Traffic Lane Detection in Urban Environments

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***Abstract*—We live in a time of rapid development of autonomous driving systems and the continuous deployment of the same systems in everyday life. This poses a large span of challenges, in order to make the systems reliable and robust in their deployment, much of this robustness relies on the information obtained through sensors from the environment. The pros and cons of different approaches for traffic lane detection will be discussed and the corresponding results compared, with an emphasis on the urban environment, where the challenge of detecting the lanes requires more consideration.**

I. Introduction

As mentioned in the abstract, lane traffic detection in urban environments poses an even greater challenge, there are many reasons for this. One of the main reasons is the cluttered environment, urban environments have many objects, obstacles on the streets which can contribute to the ambiguity of the sensor data. On the other hand, we have many streets in urban environments that don't have lane markings, which means that robust curb detection is also needed to detect the traffic lanes correctly. In chapter II are the lane marking methods discussed. In chapter III are the curb detection methods discussed.

A. Diverse Approaches

Diverse solutions for the lane detection problems exist since a long time ago, most of them based on 3D data analysis and pattern recognition. The challenge is to improve the robustness of the detection algorithms using additional context. Therefore, there are some approaches using vehicle tracking to determine the positions of the markings, like proposed in [1].

II. Lane Marker Detection

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III. Curb Detection

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IV. Conclusion

The conclusion goes here.

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