MOCK interview Questions and Answers.

How did you validate your model?

Model validation was a crucial step in our project. We employed cross-validation techniques and split our dataset into training and testing subsets to assess model performance. Additionally, we used metrics such as Mean Absolute Error (MAE) and Root Mean Square Error (RMSE) to measure the accuracy of our traffic forecasting. Our federated approach allowed us to validate the model across multiple regions, ensuring its generalizability and robustness.

What were the most significant challenges in the data analysis phase?

The data analysis phase of our project presented several significant challenges. Firstly, dealing with the large and complex Metr-LA and PEMS-bay datasets required substantial computational resources and storage capacity. Preprocessing and cleaning the data to make it suitable for our machine learning models was a time-consuming task. Moreover, working with real-time data meant dealing with missing or incomplete information, which required data imputation techniques to maintain the integrity of the dataset.

What are the limitations of your current approach?

One of the limitations of our approach is the need for substantial computational resources to handle the dynamic nature of traffic data. Real-time updates and model adaptation can be resource intensive. Moreover, our federated learning approach relies on data sharing, which can be challenging in cases where privacy concerns or data access restrictions exist. Lastly, while we strive for high accuracy, there will always be some inherent uncertainty in traffic forecasting, especially in highly congested or unpredictable situations.

What impact could your project have in its domain?

Our project has the potential to revolutionize urban transportation. By using the Metr-LA and PEMS-bay datasets, we aim to provide cities with a tool that can significantly improve traffic forecasting accuracy. This, in turn, can lead to reduced congestion, shorter commute times, and more sustainable transportation solutions. Beyond traffic forecasting, our approach could also advance dynamic graph-based machine learning in various domains, offering insights and applications in fields beyond urban planning.