



# **Traffic Volume Prediction | Time-Series Models**

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**01**

# **Data Gathering**

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# 01 Data Gathering(Interstate 94 Westbound Traffic Volume)



## Data Source

**UC Irvine**

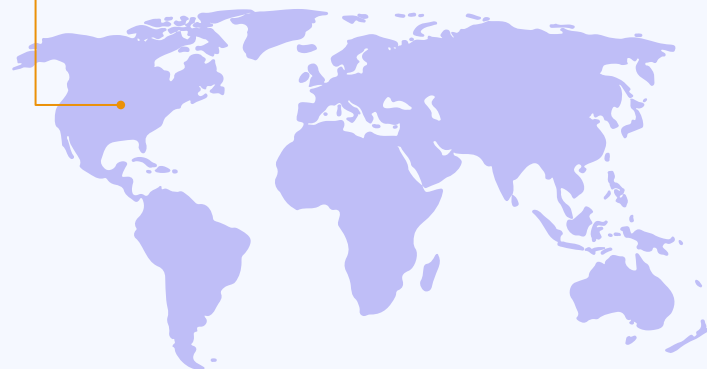
Machine Learning Repository

## USA

Midway  
between  
**Minneapolis**  
and **Saint Paul**

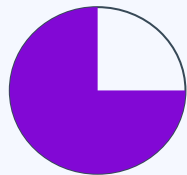


## Location



# 01 Data Gathering (Interstate 94 Westbound Traffic Volume)

**8 Features**



**48204 Instances**

Hourly weather features  
and holidays included for  
impacts on traffic volume



**02**

# **EDA & Data Preprocessing**

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# 02 EDA & Data Preprocessing

## Tools Used..

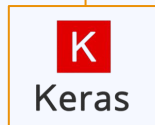
01



**Google Colab**

is a hosted Jupyter Notebook service

02



**Keras**

It's a gas giant and the biggest planet in the Solar System

03



**Tensorflow**

end-to-end open source machine learning platform

## 02 EDA & Data Preprocessing

### Null & Duplicates Values

Despite being red,  
Mars is **very cold**

### MinMaxScaler

It's the farthest  
planet from the Sun

### Seasonal decompose

Jupiter is the biggest  
planet of them all

### Label Encoder

It's a gas giant and  
has **several rings**

### Split Data

into 80% training and  
20% testing sets







**03**

# **Model Development & Training**

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# 03 Model Development & Training

RNN	LSTM	GRU
<ul style="list-style-type: none"><li>• Sequential</li><li>• optimizer (adam)</li><li>• RMSE</li></ul>	<ul style="list-style-type: none"><li>• Sequential</li><li>• optimizer (adam)</li><li>• RMSE</li></ul>	<ul style="list-style-type: none"><li>• Sequential</li><li>• optimizer (adam)</li><li>• RMSE</li></ul>

## Layers Architecture

7 Layers (  
128,  
dropout 0.2,  
128,  
dropout 0.2,  
75,  
dropout 0.2,  
1 Output  
)

# 03 Model Development & Training

Model	Epoch	Batch size	Loss
RNN	50	64	0.016
RNN	10	64	0.012
LSTM	50	64	0.008
LSTM	10	64	0.0002
GRU	50	64	0.103
GRU	10	64	0.012



# **Thank you for listening!**

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