

Master's Thesis

# 2D to 3D ray casting for completeness verification of aircraft inspection

In this work the student is provided with 2D images and a 3D point cloud from our drone simulation. This sensor data shall be used to verify the completeness of an aircraft inspection, which was done in the simulation. The first part will be to register the images with the point cloud in order to have a single coordinate system. The next step is to perform ray casting from every pixel into the point cloud and mark the points which get hit by the rays. This shall be done with all images which were taken during the aircraft inspection by the drone simulation. The final goal is to compute a metric how much of the aircrafts surface was inspected by the drone. The work has a strong focus on ROS and C++, so students with experience will be preferred.

## Prerequisites

C++, ROS

## Advisors

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