Abstract

With the progression of the capabilities of artificial intelligence (AI) has created new paths in which AI’s can be utilized. Artificial intelligence is used in various ways in the computing industry. Photogrammetry is used in computing companies such as video games, and movies. It is used to create 3D models from a set of images of an object from various angles. It has becoming increasing popular for 3D designs for games and productions with designing environments, characters, or props, as it speeds up the modelling time and gives a more realistic model.

The objective of this thesis is to investigate whether AI can be used with photogrammetry. The aim of the thesis is to train a neural network (NN) with images of an object to be capable of predicting the objects position, orientation, and scale from data given from different camera perspective. The neural network was trained by giving it the position of the corners of a cube in Unity and exporting the data to a dataset. This allowed for the NN to learn and predict the position of the cube accurately.

The neural network is created by using keras machine learning. The NN is constructed with a series of dense layers. The layers define the relationship between the data that is entered at each layer. With larger collection of data the neural network becomes more accurate with its prediction.