

عنوان مقاله:

Pedestrian Detection using Principal Components Analysis of Gradient Distribution

محل انتشار:

هشتمین کنفرانس ماشین بینایی و پردازش تصویر ایران (سال: 1392)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

In this paper we proposed a new method for pedestrian detection in images and videos. Our method uses a sliding window to search through images. In order to extract the features, each window is divided into overlapping cells and features are extracted from them. The feature that we extracted to describe each window is based on analysis of gradient distribution of each cell. After gradient distribution of a cell is computed, the PCA is applied on it and using a mathematical expression that gauges the attitude of edges we got the feature of the cell. Putting the features of the cells next to each other forms the feature vector of the window. Then, the extracted features are classified using Support Vector Machine (SVM). Finally, the learned SVM model is tested on the INRIA pedestrian dataset. The proposed method was compared with Histograms of Oriented Gradient (HOG) approach and the results show that our method has comparable detection accuracy as well as having more robustness when facing with noise.

کلمات کلیدی:

Pedestrian Detection; Gradient Distribution Histogram of Oriented Gradients; Principal Component Analysis

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