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Abstract
The content-base image retrieval and classification has obtained more attention for the recent application. The most commonly used methods are applying low level image features or keywords to classify the image contents. However, these methods are not very accurate. In this thesis, we try to utilize the additional information of digital pictures to raise the classificatoin accuracy. The EXIF information such as Flash Fired, Focal Length and Exposure Time, are the embedded information to record the image information during the picture capture moment. With the additional EXIF information and the low level image features, we can easily classify the pictures from the indoor and outdoor scenes. The back propagation neural network here plays a classifier to recognize the indoor and outdoor scenes.
We will proceed the building/landscape classification from the outdoor scene pictures. The most signification feature of a building picture is the amount of the vertical and horizontal edges. First, we use canny edge operator to detect the edges of the picture. Then we calculate the angle of edge and form a edge histogram. The experiment shows the edge histogram of a building picture is bi-modal, i.e. the distribution shape looks like a “W”. The experimental results shows the proposed methods can efficiently classify the digital pictures from the indoor/outdoor and building/landscape scenes.
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