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Professor Culmer

INFOTC 3040

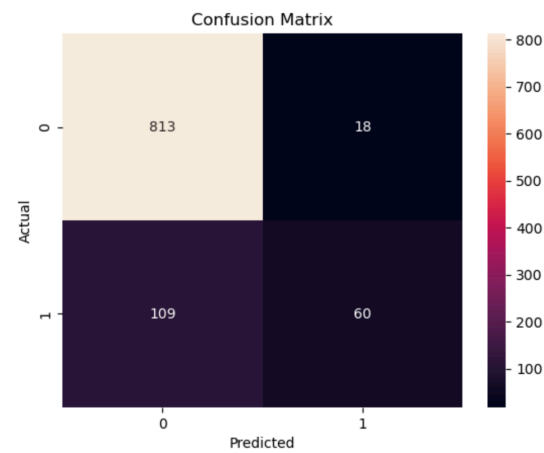
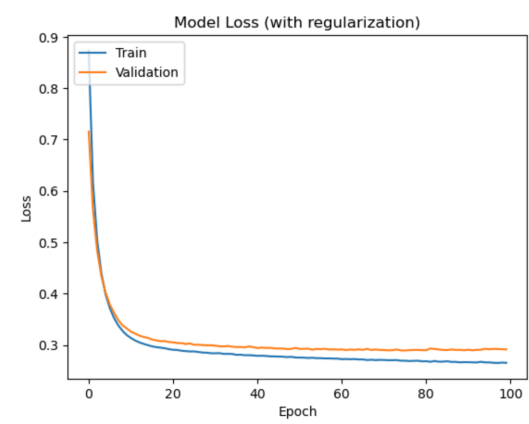
2024-10-25

## Project Two Reflection

After quite a bit of trial and error, I'm quite happy to share that I had some great success with my models!

On my shopping model. I ended up with a fairly simple model. Using an input layer with 16 nodes, to a hidden layer of 8, and just the one output layer, and some regularization, I was able to achieve some pretty solid results, both in terms of complexity, and accuracy. This model is both fairly accurate, not overfit, and computationally efficient. I achieved these results by modifying everything slightly, and seeing how it affected my results. I achieved an accuracy of roughly 87.5%, which I think is quite well.

Obviously though, there is more room for improvement. I wonder if there could've been another variable or a small tweak somewhere that could've bumped my accuracy up even more. Overall though, I am satisfied with this model, and if this was a real project, I would be happy to work harder from here.



Regarding my German Traffic Sign Recognition Benchmark, I am also quite happy with how it turned out!

Using Keras, I was able to find success with quite a large network. Using an input layer of 128, to a hidden layer of 64, then to 50, and then the softmax output layer, as well as some healthy regularization, my model compiled with 92.15% accuracy! This model was also relatively fast, as far

as image processing goes. These numbers are quite good with me, and for the time spent computing, especially without using a CNN, I think this is quite acceptable.

Like my shopping model, I spent quite some time tinkering around with regularization, epoch sizes, and other numbers to see what would give me the best results. Ultimately, I found a nice balance that gave me a non-overfit model, a rather high accuracy, and acceptable computing time.

I am also satisfied with these results, but if I could work further on anything I would want to again eliminate the space between the cross validation and training set. I think this is an acceptable amount, but the large jumps are questioning, and there is likely something that I am missing that would solve (or at least reduce) that gap.

