Innovationlab

Technische Hochschule Rosenheim

Dimos-LiCaFuse

"Enhancing Vision with LiDAR Precision"

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Motivation and goals

- **Accurate Object Detection:** Use LiDAR and camera to detect objects and determine their exact position and size.
- **Real-Time Data Sharing:** Send object data instantly for applications like self-driving cars and security systems.

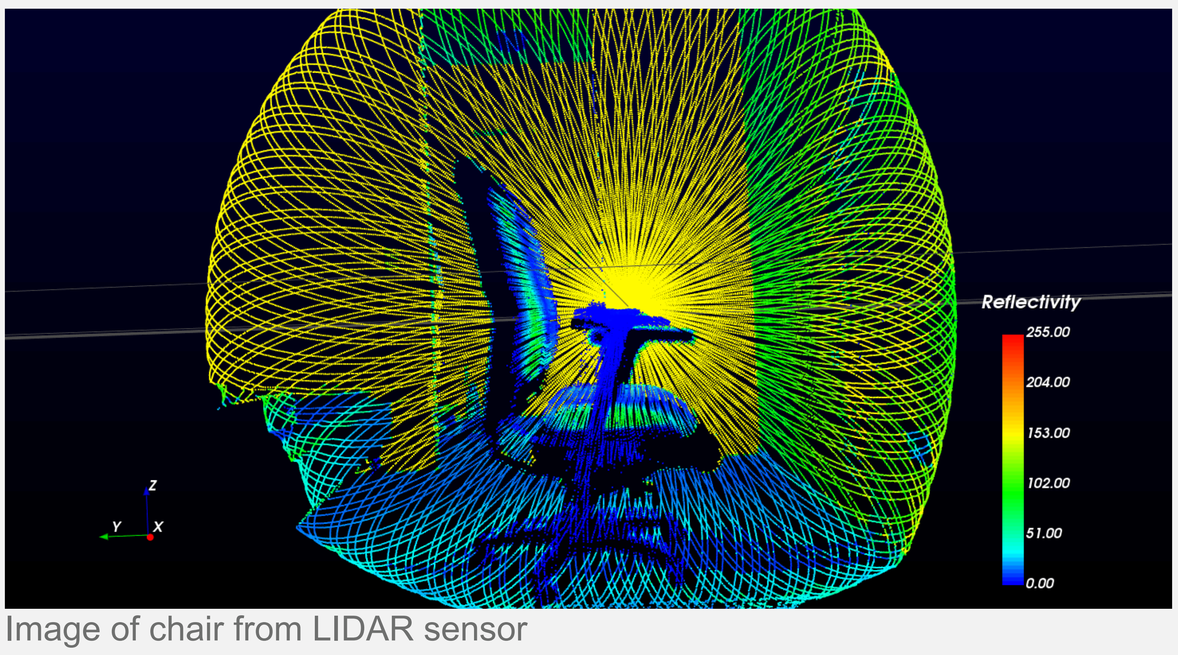
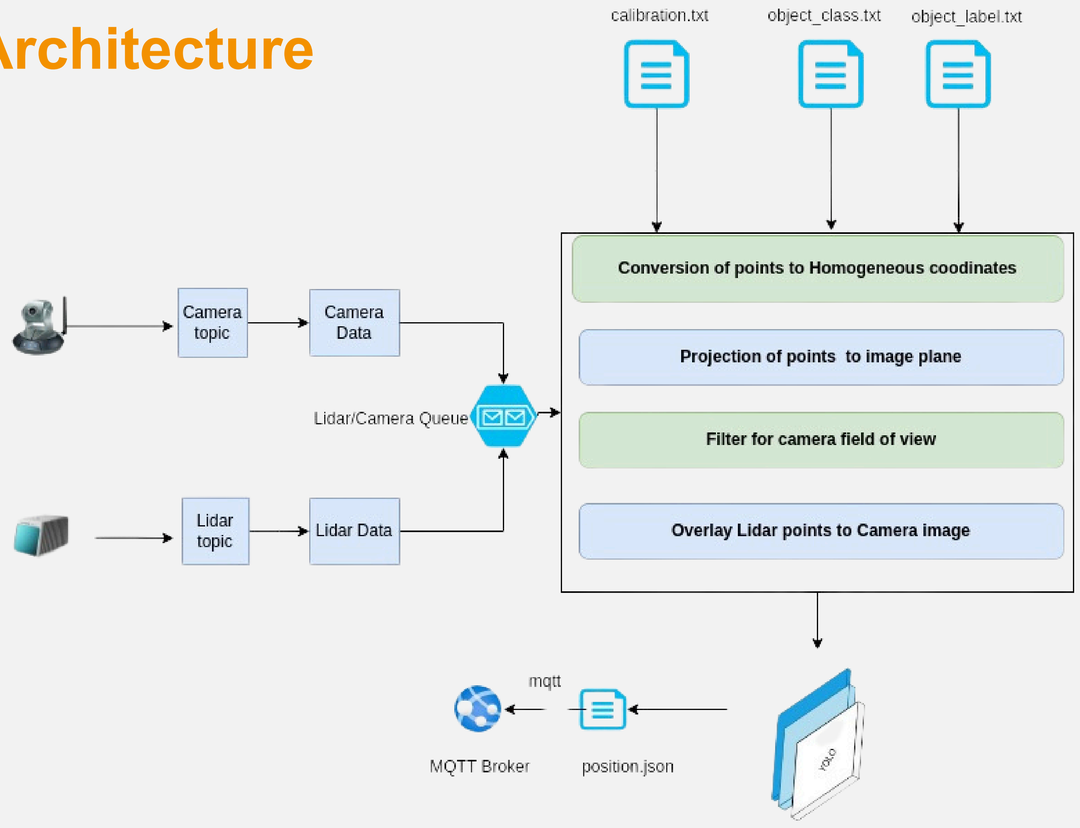


Image of chair from LIDAR sensor

Our Device

Architecture

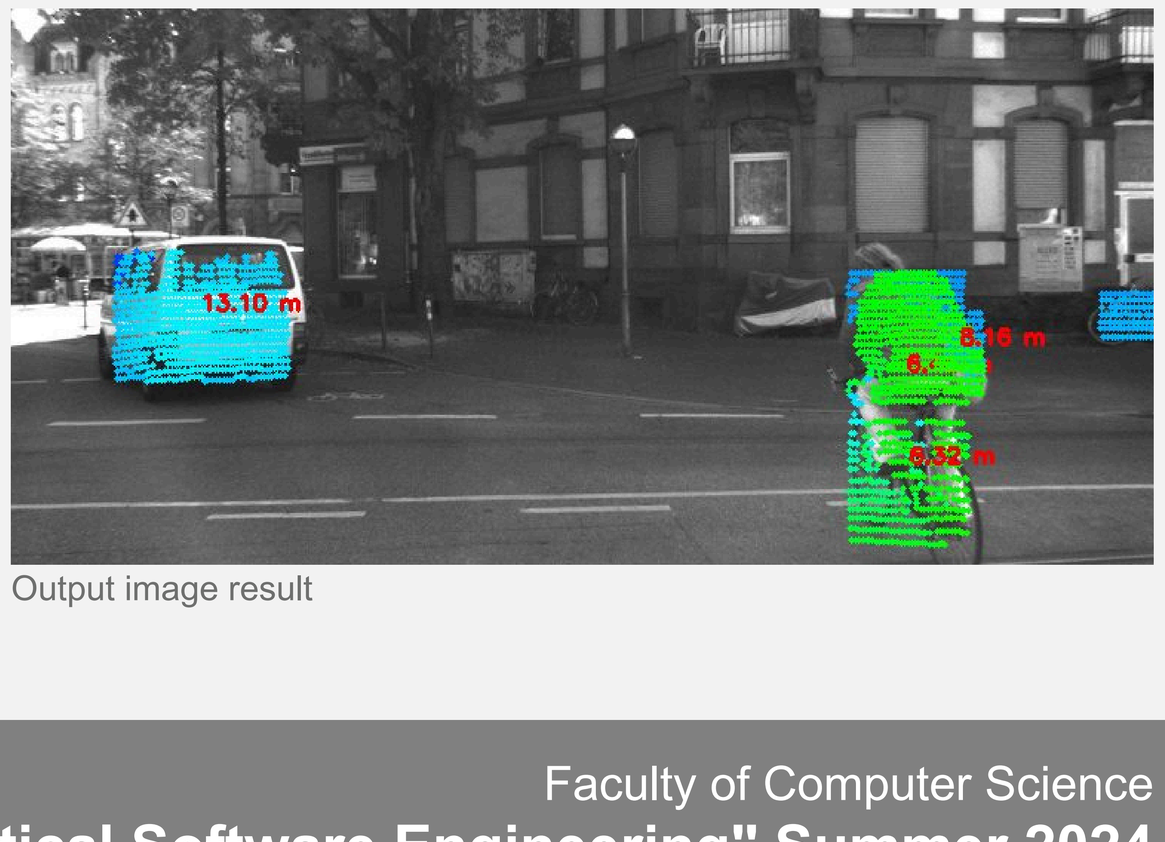


Results:

- **Accurate Distance Measurement:** Objects like cars and cyclists are detected with precise distance measurements.
- **Real-Time Object Detection:** Multiple objects in the environment are identified and tracked in real-time.

Key steps of our Project

- **Data Retrieval:** Acquire point cloud data from publicly available LiDAR datasets.
- **Object Detection :** Implement clustering algorithms to detect objects within the point cloud data.
- **Data Extraction:** Determine the location (x, y, z) and size of detected objects.
- **Data Transmission:** Send this information to an MQTT broker for real-time applications.



Output image result

DiMOS DIGITAL MOBILITY OPERATING SYSTEMS

Faculty of Computer Science

"Practical Software Engineering" Summer 2024

Prof. Dr. Gerd Beneken, Prof. Dr. Wolfgang Mühlbauer