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Object Recognition of 3D Logistical Cargo Using Machine Learning Algorithms.

ABSTRACT - Masterthesis

3D Computer vision is a powerful technology that enables a computer to duplicate the abilities of human vision by electronically perceiving and understanding an image. The research aim of this topic is to identify, evaluate and apply Image processing, Pattern recognition and Machine Learning algorithms to 3D Point Cloud Data obtained using the Kinect Camera to recognize and classify different logistical cargo.

A classical problem that arises here is to determine whether or not the image data contains a specific object. The computer understands whether images contain a certain object by the means of certain features which will help probabilistically determine it. Computer vision is prone to many errors and constraints as it is probabilistically determined using machine learning. The ultimate goal of this thesis is to maximize he recognition capability of the computer by minimizing these errors and improving the efficiency of the machine learning algorithms by the best probable features and obtaining good quality results.