

In this document, I discussed the implementation and execution of the neural network code. An implementation related to neural network with 3 inputs and an implementation related to neural network with 784 inputs.

Summary of the project:

Neuron Module Overview:

- A neuron module is defined with specified inputs and outputs.
- Three 32-bit inputs and one 32-bit output are used.
- Weights and bias are initialized with non-zero values.
- ReLU Activation Function: The ReLU function sets the output to the weighted sum if it's positive; otherwise, the output is zero.

Testbench:

- Inputs, clock (clk), and reset (rst) are initialized.
- A clock signal with a period of 10 nanoseconds is generated.
- Two test cases with different input values are executed, each running for 100 nanoseconds.
- End of Simulation: The simulation ends with the finish command