Neural Network on FPGA Midterm Report

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# Executive Summary

An Artificial Neural Network is a commonly used method for machine learning applications and pattern recognition. By using a large amount of training data, they are able to accurately solve complex problems through an iterative training method.

The goal of this project is to compare a purely software based approach to an FPGA design. In theory, this would allow the artificial neural network to run in a parallel environment, taking better advantage of the structure of the artificial neural network which is highly parallel in nature.

The projected end result of this project is to implement a neural network that can process information as fast, or faster, than a neural network implemented through hardware.

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# Theory of Operation