Real-time Multi-sensor Processing Framework Based on ROS

Multi-sensor data can provide rich environmental information for robots. In practical applications, it is necessary to ensure real-time and synchronous processing of sensor data. In this work, the student needs to design a ROS-based sensor data acquisition and processing framework and carry it on an existing robot platform. Specifically, the sensors involved in this project include RGBD camera, millimeter-wave radar, LiDAR, and IMU. There exist clock deviations between different sensors. The student needs to calibrate the clocks uniformly to make the timestamps of the data collected by the sensors consistent, transmit the collected data to the robot platform in real-time, and process them into the required data, such as point clouds, RGB pictures, etc.

Voraussetzungen

- Strong familiarity with ROS, C++, and Python programming
- Experience with hardware and sensors
- Basic knowledge of robotics

Kontakt

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(Please attach your CV and transcript)

Betreuer

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