

TEQIP SUMMER INTERNSHIP REPORT

2019

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 - **Topic** – Traffic data collection and analysis
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 - **Faculty supervisor** – Dr. Digvijay S. Pawar
 - **Internship duration** – 1 month (1st -30th june
2019)
- **SUBJECT** :- Data collection and extraction



TRAFFIC DATA COLLECTION AND ANALYSIS

PROPOSED WORK

- Estimation of acceleration and deceleration events using circuit tools software.
- Detection of lane change by driver for estimating driver's behaviour.
- Graphical representation of lateral accelerations over the lane change maneuver
- Traffic data collection for private cars using v- box device with camera , GPS , mic etc.

Estimation of acceleration and deceleration events

- Detection of initial and final parameters (velocity, time and distance) manually using graph plotted between velocity and time.
- Detection is done for 10 different car drivers

	A	B	C	D	E	F	G	H
1	S.No.	Lane (1 or 2)	Initial speed 1	Distance1	Initial time step 1	Final speed	Distance Final	Final time step
2	1	1	19.2	57.5	83	13.4	68.8	85.4
3	2	1	24.4	152.7	104.7	15.2	175.3	108.5
4	3	1	32.8	224.9	116.4	20	264.9	121.9
5	4	1	40.4	428.3	140.4	32	505.7	148.2
6	5	2	55.7	936.3	186.3	16.8	1105.6	198.5
7	6	1	42.8	1777.9	264.1	26.4	1793.7	265.4
8	7	1	34.6	1896.9	276.9	24.3	1935.9	281.5
9	8	1	37.5	1999.9	288.7	16.5	2073.2	298.4
10	9	2	64.6	3247.8	381.6	58.7	3477.9	394.9
11	10	2	62.4	4053.2	428	53.4	4135.3	433.1
12	11	2	54.9	4183.5	436.3	44.9	4272.4	442.8
13	12	2	67.4	5128.9	494.4	25.2	5449.6	516.3
14	13	1	64.9	6238.3	567.9	48.7	6649.6	595.6
15	14	1	52.2	6874	611.7	47.2	6967.2	618.5
16	15	2	61.5	7172.6	631.9	51.7	7316.4	640.9
17	16	1	63.8	8095.3	689.6	54.4	8375.4	706.9
18	17	2	72.1	9492.6	767	0	9862	803.6
19	18	2	6.7	9865.9	807.7	0	9868.7	810.2
20	19	2	8.5	9961.9	929.4	2.5	9969.7	934.1
21	20	2	54.5	10236.6	962.3	41	10360.8	971.8
22	21	2	67.5	10876.4	1005.9	42.8	11070.6	1018.9
23	22	2	66.1	11724.5	1061.9	50.8	12000.9	1078.8

Figure 1 . showing lane , speed and distance.

Detection of lane change events

- Detected the lane change events by observing vehicle position.
- Also analysed the parameters such as velocity, lateral and longitudinal acceleration.

Presented velocity against cumulative time.

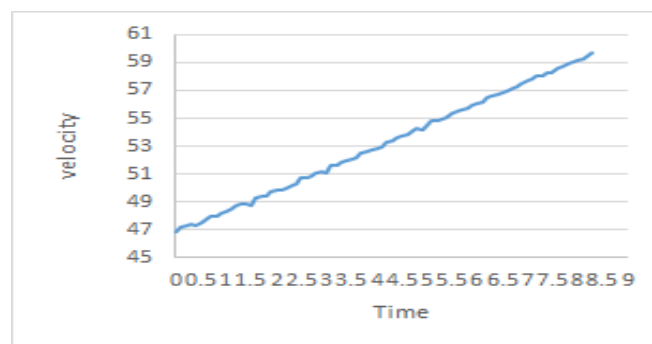


Figure 2 . Graph between velocity and time .

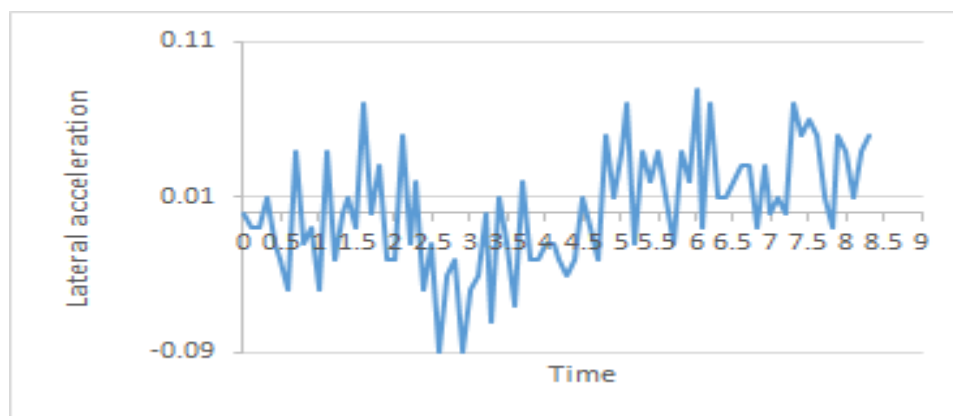


Figure 3 . Graph between lateral acceleration and time.

Graph based analysis

- Estimated the lane changing events in the groups of velocity (ranging from 40-50, 50-60, 60-70, 70-80 km/hr)
- Then, these events are plotted on
- graph between lateral acceleration and cumulative time.

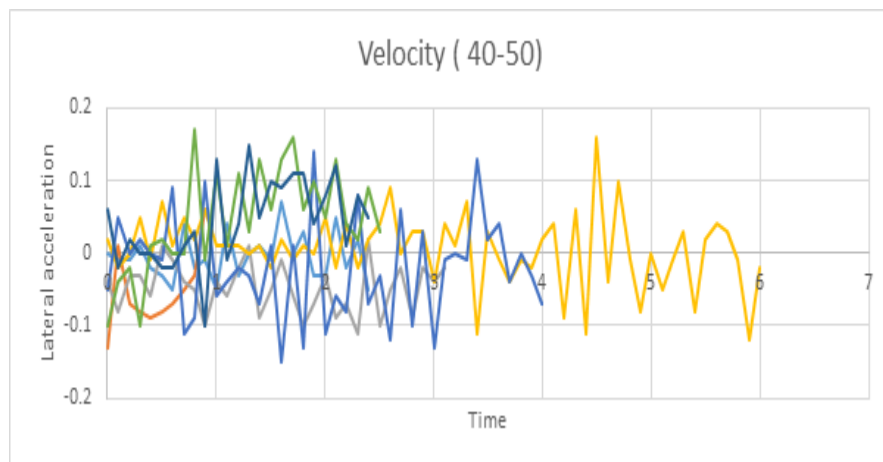


Figure 4 . Graph between lateral acceleration and time.

Other work done on collection and analysis –

- Data collection for cabs and taxi services using camera and VBox device.
- Clustering of lane change-data in R software for cars
- Comparison of lane change behaviour of cars and Heavy motor vehicles.

THANK YOU