

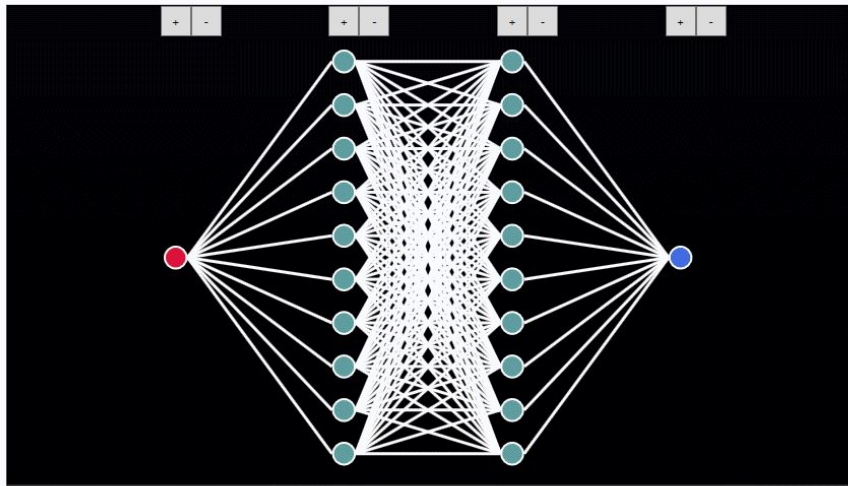
GUI for Designing and Training a Feed Forward Network

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Features/ Project goals

- A. Visual output network output
 - a. For dimension 1
 - b. Visualize the training of a neural network
- B. Set hyper parameters
 - a. Layer count, node count
 - b. Activation Functions
 - c. Batch size, Epoch
- C. Training set file input

Demonstration



Node

Layer

Activation Function

- ReLu
- Tanh
- Logistic
- Linear
- SiLu

Min, Max Random weight values

Layers

Add Remove

Reset Structure

Reset Weights

Cost Function

Verification Points

Learning Rate

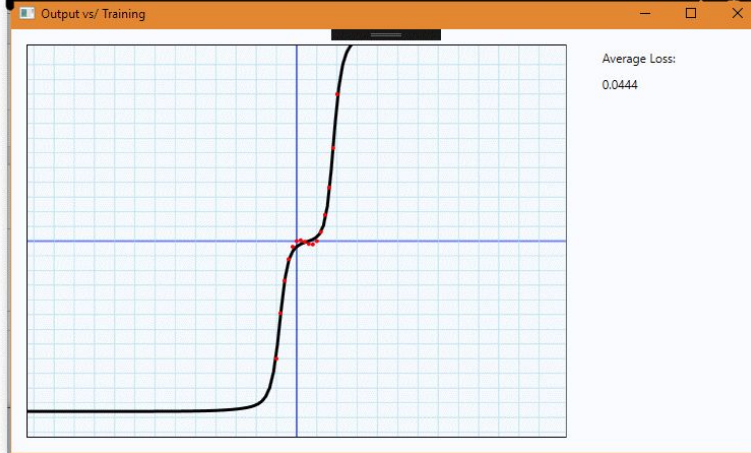
Batch Size

Epochs

- $y = \cos(x)$
- $y = 3x^2 - 4x^2 + x$
- $y = -x^2$
- Training Data File

View Output

Train



Average Loss:
0.0444

Specifications

Written in C# using Windows Presentation Forms

~1,500 lines of code

Makes use of the Math.Net library for network computations

Calculations performed on the CPU

Previous Version & Timeline

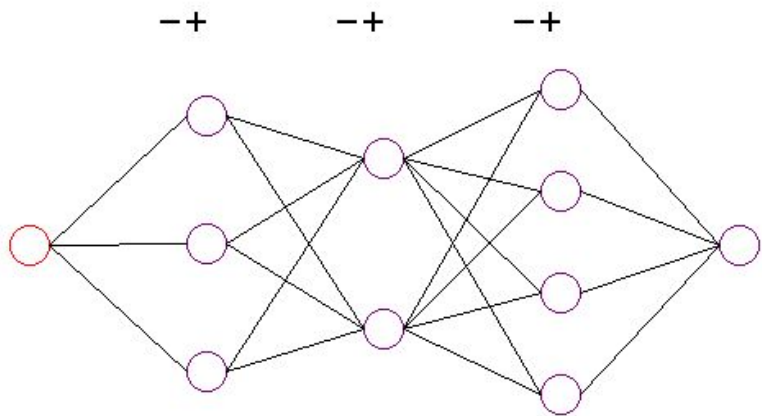
Project started December 2017

1st version written for Windows Forms

Completed during EMU hackathon

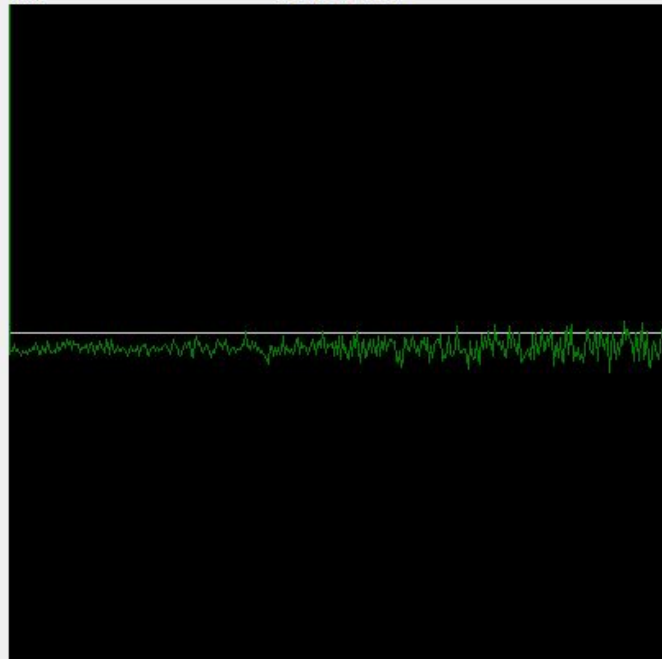
Project restarted and written for Windows Presentation Forms

January - April 2018



(1.0)

Graphical Output



(0.0)

(1.0)

Planned Features

- Teach the network for categorization problems
 - Interactive network output for multidimensional input/ output
- Import and export of the neural network
- .CSV file input

Questions, Comments, Suggestions?