Comparison with the Original Algorithm

We test 41 datasets from UCR time series archive and 2 new time series datasets collected at the Mind Research Network at University of New Mexico on original algorithm; however, we abandoned the experiments (14 data sets) in which the original algorithm [1] had not finished after 18 hours. Figure A (a) shows the comparison between our algorithm and the original algorithm, Figure A (b) shows the comparison between our algorithm with voting and the original algorithm, Figure A (c) Comparison of the running time between our algorithm and the original algorithm.

Fetal Electrocardiogram

A non-invasive fetal electrocardiogram (FECG) dataset has been collected from Physionet.org [2]. It contains a series of 3 multichannel abdominal FECG recordings, taken from a single subject between 21 to 40 weeks of pregnancy. The records have variable durations, and were taken weekly. The training set contains a balanced (45/44/46) mix of 135 time series of three abdominal channels. The testing set also contains a balanced (42/50/42) mix of 134 time series. The length of each time series is 750.

The accuracy of both FastShapelet and our algorithm for FECG data set is 100%. However for the same data set, we sped up 4.62 times the overall computation time which outperforms the FastShapelet algorithm. The First shapelet classified the sensor-1 and the second shapelet classified the sensor-3. They are shown in green in Figure 8b. Also voting technique achieved 100% accuracy.
References:
