COMP3204 Computer Vision

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Scene Recognition

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# Classifier 1

Classifier 1 is a simple TinyImage based classifier. To train the classifier, a TinyImage feature extractor is created, with a Tiny Image size of 16x16. Each image is then resized down to this 16x16 square, and this smaller version image is extracted as the feature for this image.

It is much quicker to compare the pixel values of these 16x16 images to classify them than to compare the whole full size image.

One all these features are created, they are used to construct a k-nearest neighbour search, which will take in an image, and then give the Euclidean distances from the given image vector to all the image vectors used to create the knn search.

To classify an image, we pass it into this knn search, and get the closest neighbour to it calculated by the search method. As we already know the class of every image within the search, we can predict the target image’s class to be the same as its nearest neighbour’s class.

This is a very simple classifier, which gives it very quick run time over under 15 seconds (classification is multithreaded), but this does result in a rather low prediction accuracy, averaging around 28% correct guesses. This is with a training set of 1200 and a validation set of 225.

# Classifier 2

# Classifier 3

# Contribution