Road Lane Line Detection

Group No. 08

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Project Guide and Coguide
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Introduction

- As India is a progressing country, so is the infrastructure as well as the transportation like roads, technologies are also developing. The transportation solely contributes 5.5 percent of nation's GDP.

- According to a study conducted on road accidents in India, every hour 17 people dies due to road accidents and almost 25000s of people die due wrong lane driving, unnecessary lane cuttings or lane jumping every year.

Problem Identified:

- The increase in road accidents due to driver's error in lane detection.

Solution Purposed:

- To provide a assistance in observing the road from the visual point of view, which specifically is the detection of road lanes.

Objectives

- To provide a driving assistance to the drivers.

- To detect lane markings on the road by giving the video of the road as an input to the system.

- To detect the line and determine the approximate position and shape of the lane.

- To obtain a secure environment and improved traffic surroundings.

- To prevent collisions and generates an alarming conditions.

Technological Stack

Hardware

- Processor type: Intel Pentium 3/ Pentium 4

- Processor speed: 2.1Ghz or more

- Hardware: 5GB

- Memory: 1GB RAM

Software

- Operating System: Windows XP/2000/Vista or Linux

- Language use: Python

- Tools and Libraries: OpenCV

- IDE: Google Colab

- Algorithms:

    - Hough Transformation

    - Frame masking
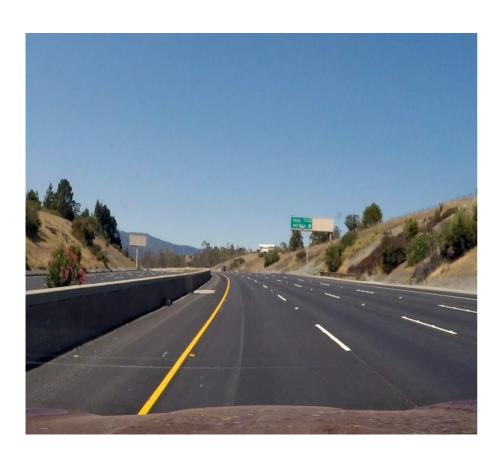
    - Gray-Scale conversion
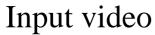
    - Edge Detection

Review Suggestions

- Use camera with better resolution

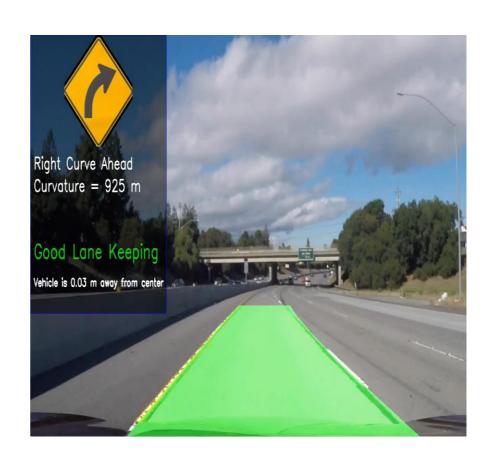- Take real-time video inputs instead of multiple frames.

Proposed System Architecture/Working

- The system take an real time video of the road through the camera mount on the front view mirror of the car.

- This video will be converted into frames and will undergo through Frame Masking, Gray Scale Conversion, Edge Detection and Hough transform, thus giving a sharp image without shadows and unnecessary edges.

- After going through the above processes the visual display will show the video output of the road with the lanes and other objects highlighted for better road visuals.

Prototype Design Demonstration

Input video

Output Video

Status of Paper Draft & Targeted Conference

- Paper completed

- **Targeted Conference**

  - 2nd International Conference on Ubiquitous Computing and Intelligent Information Systems.

    Paper Submission deadline: 2nd November, 2021

  - 5th International Conference on Intelligent Sustainable Systems (ICISS 2022)

    Paper submission deadline: 10th November, 2021

  - International Work-conference on the Interplay Between Natural and Artificial Computation (IWINAC 2022)

    Paper submission deadline: 28th February, 2022

Thank You...!!