# MSDS Capstone Project Update #3

Did not get the results I expected with this model, but I have many ideas of what could be factors into why I got these results, so I will have plenty to talk about into the paper. I have started the rough draft since it is due on Tuesday. I was hoping to be able to focus on it Sunday, Monday and Tuesday, but work scheduled me for 5 days instead of my usual 4, but I’m not overly concerned since I started it and it’s a draft.

When graphing my training and validation loss, the validation loss is usually a flat, steady line. The training loss is a different line each iteration of the model. It is also not a falling curve line then straight line like what I believe you would want to see with neural networks. In addition, there is no convergence of the training and validation losses. My feeling is due to the fact of only having around ~1600 days with tornadoes out of ~12,000 total days. So, the model will most likely say no tornadoes due to having more knowledge on those types of days. In addition, I think the subsection of the US and the averaging of the variables may have a role in this. All of this I plan on describing in the Conclusion section of my paper.

I did my best trying to tune the hyperparameters manually, so I don’t know if I found the best ones, but I’m also not overly concerned given my thoughts above. In the future, if I continue this study, I might use Amazon Web Services SageMaker for automatic model tuning, or any other tools out there, I just know about AWS. However, for this project I wanted to do it manually for experience and to see the results of my changes.

I am using textbooks used in my COD meteorology courses as sources to explain meteorological terms. So, in addition to the previous sources used in my proposal, I’m adding with these sources. I did remove some of the information in my proposal to this final paper as I felt I still need them as examples of what has been done and why I feel machine learning can be used in meteorology. However, I felt I didn’t need to keep all the information before for the final paper. I thought it best to use them but focus more on my data, methodology, results and conclusions.

I have a section in my paper titled “Expected Limitations” of the model, tornado data, short time frame for the course, etc. As of right now I have 8 main labeled sections in my paper, so I am not short of content!

After Tuesday my focus will be on my presentation since it is the following next Monday. Victor has it marked in is calendar, so hopefully nothing comes up and he can attend it. I am going to have to do some testing with BlackBoard Collaborate before Monday to make sure my computer is all set up properly.

Basically, this week was just tuning my models and seeing if I could improve the losses and recall score (the recall score did improve, but losses weren’t great). I already have many ideas on how I could improve this study in the future. Overall, I’m happy with what I got done in these few weeks for the project.