(Brad) An Ni
Email Assignment
Task 1: General Questions

1. What is your preferred language when building predictive models and why?

Throughout my undergraduate degree, I have had the opportunity to create many different models using a wide variety of tools. These tools include programming languages such as R and Python, as well as software programs such as Stata. However, my experience with Stata mainly resided within my econometric courses. Although Stata and R may seem similar in terms of their layouts and user friendliness, Stata has a significantly smaller library and is limited in its abilities to create graphs compared to R. Due to its limited library, Stata is better suited for regressions and econometrics. On the other hand, both R and Python have significantly more libraries which allows for more tools and better plots when it comes to data analysis. Though the tools they both provide have similar capabilities, I would prefer using Python for Machine Learning applications due to the user friendliness of SKLearn. Furthermore, when it comes to a larger dataset, Python has better capabilities when it comes to dealing with massive amounts of data. Thus, Python is most likely my go to choice when it comes to data analytics.

2. Provide an example of when you used SQL to extract data.

One of my projects for my economics courses required us to create our own research topic as well as finding all the related data that is needed for research. For the topic, I decided to explore the relationship between the Price of Gold and indicators such as the US Treasury Yields. Since it was hard to find datasets online that met my requirements, I decided to use FRED's database to collect the necessary data for the project. With FRED's API, I was able to collect data that I needed using mySQL. Eventually, building the dataset that was needed for the project.

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3. Give an example of a situation where you disagreed upon an idea or solution design with

   a co-worker. How did you handle the case?

Within one of my machine learning courses in my final year, my group mates and I were asked to

create a model to predict the prices of commodities such as gold and oil, using features such as

sentiment scores, past news, and interest rates. Since we created the dataset on our own by

combining these time series data from different sources, our dataset contained a lot of NA values.

Due to this, my initial instinct was to attempt to fill in these NA values using the KNN imputer.

However, my groupmate thought that this would be a waste of time since we could just attempt

to fit the model using Gradient Boosting Machines, as LightGBM automatically handles missing

values. Although I agreed with him, at the time, we still hadn't learned about Gradient Boosting

Machines. Thus, I still wanted to fit the model using methods that we already knew. After a few

conversations among ourselves and learning about Gradient Boosting Machines on our own, we

came up with a compromise in which we fit the model using Boosted Trees, while one of my

other group mates and I would still attempt to fit the model using lecture materials on our own

time. This solution allowed our project to meet the requirements while also learning and sharing

the untaught Gradient Boosting Machine with the rest of our cohorts.

4. What are your greatest strengths and weaknesses and how will these affect your

   performance here?

I believe my greatest strength is my spirit to learn. I think that not only is continuous learning

helpful for academic achievements but also beneficial in the workplace. When encountering

problems I don't understand, choosing to learn is better than giving up. Therefore, I often use my

time off to learn things I haven't studied before. For example, when I encountered LightGBM in

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my previous answer, learning the new method allowed us to thrive in our project while also

sharing insight with others. My biggest weakness is probably my lack of experience. My

experience in professional fields is limited to practical work during classes and what I learned in

the classroom. Most of my work experience leans towards sales and communication with people.

Although I lack professional experience, I have gained some valuable insights from these work

experiences. For instance, while working part-time at a convenience store, I was able to learn to

interact with customs. Even in the Bubble Tea store, I was able to gain the skills of

communicating with my coworkers under stress during busy times.