

Low Level Design (LLD)

Road Lane Detection

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Document Version Control

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9th May 2020	1.1	First Draft	G Sai Krishna
9th May 2020	1.2	Added Workflow chart	G Sai Krishna
9th May 2020	1.3	Added Draft of steps	G Sai Krishna
9st May 2021	1.4	Corrected the mistakes	G Sai Krishna

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Abstract

With high increase in vehicles on the road, problem of traffic congestion and accidents has increased substantially. To overcome these problems, the in-depth analysis of causes such as number of traffic rules followed, is required. Therefore, continuous monitoring of traffic on highways and huge roads is mandatory. An Driving Assistant is needed to make the driver active and precise

This precision helps for making public safe

1 Introduction

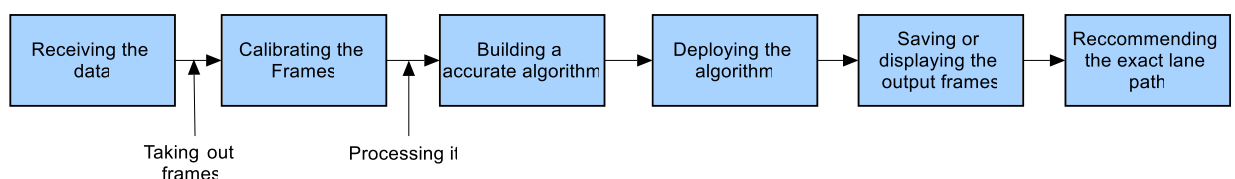
1.1 Why this Low-Level Design Document?

The purpose of this document is to present a detailed description of the Road lane detection System . It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system and will be proposed to the higher management for its approval.

The main objective of the project is for public safety

The moto of the project, such as:

1. To detect white markings in the lane.
2. Localization of the road and the determination of the relative position between vehicle and road
3. Lane detection system can be applied on both painted and unpainted roads as well as curved and straight road in different weather conditions.



1.2 Scope

This assistant can be applied real time. Where the driver can monitor the roads precisely and get the decisions from the assistant and act accordingly. This simply but the sensor system of autonomous self driving cars

1.3 Constraints

Some times it may be failed due to high traffic or due to camera calibration

1.4 Risks

We must be sure that the system is working fine and use human intelligence to understand the problem

1.5 Out of Scope

Delineate specific activities like traffic that are out of scope for the project.

2 Technical specifications

2.1 Dataset

I had to collect your dataset for this project from different sources or use this dataset and based on that, I had to design your solution

2.1.2 Input Format

The input format must be Videos or Images. The User has a freedom to set both of the inputs

2.2 Logging

We should be able to log every activity done by the user.

- The System identifies at what step logging required
- The System should be able to log each and every system flow.
- Developers can choose logging methods. You can choose database logging/

File logging as well.

- System should not be hung even after using so many loggings. Logging just because we can easily debug issues so logging is mandatory to do.

2.2.1 Predicting the lane

- User need to select the Input format
- Camera calibration and distortion
- Perspective transform and other computer vision techniques
- The system generates the output lane detected file and locate as the user needed

2.3 Database

At now , I had hosted all the project with the help of my PC. All the data required is stored with me and uploaded in github

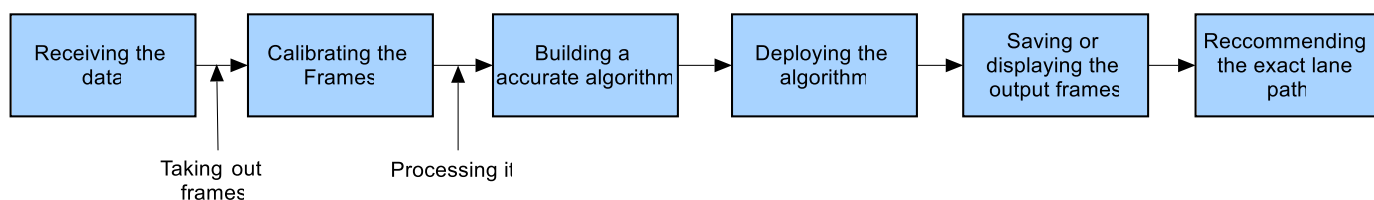
2.5 Deployment

I had taken my PC as hosting server

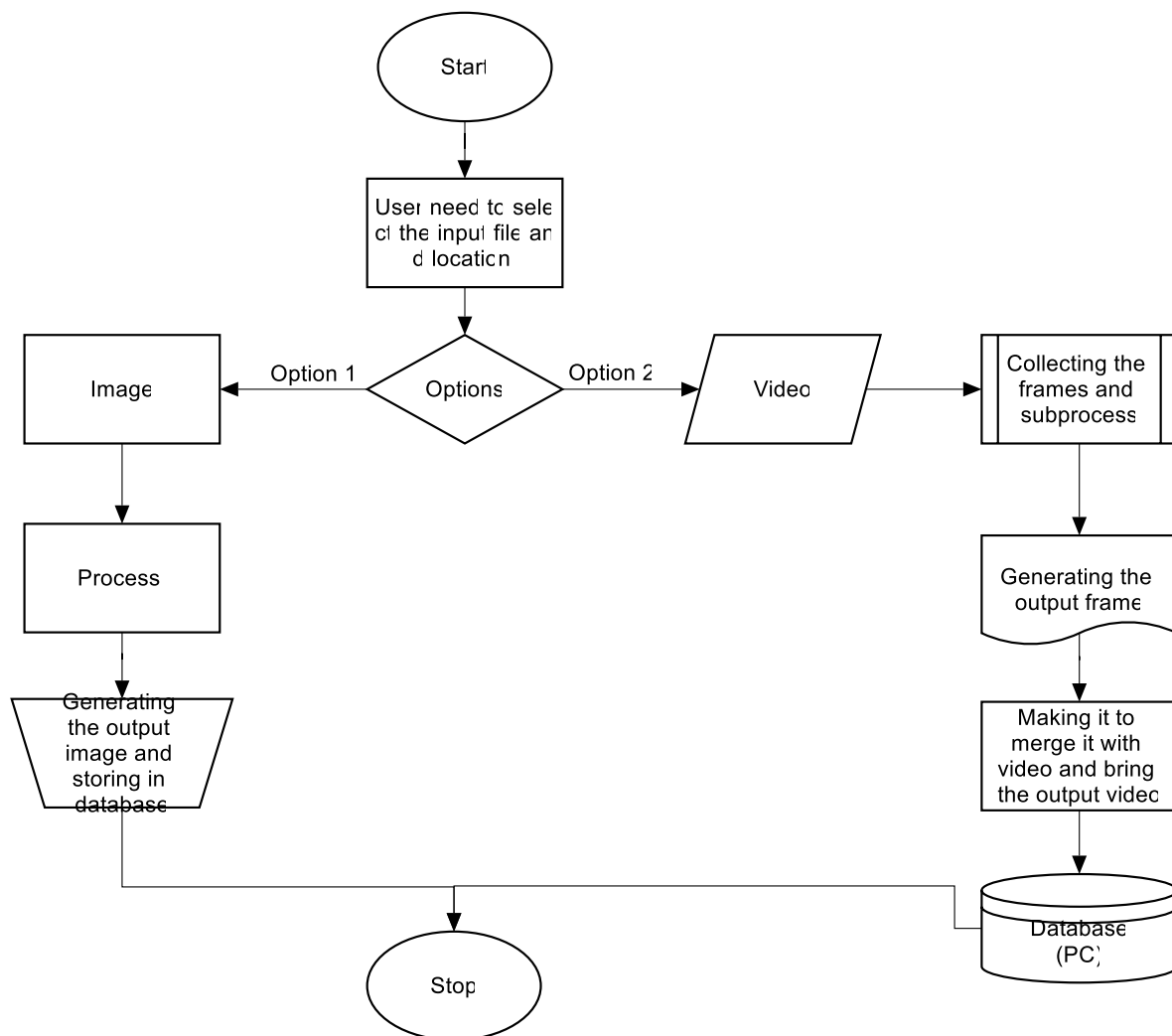
3. Technology stack

Front End	None
Backend	Python,opencv
Database	None
Deployment	None

3 Model training/validation workflow



4 User I/O workflow



Test cases

Test case	Name	Module	Pass/Fail
1	IMG_258	Video	PASS

