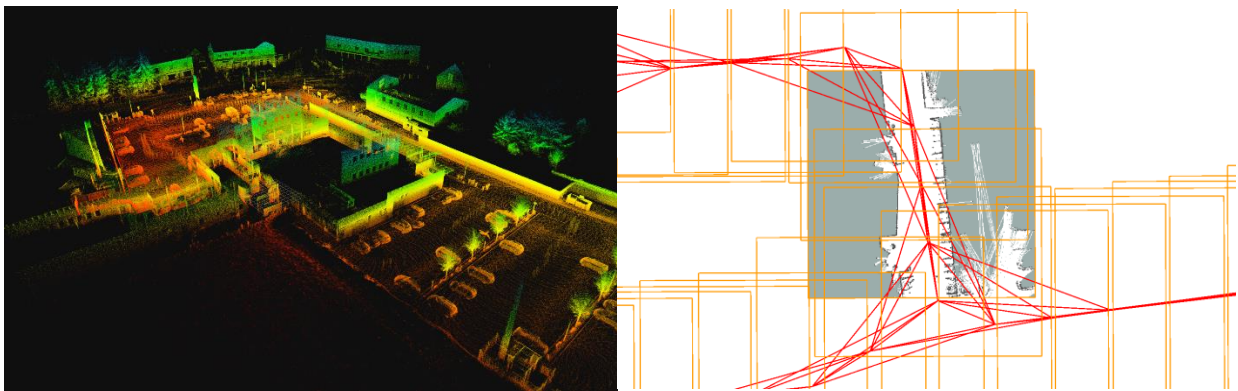


## | Potential Master's degree topic:

Automated Map update on server side considering bandwidth constraints



## | Additional Information:

**Keywords:** 2D Mapping, 3D Mapping, Map-updates, SLAM

**Fields of Research:** Environmental Perception, (autonomous) Robotics

**Short description:** Starting from an initial map created with a LiDAR-Scanner (2D as most basic variant), the original map is to be successively improved and better understood by incorporating changes in the environment over time.

New map information data will be sent to an intermediary server, where data is processed with an existing ARTI-AI Kit (LOKI). When data is processed on server-level, the new map-information is compared with existing

mapping-material. If the comparison finds significant changes, a new map is created. This map is then fed back to the robot.

The research questions to be worked on are: finding parameters to define, whether changes in the map are “significant” or not and to develop a pipeline to feed the newly updated maps back to the robots.