



**LOGITRAFFIC**  
IOT BASED DEEP LEARNING POWERED  
TRAFFIC MANAGEMENT SOLUTION

# “Team Aztecs” TS1G4-4

Project Name: LogiTtraffic

IoT based Deep Learning Powered  
Traffic Management Solution

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# **Problem Statement:**

- 01** **Traffic Management :** Traffic management includes accident management, crime detection and mishap management. The management will optimize the traffic and will regulate traffic across the region in real time by using mathematical models.
  
- 02** **Theft Detection and Overspeeders Identification :** We aim at recovering stolen vehicles along with identification of the thief. Outlaws who commit crimes of overspeeding are also to be caught.

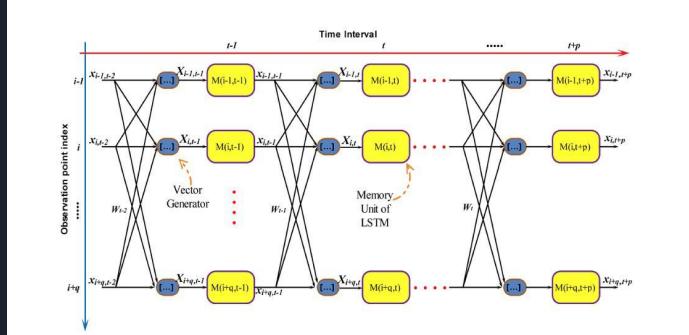


# Idea

- LogiTtraffic shall utilise the data generated by Surveillance Cameras and Internet of Vehicles to forecast short-term traffic densities and speeds and the same system shall prove instrumental in recovering stolen vehicles along with identifying the thief.
- The system shall have its further applications in identifying traffic law withholders and at the same time recognizing emergency vehicles for efficient traffic management.
- We further plan to extend this project as a Video Analytics based system which utilizes Deep Reinforcement Learning and other state-of-the-art approaches for traffic management in chaotic atmosphere.

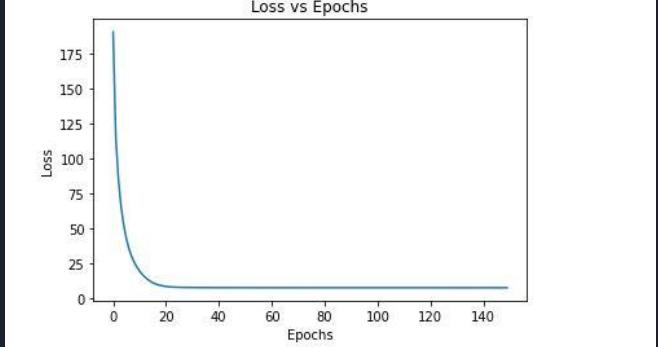
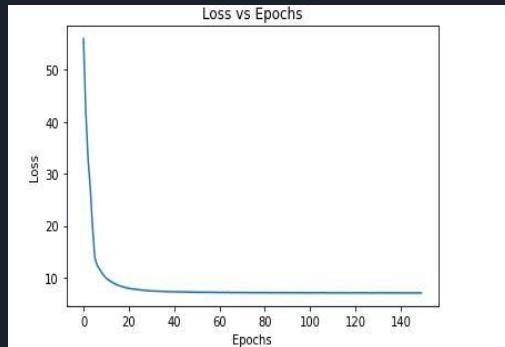
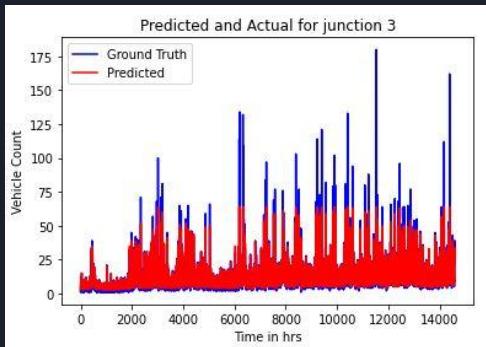
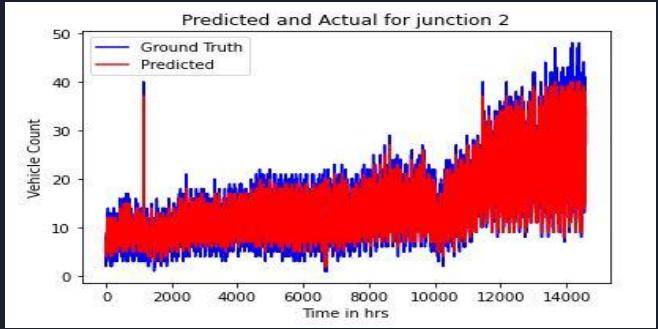
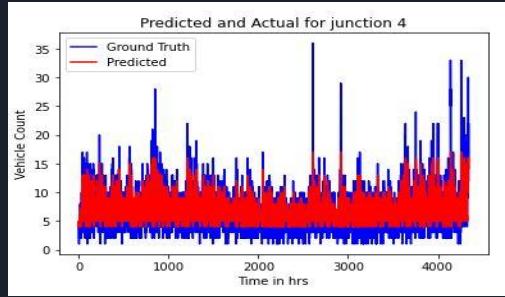
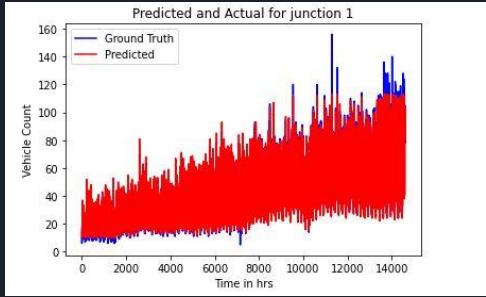
# Deep Learning Model for Traffic Density and Vehicle Count Prediction

Computer Vision Based :- We will be using deep learning algorithms to identify vehicle count in multiple traffic observation points. We shall be using CNNs over YOLO algorithm to achieve the same.



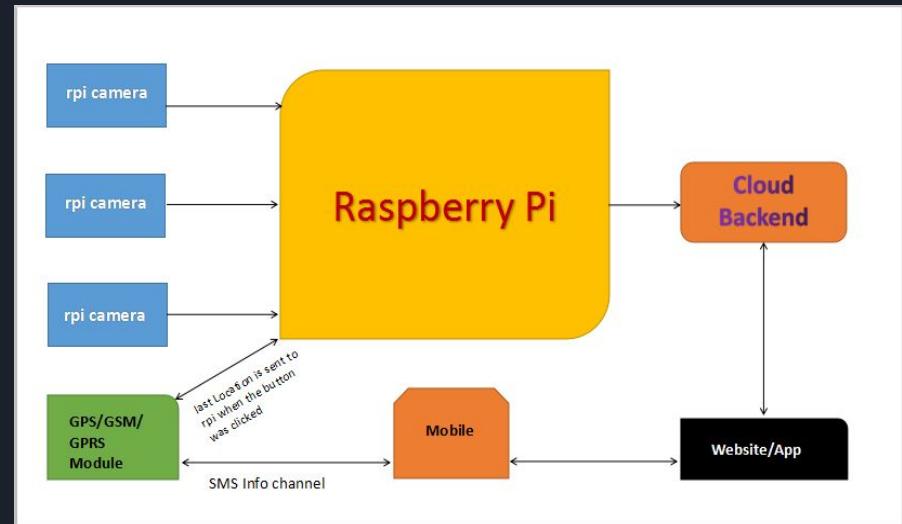
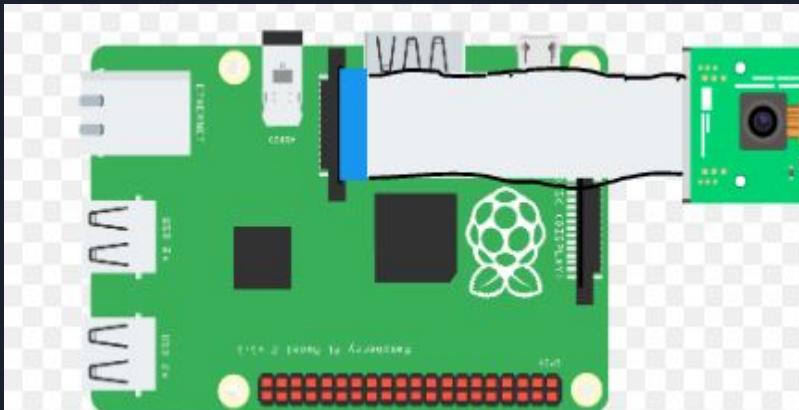
# Deep Learning Model

Click on the heading to view the code on google colab  
[Github](#)



# Circuit-Diagram for IoT

The main Circuit Diagram includes a Rpi 4 model B connected to Camera Serial Interface of Raspberry Pi, allowing us to capture image on user's request.

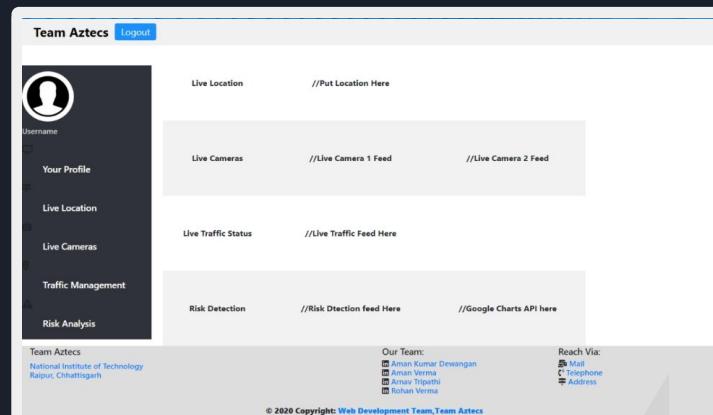


```
1 from google.cloud import storage
2 from firebase import firebase
3 import os
4 os.environ["GOOGLE_APPLICATION_CREDENTIALS"]=""
5 firebase = firebase.FirebaseApplication('<your firebase database path>')
6 client = storage.Client()
7 bucket = client.get_bucket('<your firebase storage path>')
8 # posting to firebase storage
9 imageBlob = bucket.blob("/")
10 # imagePath = [os.path.join(self.path,f) for f in os.listdir(self.path)]
11 imagePath = "<local_path>/image.png"
12 imageBlob = bucket.blob("<image_name>")
13 imageBlob.upload_from_filename(imagePath)
```

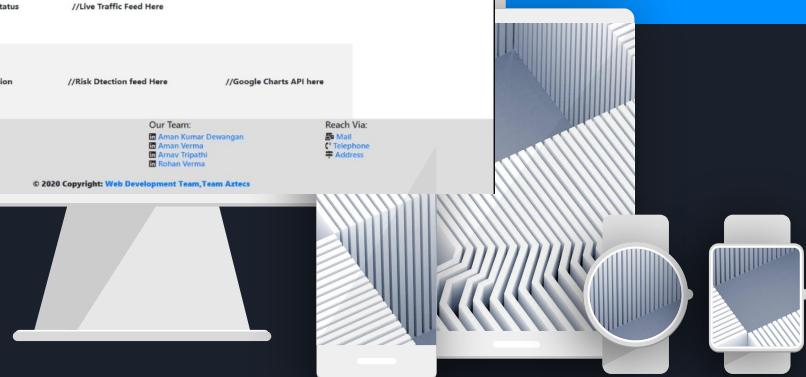
# Front-End

We aim to provide users with concise, efficient and interactive interface to move through tabs and pages.

## Dashboard



 **QUICK TIP**  
We will show user real-time data of GPS Location, Live Camera feed and Owner Profile along with Traffic Prediction on Dashboard





Username

Your Profile

Live Location

Live Cameras

Traffic Management

Risk Analysis

Live Location

//Put Location Here

Live Cameras

//Live Camera 1 Feed

//Live Camera 2 Feed

Live Traffic Status

//Live Traffic Feed Here

Risk Detection

//Risk Detection feed Here

//Google Charts API here

Team Aztecs

National Institute of Technology  
Raipur, Chhattisgarh

Our Team:

- [Aman Kumar Dewangan](#)
- [Aman Verma](#)
- [Arnav Tripathi](#)
- [Rohan Verma](#)

Reach Via:

- [Mail](#)
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B-Model

Thank You

