

Finding Fake Currency Notes

In this project an Artificial Neural Network and a SVM classifier were used to separate fake currency notes from genuine ones.

Parameters :

- 1.Variance of Wavelet Transformed Image(continuous)
- 2.Skewness of Wavelet Transformed Image(continuous)
- 3.Curtosis of Wavelet Transformed Image(continuous)
- 4.Entropy of Image(continuous)

Description of Software / Packages used :

Artificial Neural Network : For implementing the ANN some helper functions from Andrew Ng's course has been used.The number of hidden layers is only one.

SVM classifier : The library LIBSVM was used to classify given data into fake and real currency notes.A RBF kernel was used which classifies data better than a linear kernel.The SVM classifier was far quicker than the ANN because it was written in C and ANN's are naturally more computationally expensive.

Setting up LIBSVM

Instructions are for Linux based systems :

After downloading and unpacking the required zipped file(<https://www.csie.ntu.edu.tw/~cjlin/libsvm/>) , open terminal and change directory to the unzipped folder's matlab directory.Type in – make clean and then – make .

For using the required functions in Octave code , one can either write addpath(matlab directory of libsvm) before calling LIBSVM functions or simply copy all files from the matlab directory into the same folder containing the Octave file.

Results

Results for one set of five trials is included in the text file(results.txt).