FEATURE DETECTION IN 3D POINTCLOUDS

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ABSTRACT

The modern industry is currently faced with a manufacturing change. This change is known as Industry 4.0 and introduces numerous changes from the former industrial revolution. Some of these changes is the introduction of robot vision. Robot vision is not a new invention however, as it holds many uses in the industry, the benefits of introducing it to the manufacturing processes makes it invaluable to the industry 4.0.

Upon its uses, quality inspection with regards to feature detection stands out. Here, robot vision can be used to detect features on the manufactured goods. The features can then be matched to those of the CAD drawings and defects can be identified.

This project will focus on the feature detection, using robot vision. To carry out this project, metal sheet elements will be used for scanning of their features, such as bends, holes, etc. These scans will then be presented as an image, consisting of a 3D point cloud, which will then be analysed and determined if the features are within acceptable tolerances.

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