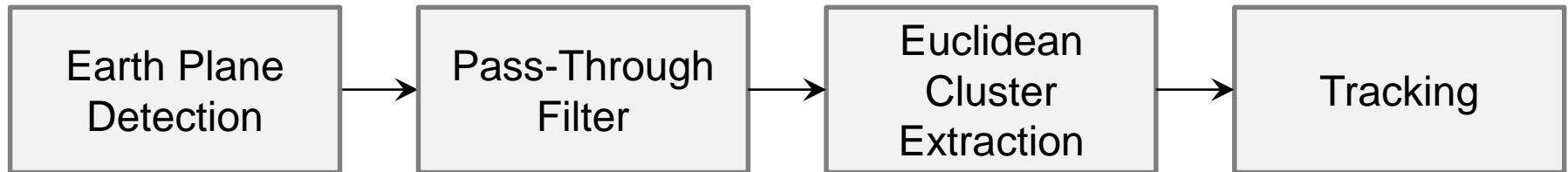
Depth Image



3D Point Cloud

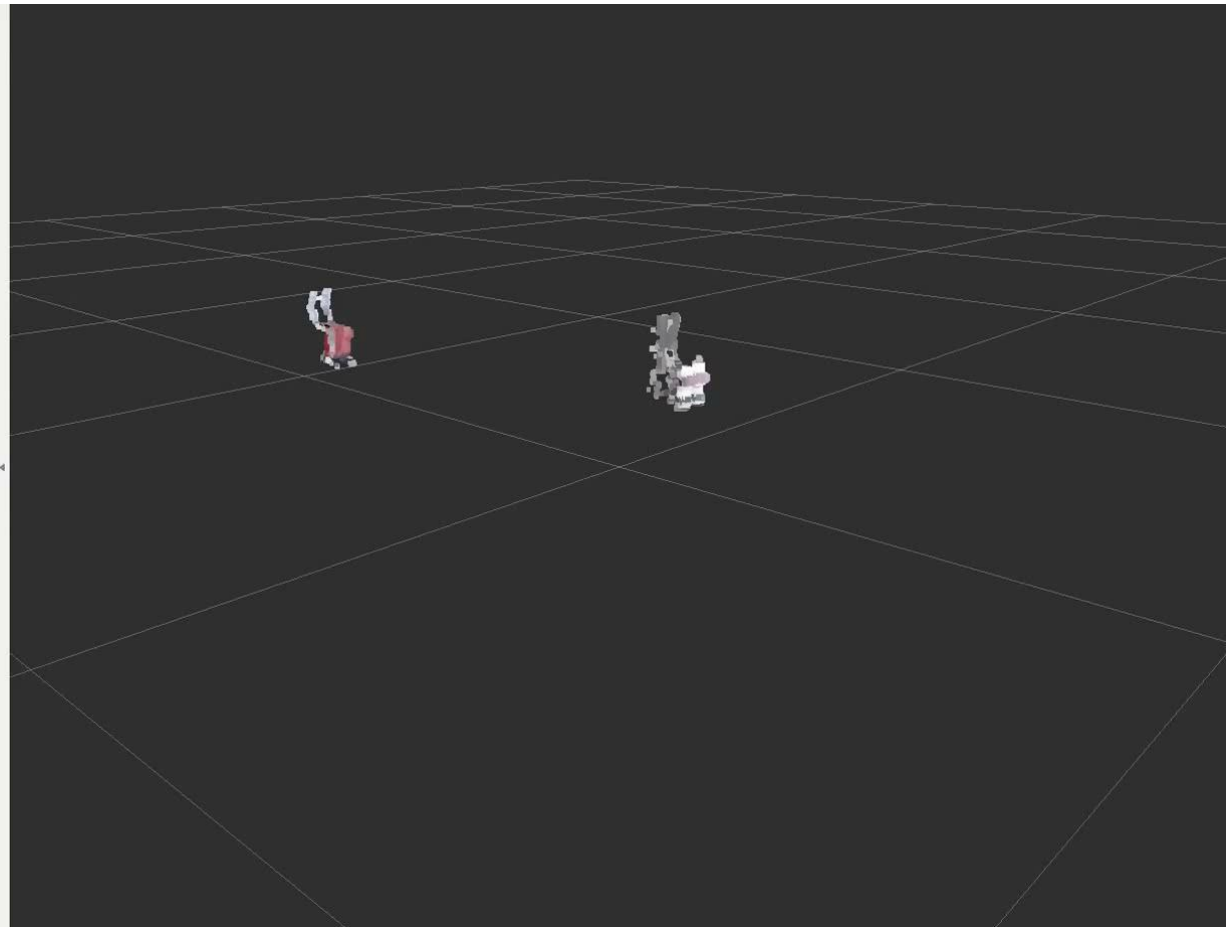
Asparagus detection & Tracking

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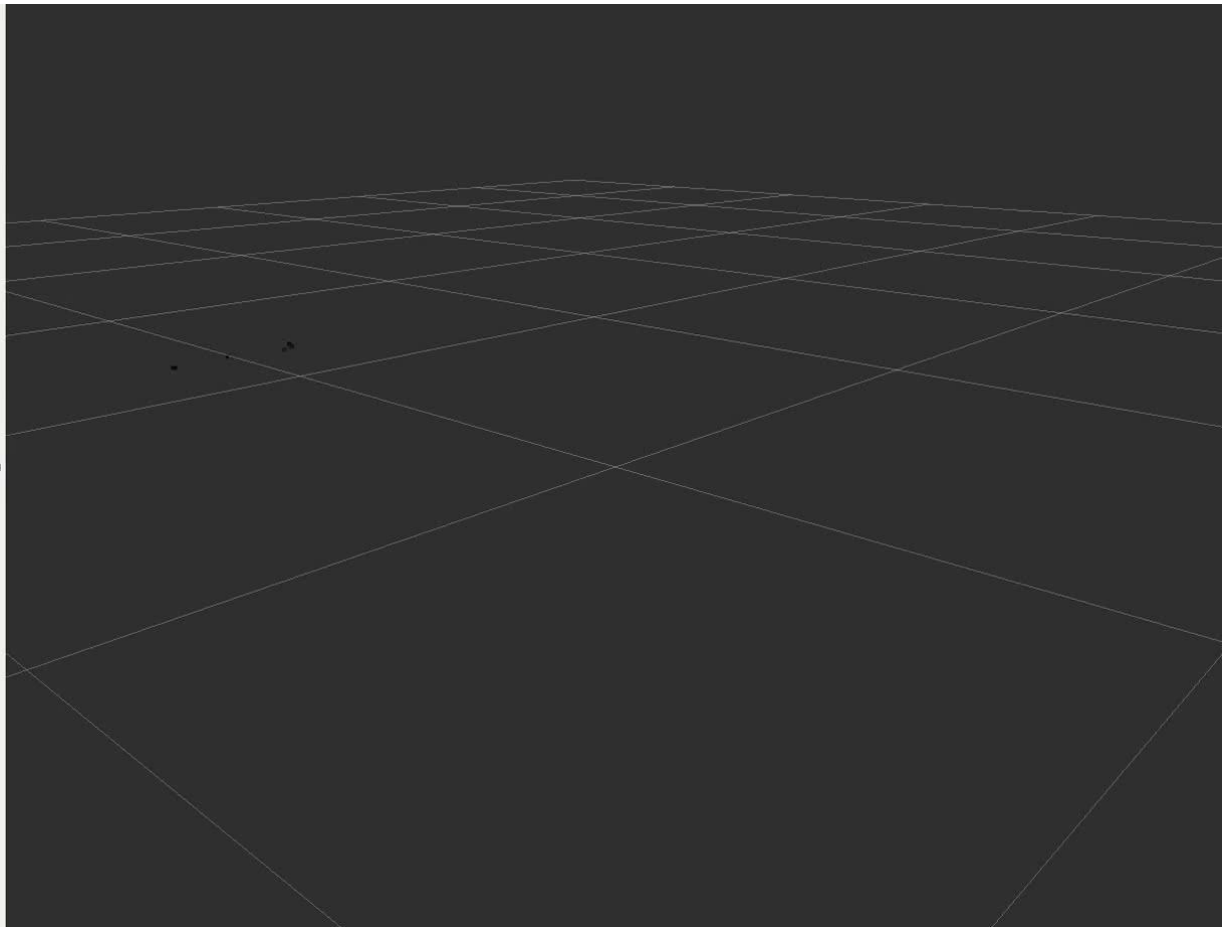
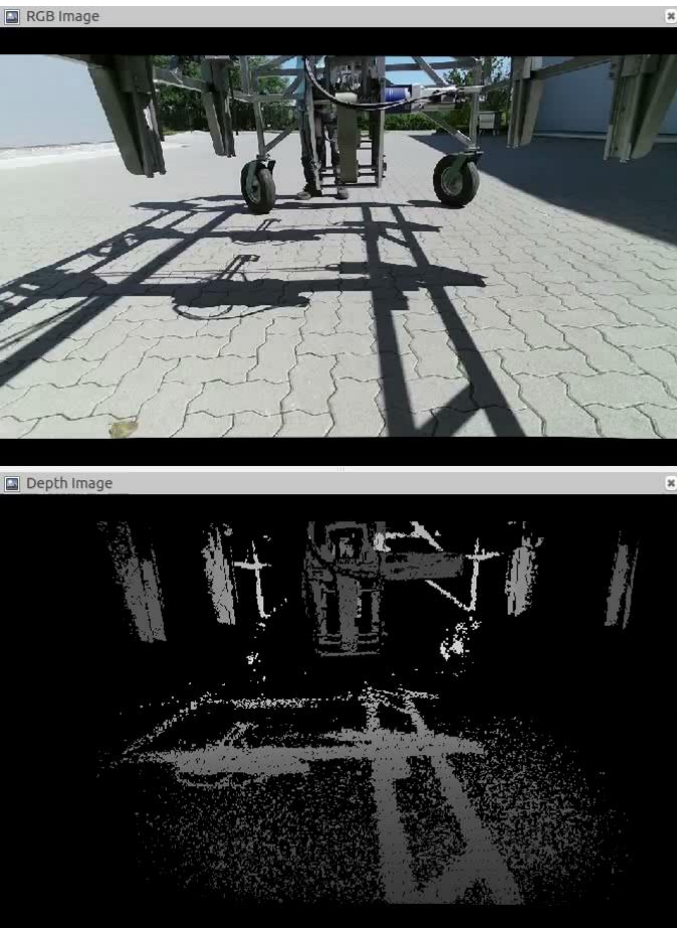
Preliminary indoor tracking

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Preliminary outdoor tracking

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- The vision system is currently still being improved
- Using the Microsoft Kinect v2 camera, asparagus can be reliably tracked both indoors and outdoors
- More noise in RGBD images that were recorded in direct sunlight
- Based on the tracking data, quality assessment of the asparagus will be performed
- The novel gripping mechanism with three robotic arms for increased harvesting rate is still under development



ECHORD ++ Project Partners:



Bristol Robotics Laboratory

