Lane Detection – Overview, Present Situation, and Approach Method

The object of this report is to briefly introduce about Automotive’s Lane Detection (Overview), survey on how the system is applied in the industry (Present Situation) and offer an approach for Lane Detection Development (Approach Method).

Overview

Present Situation

Approach Method

The method will be using Convolutional Neural Networks (CNN) approach, which is divided in 4 steps:

1. Image Frame Collecting

Keyword: Region of Interests (ROI)

Objectives: Ignore the influence of background and improve image processing efficiency

1. Pre-Processing

Keyword: Road Segmentation, Semantic Segmentation

Objectives: Differentiate the road and other aspects (pedestrians, buildings, vehicles, animals, etc.)

1. Bird’s Eye View

Keyword: Inverse perspective mapping

1. Lane Marking Detection

Keyword: gradient image, gradients of lane markings

1. Curve Fitting/ Lane Tracking