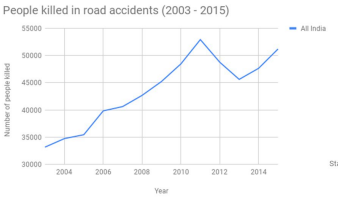
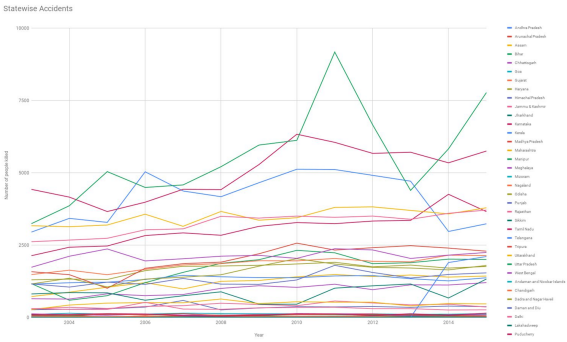
#OpenGovtDataHack

ogdhackbbsr-bbs039

Quick Fact Check



Centralized PWA based application to capture data (Geo-locations) of accidents on national and state highways (initial approach) and identification of spots and its changing patterns based on timely basis. The ultimate aim to trigger a request for an ambulance and the other related authorities as soon as possible, in order to save life and ensure smooth traffic flow. We aim to automate the entire process based on the data collected over the period on time and by using the current existing data sets. An ML based image recognition approach to identify accidents and trigger request.



How our Application Works

Whenever an accident is reported on any of the state or national highways the police is reported about the accident. They arrive at the scene and calls for an ambulance using our application. The application locates the nearest and the quickest possible ambulance that can be reach the spot. This functionality uses the data of hospitals provided by the Government. Based on the location of accident, the nearest hospital is identified by using the Google Maps API (Geo-location). Our algorithm decides on the data returned from the API which action is to be performed that is either call the stationed ambulance or the Hospital.

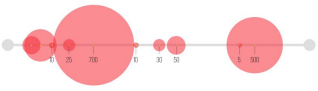
1. Accident Reported

2. Police is informed about the incident, Arrives at the spot request for an ambulance

3. Our code locates the nearest and quickest ambulance to spot. Store the data into the server.

4. Realtime updates on the applications

In the background



A precise scatter plot from the data collected through the app from the starting point to the end point of the highway in summer time.

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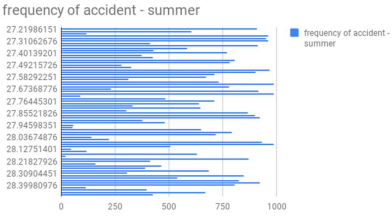
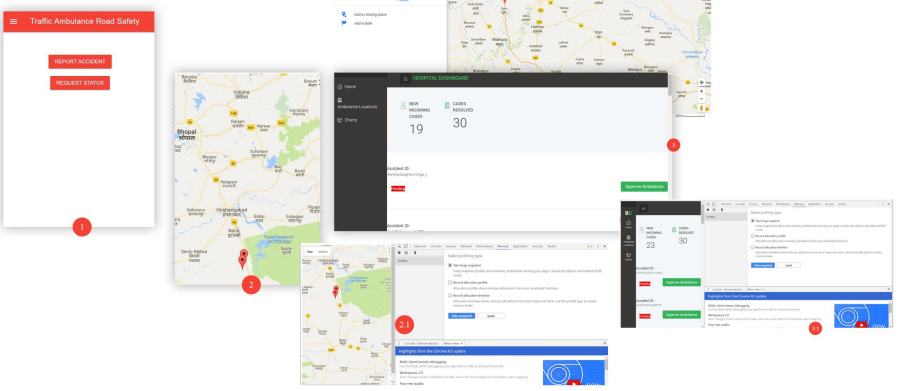
The data sent to our server is analysed and acts as a feed to the image processing and recognition, and also helps in locating accident hotspots by measuring the number of frequency of accidents at the given geo-location.
Also, we are including a timestamp to the data set, hence we can find the changing pattern in accident hotspots, and also other external factors can be identified. Like the change in hotspots due change in seasons.



We created a hypothetical data set containing the latitude and longitude of accident spots on the Yamuna Express Highway (as ideal highway/expressway with frequent accident). On analyzing the hot spot (using simple median technique) to find and average latitude and longitude for positioning the ambulance. The result obtained was **27.82798869,77.9041283**.



Future goals

Implementing realtime image processing/recognition (training a model) to identify accidents and trigger events accordingly. The inputs feed will be taken from cameras installed at accident hotspots previously identified by the data collected through our application. Hence reducing the event trigger time and making it fully automated.

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Automated Process

made during #OpenGovtDataHack BBSR

Team - 039

Members :
Alabhya Vaibhav
Amina Sultana
Soumyadeep Jena

Datasets Used:
https://data.gov.in/catalog/hospital-directory-national-health-portal
https://data.gov.in/catalog/stateut-wise-number-persons-killed-road-accidents-national-highways
https://data.gov.in/catalog/stateut-wise-number-persons-killed-road-accidents

External Resources :
Google Maps API, Study of Accidents on Yamuna Expressway's section joining Noida and Greater Noida,IJRASET