CSE 450 – Case Study Performance Evaluation

Treat the questions in this evaluation like a professional document you would send to an executive team during a post-mortem. Write in complete sentences, using correct grammar and spelling.

1. During this module, what are two key ideas you learned during this case study related to machine learning and data analysis?

I learned about the errors in validation and training data. This led me to learn more about the early stopping feature that I ultimately recommended that we use in our model. Using this, we felt a bit more confident that our model was not overfitting even if our results were not what we wanted them to be.

Another thing that I learned was about learning rate. Learning Rate is a hyper parameter which tells the model how far to jump ahead on the line that represents the model's outputs. It searches for the global minimum of the error terms and uses that location to create an output.

2. Choose one of your answers to the previous question and write a one-paragraph summary of that concept or idea as if you were teaching it to someone else.

The learning rate is how quickly a model will find a solution. The learning rate tells the model how quickly to move through all possible solutions until it finds the best option. Picking the optimal learning rate can be the difference between a good solution and a great solution, for if a learning rate is too big or too small, you can skip out on the best solution.

3. If you had additional time to work on this case study, what is one thing that you would you do to take things further?

I would want to dig further into the holidays and the weather at those times. This really hurt us because the end of the year has major holidays during cold parts of the year, and this diminishes ridership. We over predicted ridership in late December and that was one of the major things I wished I could look more into.

**4. Aside from having to learn a new and/or difficult concept, what do you think was the biggest obstacle your team faced during this case study?**

It was finding a model that would return good results on the holdout set. We did well on training and testing, but when it came down to making predictions, we did poorly. We could not figure out how to better our results. Part of this could be attributed to not scaling the holdout data correctly, but I am not sure.

**5. What is the most insightful thing you learned from hearing about what the other teams did?**

When I talked to Jake, he reminded me more about leaky relu models and how they can deal with negative numbers while relu models cannot. I switched my model to leaky and it immediately improved my model.

6. What insights did you gather about learning in general from this module?

Neural networks while complex have a lot going on in the background that we do not truly know. This is why some people frown upon using it. However, I like the fact that it can learn from its mistakes and improve just like we can.

7. Could these insights apply to spiritual learning? If so, how?

Going off my previous point, the ability to make mistakes, learn from them, and improve because of them is a huge aspect of the Gospel. The Gospel is built on improvement and drawing closer to God, just like how a neural network draws closer to perfection.

**8. You should have received an email from the TEAMMATES web app for you to enter your personal and team evaluations for this module. (If not, you should email Brother Allred to fix this.) Before submitting this document, go complete the TEAMMATES online feedback survey. Did you complete the online TEAMMATES evaluation survey?**

**Yes**

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