SDAIA
الهيئة السعودية للبيانات والذكاء الاصطناعي
Saudi Data & AI Authority

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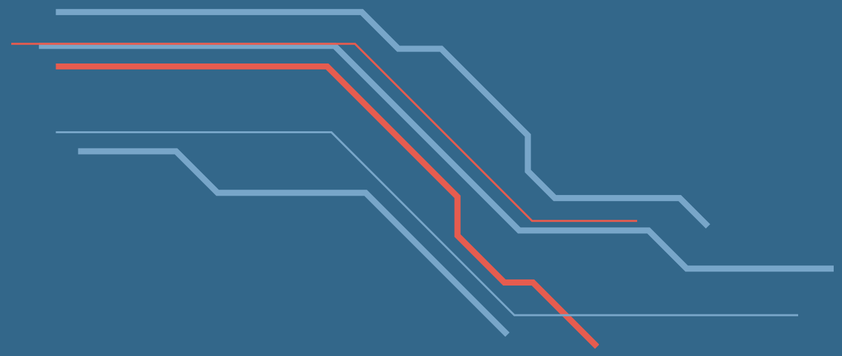
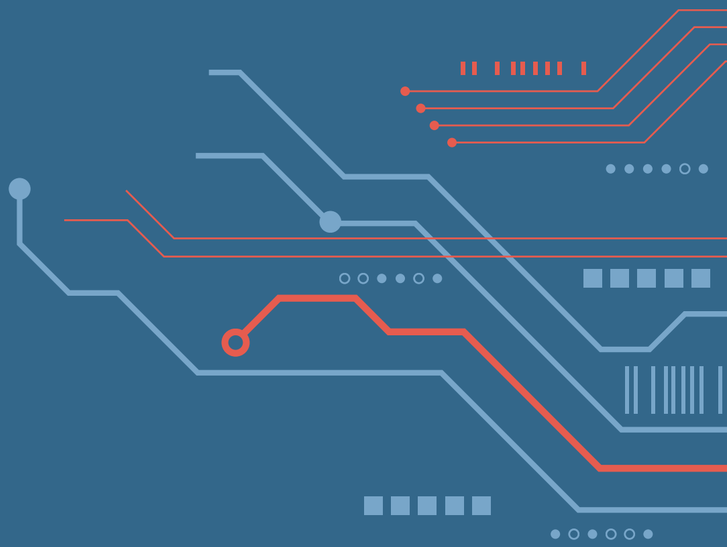
Traffic Flow Predction

Group B





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Introduction

The idea for the project is to create a deep learning model for predicting traffic jams on roads by utilizing the data that is currently available, such as the time of day, the quantity and kind of cars on the road, and the type of traffic. Based on the given data, the model will forecast the kind and timing of congestion.

Dataset

The data was collected from the Kaggle data source and we combined several data into the same file to complete the dataset

We created a time series prediction model using LSTM neural networks to predict the type and timing of congestion.

Column Name
Latitude :float
Longitude:float
Day of the week : object
CarCount : int
BikeCount : int
BusCount : int
TruckCount : int
Total : int
Traffic Situation : Object

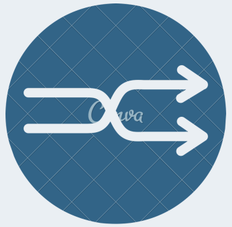
Methodology

Collecting Data

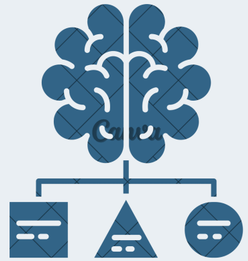
Cleaning Data

Visualization Data

Splitting Data



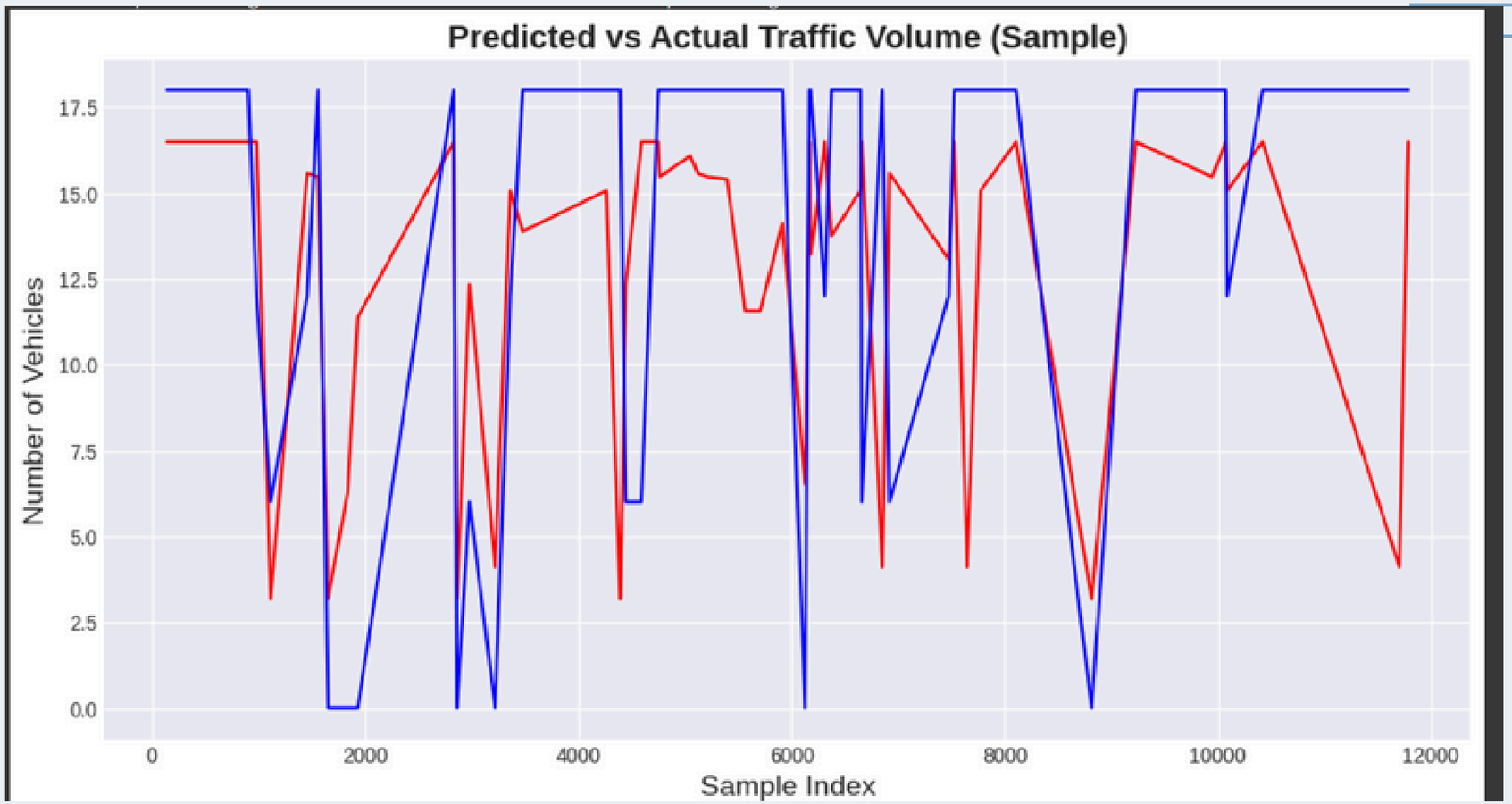
Applying Model on Data



Evaluating Model

Solutions Model

Results


Predicted vs Actual Traffic Volume (Sample)
Number of Vehicles
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
0
2000
4000
6000
8000
10000
12000
Sample Index

Conclusion

The traffic congestion prediction model based on predicting the type and timing of congestion using LSTM neural networks has shown the potential to help with:

- Smart traffic management
- Emergency management

Team Work

Dana Almistdadi

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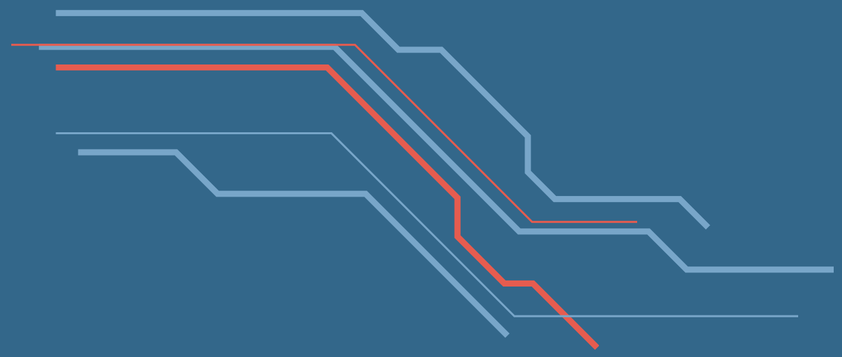
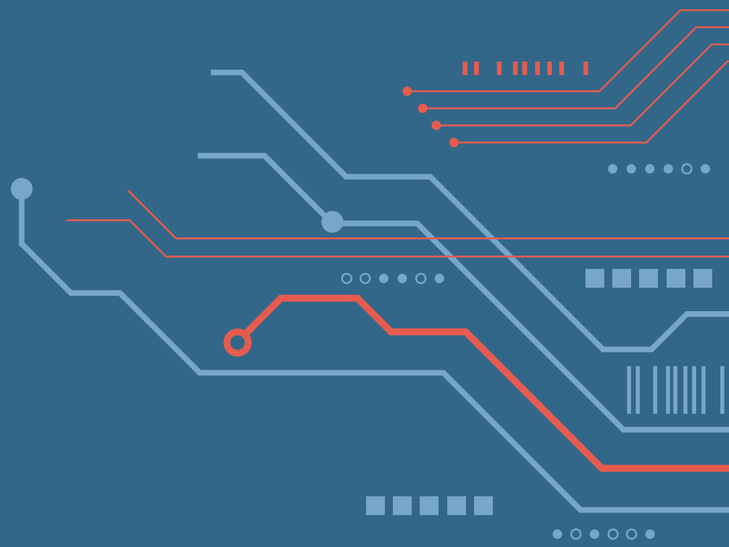
Retaj Alanzii





Thank You

Question’s?