Results

Enhancement results:



1. Original Fingerprint



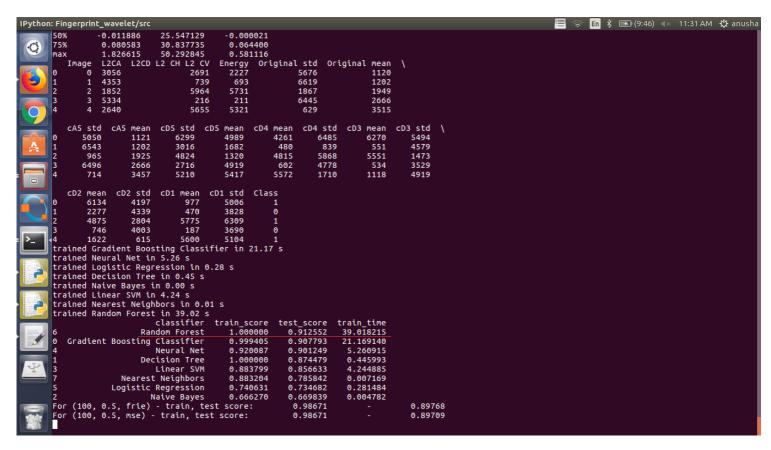
2. Fingerprint ridge skeleton



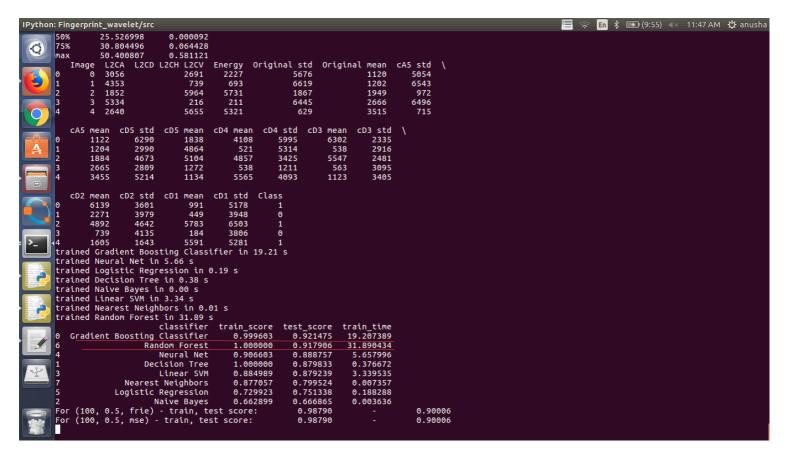
3. Extracted skeleton on original fingerprint.

Classification Results

Training with Daubauchie wavelet



Training with symlet



Training with coiflet wavelet

```
IPython: Fingerprint_wavelet/src
1
        420
                 3865
                           0
2
       5781
                 6370
                            1
3
        192
                 3725
                           0
                 5159
4
       5618
trained Gradient Boosting Classifier in 21.68 s
trained Neural Net in 5.04 s
trained Logistic Regression in 0.25 s
trained Decision Tree in 0.41 s
trained Naive Bayes in 0.00 s
trained Linear SVM in 3.58 s
trained Nearest Neighbors in 0.01 s
trained Random Forest in 37.87 s
                      classifier
                                   train_score
                                                 test score
                                                              train_time
6
                   Random Forest
                                      1.000000
                                                   0.912500
                                                               37.869029
0
   Gradient Boosting Classifier
                                      0.999802
                                                   0.908333
                                                               21.680692
4
                      Neural Net
                                      0.913889
                                                   0.877976
                                                                5.038021
1
                   Decision Tree
                                      1.000000
                                                   0.866667
                                                                0.406068
3
                                                   0.861310
                                                                3.576644
                      Linear SVM
                                      0.889286
7
               Nearest Neighbors
                                      0.874206
                                                   0.793452
                                                                0.008981
5
                                                   0.747024
            Logistic Regression
                                      0.739881
                                                                0.252956
2
                     Naive Bayes
                                      0.668254
                                                   0.662500
                                                                0.004302
                                                    0.98829
                                                                              0.89762
For (100, 0.5, frie) - train, test score:
For
   (100, 0.5, mse) - train, test score:
                                                    0.98829
                                                                              0.89643
```