SDU Robotics

PhD project

Computer Vision for Robotic Grasping

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Abstract

Computer vision has the potential to enable automation of many industrial tasks, but often requires a lot of manual work by an expert, making it infeasible for low-volume productions, and in some cases, even with expert-knowledge, current methods are not robust enough yet for industry. Deep Learning has shown significant performance improvements on various vision tasks, but requires data. This study aims to explore vision systems that can either be automatically configured from simulation, or configured using automatically gathered data, to make them applicable to automation of low-volume productions. The study focuses on pose estimation; estimating the position and orientation of objects from images, which is a long standing problem with many applications in industry, like bin-picking, as well as visual servoing, enabling high-precision tasks in flexible systems.