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Assignment #2: Facial Expression Classification

Exp#1: Train and test multi-class linear and non-linear SVM (rbf and poly) for facial expression classification using the above dataset. Accuracy

After reading the file (fer2013.csv), I prepared the data to be trained as follow:

- 1- Split the data into train and test sets.
- 2- Convert them from string to float and then reshape the size of the array.
- 3- Use a portion of the data to train.
- 4- Apply PCA with 25 components and then 'rbf' classifier.
The accuracy: 0.24853719699080523
- 5- Using linear SVC without PCA, the accuracy: 0.23822791864028978, so it is performs better with PCA.
- 6- Using non linear classifier 'poly', the accuracy: 0.24853719699080523

Exp#2: Use ensemble classification tools such as Bagging and Boosting to enhance the performance of the system. Accuracy

- 1- After applying bagging with one value, the accuracy: 0.24324324324324326
- 2- Applying boosting with different values, the accuracy: 0.24937308442463083
0.24937308442463083
0.24937308442463083
0.24937308442463083

the accuracy does not have a big change.

- 3- Applying bagging with different values and SVC base estimator, the accuracy:
0.23739203120646418
0.24212872666480914
0.24324324324324326
0.24212872666480914