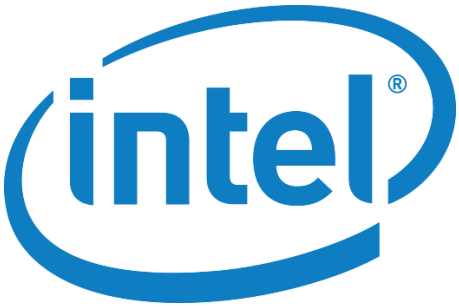
INTEL UNNATI INDUSTRIAL TRAINING

ACCIDENT LOCATIONS ON INDIAN ROADS



Internship Training
Final Report

TEAM NAME

- TEAM ALCHEMIST

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DATE

1/06/2023 – 15/07/203

MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

ABSTRACT

This report is written with purpose of narrating the project completed during the one-month period of the Intel Unnati Industrial Training program with Malla Reddy College of Engineering and Technology, Hyderabad, Telangana.
The program commenced on 1st June 2023 and ended on 15th July 2023.

The **Intel® Unnati Program** is focused on technology inclusion, and advancing students' skills in emerging technology.

The "ACCIDENT LOCATIONS ON INDIAN ROADS" project Aims to reduce the number of accidents occurring on Indian roads. We made predictions of number of accidents, type, reason etc. using Machine Learning classifiers.

We chose Tamil Nadu as our project main geographical area to work on.

The project ended in success period of one month, and results are shared through GitHub community.

INTRODUCTION/MOTIVATION

Road Accidents have always been an enormous misfortune that the human race could ever face. Some accidents lead to injury or permanent disability. Preventing them reduces the threat to humanity by a considerable percentage.

BACKGROUND WORK

Our team had put preserving amounts of efforts to classify the data and make predictions using Random Forest classifier (Machine Learning). We are prosperous with fruitful results and now we are looking ahead to make a Machine Learning model which reduces the accidents by following few measures.

DATA SOURCES

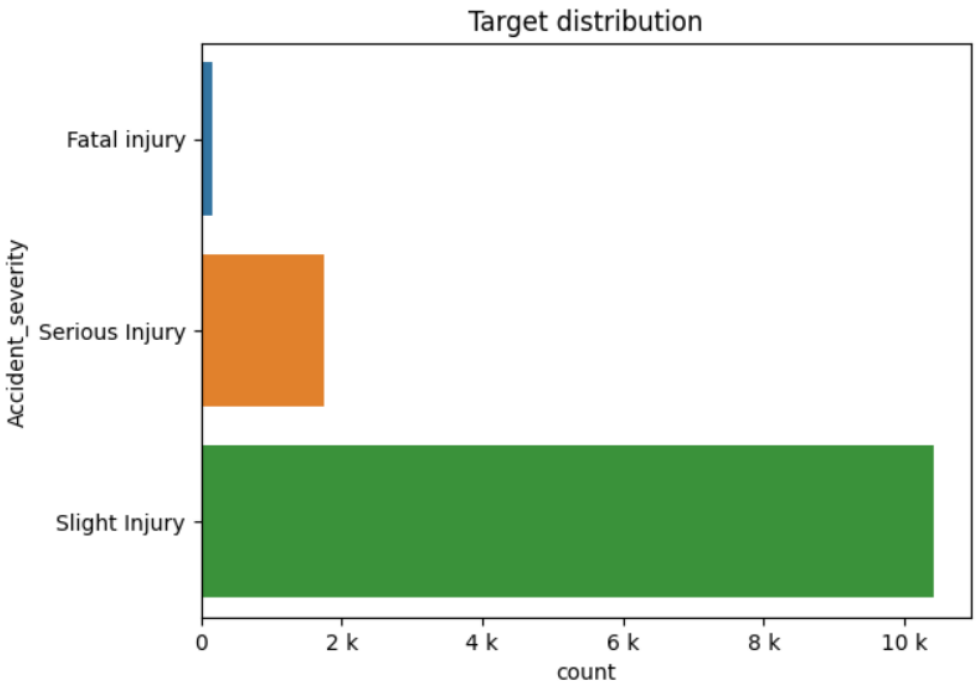
We used QGIS tools to map the blackspots in our chosen geographical area (i.e.; Tamil Nadu).
We used Google Colab platform for executing our code.
Random Forest classifier was used to examine the past accidents data and make predictions for future use.

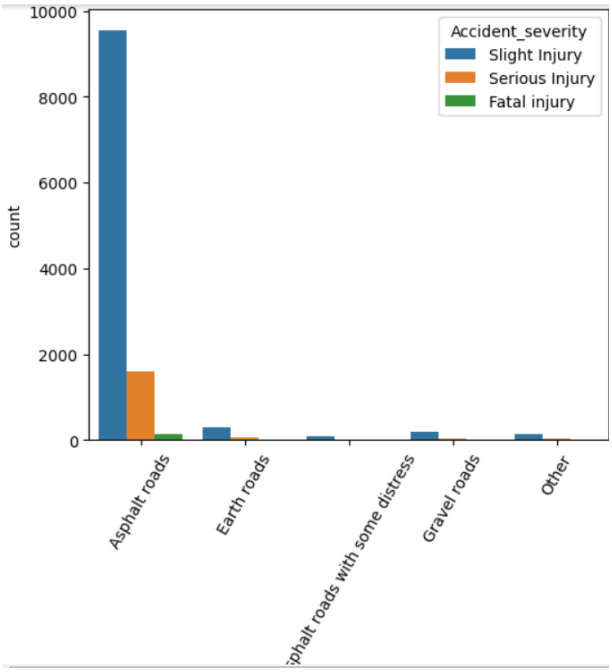
WORK

Blackspots in Tamil Nadu

	A	B	C	D
1	location	loc_lat	loc_lon	
2	Ariyalur	11.14165	79.07219	
3	Coimbator	11.00456	76.96163	
4	Cuddalore	11.75001	79.74999	
5	Kancheepu	12.83417	79.70364	
6	Thanjavur	10.79699	79.13783	
7	Tiruvallur	13.14444	79.89401	
8	Trichy	10.83015	78.62842	
9	Villupuram	11.94596	79.49741	
10	Salem	11.66433	78.14601	
11	Namakkal	11.22959	78.17116	
12	Madurai	9.939093	78.12172	
13	Virudhuna	9.583629	77.95833	
14	Ponnerikarai to White gate			
15	between 2	12.87326	79.6995	
16	Trichy Byp	10.70623	78.72768	
17	Mailam x r	12.15444	79.60647	
18	Arasur Jn t	11.83492	79.42799	
19	Omalr to D	11.86419	78.08071	
20	Senthamar	11.28134	78.23528	
21	Paranur bu	12.7384	79.98867	
22	Panapakka	12.92358	79.56278	
23	Siruvachur	11.18839	78.87048	
24				
25				

ANALYSIS





NEW INSIGHTS

Strengthening Road Infrastructure:

Focus on improving the quality of roads, particularly highways and major arterial roads, by ensuring proper design, maintenance, and signage. This includes implementing measures such as installing speed breakers, pedestrian crossings, traffic signals, and road barriers where necessary.

Encouraging Sustainable Transportation:

Promote alternative modes of transportation, including public transport, cycling, and walking. Enhance the infrastructure for these modes and incentivize their use, reducing the number of vehicles on the road and potential accident risks.

Strict Implementation of Helmet and Seat Belt Laws:

Enforce mandatory helmet usage for two-wheeler riders and seat belt usage for vehicle occupants. Implement regular checks and penalties for non-compliance.

Enhancing Emergency Response Systems:

Strengthen emergency response systems by improving coordination between hospitals, police, and ambulance services. Reduce response times and ensure timely medical assistance to accident victims.

Encouraging Research and Data Analysis:

Invest in research and data analysis to understand the causes and patterns of accidents in India. Identify accident-prone areas, driver behaviour trends, and vehicle-related factors to develop targeted interventions.

Advanced Driver Assistance Systems (ADAS):

ADAS technologies can assist drivers in avoiding collisions and maintaining safe driving practices. Features like lane departure warning, forward collision warning, and automatic emergency braking can alert drivers and intervene if necessary to prevent accidents. Encouraging the adoption of vehicles equipped with ADAS can greatly enhance road safety.

References: Google search engine

URL:

https://colab.research.google.com/drive/1c7SLUIdePU2hxLyg_t1IdZqlws6wAzQb?usp=sharing

MAP:

https://1drv.ms/u/s!Ar04_S90m-HZhT35PWbJ1XSVWkK2?e=ae6Rti