Homework 5

1 Bag of words

1.1 Local feature extraction

There is nothing special with this part. I create a regular grid with the given parameters. I compute the direction and magnitude of gradient using opencv. Then I fill the histogram and at the end I concatenate the histograms.

1.2 Codebook construction

In the function I compute the local features. Then I compute the descriptor for the function. At the end the function run the k mean algorithm to find interesting features.

1.3 Bag of words vector encoding

This function takes as input an image. Find local features and compute the histogram. Then the histograms are converted into a set of features.

1.4 Bag of words vector encoding

Using the set of features we can create the NN algorithm. The accuracy is about 73/100 with my model.

2 VGG

2.1 VGG network

I implement the architecture given tab 3.1. There is nothing special with this function.

2.2 Training Testing

The training process was very fast with my gpu. The accuracy is about 82/100. I took a screenshot of the tensorboard. It is available in the run/39165 folder.

You asked a short report. I tried to make is as small as possible. If you have any questions please send me an email and I can answer.