# Traffic Prediction Fifth Draft

Sure! Here’s a summary of what we’ve covered in your traffic volume prediction project:

### Project Overview

- \*\*Objective\*\*: Predict traffic volume based on dates.

- \*\*Model\*\*: LSTM or similar sequential model for time-series prediction.

### Key Steps Taken

1. \*\*Data Preparation\*\*:

- Split data into training, validation, and test sets (initially used 70% train, 20% validation, 10% test).

- Adjusted the train-validation-test split to 80-20 for improved results.

- Restructured the input data to handle different time steps (initially set to 7, then changed to 14 and 30).

2. \*\*Model Training\*\*:

- Implemented model training using Keras with 100 epochs.

- Evaluated model performance using RMSE and MAE metrics.

3. \*\*Baseline Model Comparison\*\*:

- Compared model performance with a baseline model, adjusting the splits affected the results.

4. \*\*Hyperparameter Tuning\*\*:

- Initially attempted to use Scikit-learn for hyperparameter tuning but encountered compatibility issues.

- Shifted to using Keras Tuner for tuning the model's hyperparameters.

5. \*\*Evaluation\*\*:

- Encountered issues with array dimensions when predicting validation data.

- Explored the implications of output dimensions (1 vs. 7 predictions).

6. \*\*Final Adjustments\*\*:

- Decided to work with 7 outputs for predictions based on the project's objectives.

- Adjusted the evaluation code to reshape predictions and true values to match dimensions for calculating RMSE and MAE.

### Current Status

- You are currently at the evaluation stage, working on calculating performance metrics (RMSE, MAE) for your tuned model.

### Next Steps

- If you're starting over in a new chat, you might want to provide:

- The main goal of the project.

- Any specific requirements or constraints you want to address.

- Any changes in data preparation, model architecture, or evaluation strategy.

Feel free to take this summary into your new chat, and I'll help you pick up from where we left off or address any new directions you want to explore!