Abstract

Detecting human efficiently is an important field of research and has many applications such as intelligent vehicle, robotics and video surveillance. Histogram of Oriented Gradient (HOG) is one of the eminent algorithms for human shape detection. HOG features are extracted from all location of a dense grid on an image region and use linear Support Vector Machine (SVM) to classify the combined features. Although HOG gives an accurate description of the contour of human body, it requires a large computational time. We studied the fundamental idea and consider features that have high percentage to contain edge. In this proposed method we used difference of Gaussian to obtain the edge percentage of each feature. Then a threshold is used to remove features with low edge percentage. Selected features then classified using linear SVM. Experiments on INRIA dataset demonstrate that the proposed method not only reduce the dimension of the HOG features but also outperforms.
12. .

**Index Terms**

Computer Science  
Image Processing

**Keywords**

Significant, HOG, Feature Selection, Human Detection.