**Lane Detection for Autonomous Vehicles using OpenCV Library**

**ABSTRACT**

For vehicles to be able to drive by themselves, they need to understand their surrounding world like human drivers, so they can navigate their way in streets, pause at stop signs and traffic lights, and avoid hitting obstacles such as other cars and pedestrians. Autonomous Driving Car is one of the most disruptive innovations in AI. they are continuously driving our society forward and creating new opportunities in the mobility sector. An autonomous car can go anywhere a traditional car can go and does everything that an experienced human driver does. But it’s very essential to train it properly. One of the many steps involved during the training of an autonomous driving car is lane detection, which is the preliminary step. Today, we are going to learn how to perform lane detection using videos. Based on the problems encountered in detecting objects by autonomous vehicles an effort has been made to demonstrate lane detection using OpenCV library. The reason and procedure for choosing grayscale instead of colour, detecting edges in an image, selecting region of interest, applying Hough Transform and choosing polar coordinates over Cartesian coordinates has been discussed.

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