Title: Integrated Vehicle Classification System

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Abstract: This paper presents an integrated system for vehicle classification. This system aims to classify vehicles using different approaches: 1) based on the height of the first axle and the number of axles; 2) based on volumetric measurements and; 3) based on features extracted from the captured image of the vehicle. The system uses a laser sensor for measurements and a set of image analysis algorithms to compute some visual features. By combining different classification methods, it is shown that the system improves its accuracy and robustness, enabling its usage in more difficult environments satisfying the proposed requirements established by the Portuguese motorway contractor BRISA.

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