10601 Machine Learning Final Project Milestone 1

Team Name

Amazombies

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For the classifier one, we ran Kernel Multinomial Logistic Regression based on given matlab code on the full training dataset adding edge feature and color histogram feature with 32/64/128/256 buckets, using c = 0.1 and gamma = 0.01 (known according to 10-fold cross validation). Training took 84.255 seconds on my personal laptop (2012 Macbook Air with 1.8GHz Intel Core i5 and 8G Ram) and achieved accuracy of 45.410%.

For the second classifier, we ran the neural network learner from Weka 3.7: official class weka.classifiers.functions.MultilayerPerceptron and an unofficial class weka.classifiers.functions.NeuralNetwork (https://github.com/amten/NeuralNetwork) on the full training dataset. For weka.classifiers.functions.MultilayerPerceptron, the configuration leads to best accuracy in out test is as follow: -L 0.3 -M 0.2 -N 500 -V 0 -S 0 -E 10 -H o (-L for learningRate, -M for momentum, -N for trainingTime). The training took less than 15 minutes and obtained an accuracy of 32.419 %. For weka.classifiers.functions.NeuralNetwork, the configuration leads to best accuracy in our test is as follow: -lr 0.0 -wp 0.001 -mi 1000 -bs 0 -th 0 -hl 400,40 -di 0.15 -dh 0.3 -iw 0 (-hl means we used 2 layers network with 400 nodes and 40 nodes, -wp is weightPenalty, -di is inputLayerDropoutRate, -dh is hiddenLayersDropoutRate). The training took less than 17 minutes and obtained an accuracy of 43.676 %. The test environment is MacBook pro with 8 GB 1600 MHz memory and 2.6 GHz Intel Core i5.