LANE LINE DETECTION

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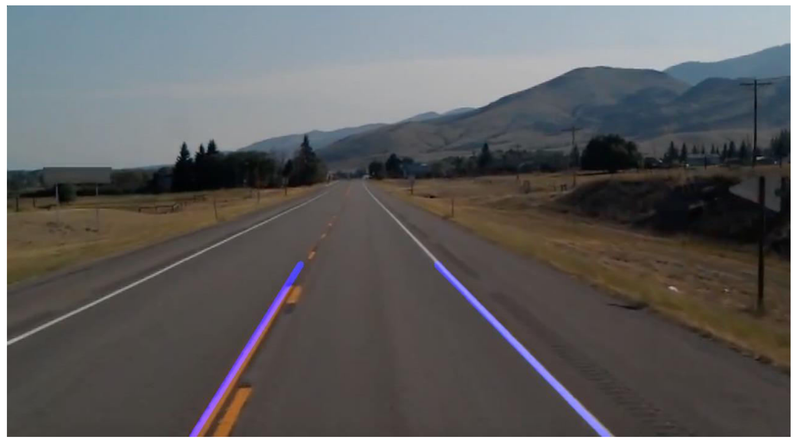
Main aim of our project is to make the model learn how to detect lanes on the road so that it properly follows the correct path and doesn't collide with other vehicles or get in another lane.

In the developing automated world with more innovation in technology, autonomous vehicles are the new field of interest. These autonomous vehicles use Deep Learning techniques and algorithms.



The main objectives of our project are:

- To identify lane lines on the road OpenCV is used
- NumPy array of image pixel values for frame masking
- To write desired code using Pythonx

- Grayscale conversion reasoning: A colour detection algorithm identifies pixels in a picture that matches a given colour or colour range. Grey scaling is the method of changing an image from different colour spaces e.g. RGB, CMYK, HSV, etc. to shades of grey.
- GaussianBlur or bilateralFilter or averaging reasoning: In gaussian Blur operation, the image is convolved with a mathematician filter rather than the box filter. The Gaussian filter could be a low-pass filter that removes the high-frequency elements.
- Canny or laplacian smoothening conversion reasoning: Canny Edge Detection is used to detect the edges in a picture. It accepts a grayscale image as input and it uses a multi-stage algorithm.
- In regionofinterest 'fillPoly' function usage reasoning: fillPoly() function of OpenCV is used to draw filled polygons like rectangle, triangle, pentagon over an image. This function takes inputs an image and endpoints of Polygon and color.
- The Hough Transform line is a method that is used in image processing to detect any shape if that shape can be represented in mathematical form.