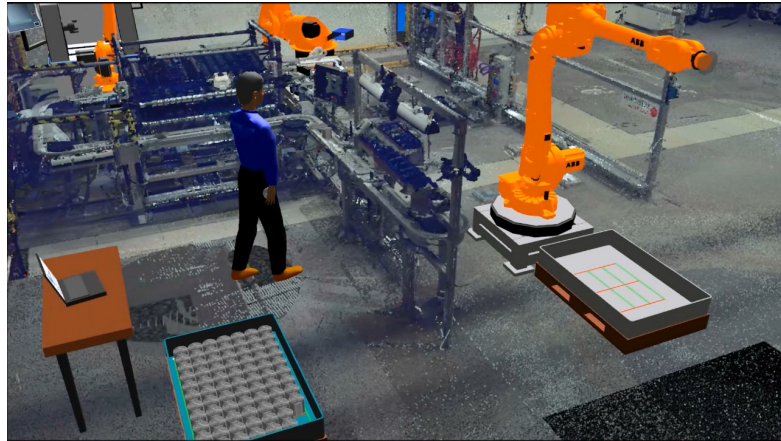


Automatic positioning of objects in point clouds



Background

The department of product and production development at the Chalmers University of Technology and Fraunhofer-Chalmers Centre (FCC) are currently offering a master thesis position entitled “Automatic positioning of objects in point clouds”. The scanning of pointclouds is a well-developed technology, however using the pointclouds for performance enhancements in terms of lead-time reduction of engineering work and increased accuracy/quality of the work is not as advanced. The goal of the thesis is to examine how a point cloud of unintelligent “dead objects” can be used to identify and place intelligent objects, such as robots, machines, conveyors, accurately in the virtual environment. The ability to carry out these tasks is an essential part of many virtual modelling tasks and is currently a state-of-the-art and exciting research topic.

Task

- Develop an algorithm to identify objects in a point cloud
- Place the intelligent objects as accurate as possible in the point cloud
- Measure the tolerances and document the accuracy of the scanned objects
- Compare a scanned model with the CAD model and measure the differences

Goal

- The development of an algorithm using existing software to find objects in a point cloud
- Provide correct metrics on factory level in terms of object placement and accuracy
- Evaluate different approaches to the proposed problem
- Document the empirical results in preparation for a scientific contribution

Means & Conduction

Office, computer and software will be arranged by Fraunhofer and Chalmers.
This thesis work needs to be conducted by two students.

Information

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