Term Project – Social Gesture Classification

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Submission – 0

Description:

The training and test data are downloaded from the provided URL and split training set into train and validation randomly in 75-25 proportion. First three submission on kaggle are predicted using different features with rbf kernel in libsvm and the last submission is predicted using a neural network in MATLAB.

The features that are used are

1. Zero padded the 3-dimensional training data to match the size of the largest data point in both train and test dataset. The zero padded matrix is then flatten into a vector and passed to svmtrain.
2. For the submission 3, descriptive statistics of the 3-d data is used. Mean, Standard Deviation and Correlation between each pair of axis are used to create the feature vector of length 9 and trained an svm with RBF kernel which gave much accuracy than any other method that I tried.
3. With the same statistical features trained a neural network using the matlab nnstart GUI with 200 hidden units. This method gave inferior result than SVM model with the same feature.

Next Step:

Since this is a time-series data, I plan to train a recurrent neural network with the use of Caffe deep learning framework. Before going to RNN, I plan to concentrate more on feature construction for SVM, which I hope will improve my current accuracy rate of 89.5%.