Abstract

The problem of vehicle classification has been addressed in this correspondence. Vehicle classification is a difficult task due to near similarity among various types of vehicle features. Spectral properties of the image and near similarity between the front side of different vehicles makes the generalization process even more difficult. Here a multiple kernel based k-nearest neighbor classifier has been designed to improve the classification accuracy. After extracting the frames from the traffic video, vehicles are detected using background subtraction method. Then a wavelet and interest point based feature extraction step is carried out for each detected vehicle. Final classification is carried out using the newly proposed multiple kernel based k-nearest neighbor (KNN) algorithm. Experiments on several real-time data-sets establish the higher accuracy of the proposed method in comparison to three well-known state-of-the-art classification techniques.

References

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Multiple Kernel based KNN Classifiers for Vehicle Classification

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Index Terms

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Classification  Machine Learning  Kernel  MKL