ROS2 Computer Vision

Learning outcome

This exercise will help students to familiarize with the implementation of basic computer vision tasks such as object detection and tracking in both simulation and real environment. The simulation task is associated with ROS and Ignition Gazebo Simulator. The vision algorithms are implemented in python programming language. Anaconda python distribution is used for managing python environments and packages required for the exercise. Finally, jupyter notebooks will be used for a more interactive and understandable presentation.

Grading

Grade 3: task 1 + 2 + 3, successful demo and could answer all questions
Grade 4: task 1 + 2 + 3 + 4, successful demo and could answer main questions
Grade 5: task 1 + 2 + 3 + 4 + 5, successful demo and could answer main questions

Equipment:

This exercise requires Ubuntu 22.04 and ROS Humble and a working usb/webcam device.

The exercise is guide and instructions are hosted in the following github repository. (switch to humble branch)

https://github.com/KulunuOS/AUT.700-E4.git

To arrange a demo contact: Eetu (eetu.airaksinen@tuni.fi)