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Vehicle Classification System Using Viola Jones and Multi-Lyer Perceptron

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Abstract

The automatic vehicle classification system has emerged as an important field of study in image processing and machine vision technologies' implementation because of its variety of applications. Despite many alternative solutions for the classification issue, the vision-based approaches remain the dominant solutions due to their ability to provide a larger number of parameters than other approaches. To date, several approaches with various methods have been implemented to classify vehicles. The fully automatic classification systems constitute a huge barrier for unmanned applications and advanced technologies. This project presents software for a vision-based vehicle classifier using multiple Viola-Jones detectors, moment invariants features, and a multi-layer perceptron neural network to distinguish between different classes. The results obtained in this project show the software's ability to detect and locate vehicles perfectly in real time via live camera input.

Keywords

Author Keywords: [Automatic vehicle classification](#); [viola Jones detection](#); [moment invariants](#); [neural network](#)

KeyWords Plus: [MOMENT INVARIANTS](#); [RECOGNITION](#)

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