Name: Vishisht Jain

Email: [jain322@purdue.edu](mailto:jain322@purdue.edu)

Link to repo: <https://github.com/Vishisht182/CS390_Lab1>

Resources:

StackOverflow (Of course)

Towardsdatascience (for clarification on F1-Score, keras net and Confusion matrix)

Completed:

* Preprocessing data
* Sigmoid and sigmoid derivative functions
* Training function for custom net
* Functioning 2-layer neural network with mini-batching
* Keras/TensorFlow made neural net
* F1 Score and confusion matrix

For custom net:

Implemented backpropagation using lecture slide equations using numpy operations. Not too complicated, since this was the main part of the custom net

For the Keras/TF Net, I just went with exponentially decreasing neurons in each layer and used relu with adam and cross entropy. Not a lot of thought here, since I haven’t messed with TF and Keras too much. Just went by gut instinct and changed activations and layers around until I got the accuracy high enough.

Output for TF net:

A picture containing chart

Description automatically generated

Output for Custom Net:

A picture containing chart

Description automatically generated