**A review and analysis of the Histogram of Oriented Gradient Technique for Pedestrian Detection in Autonomous Vehicle Systems**

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**Abstract**: In recent years, due to significant improvements of sensors, processors, and image processing techniques, major milestones have been made in the field of autonomous vehicles. As a result, the automotive industry and consumers have developed a deep interest in the substantial socioeconomic impact autonomous vehicles have. To realize full autonomous driving, the vehicle must have reliable object detection systems. Lidar, cameras, and other proximity sensors are used to make this possible. Much of the current research and development is being poured into improving the performance of object detection techniques such as Histogram of Oriented Gradients. Detecting each type of object presents unique challenges and requires unique solutions. Safety is the utmost concern when introducing autonomous systems. To provide an effective tool to understand the state of the field in its current form, this paper is devoted to the survey and analysis of the Histogram of Oriented Gradients technique for pedestrian detection.

**Introduction**

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