**Description of algorithm:**

The data set has originally 118 EEG channels. We assumed that some of them were either redundant one another or irrelevant to the classification task. Therefore, we reduced the dimensions of this dataset directly in terms of original variables (channels) to improve the classification performance.

To identify those significant channels out of 118, we first applied our own feature subset selection (FSS) method proposed in [1] for each of datasets collected from 5 different subjects. Please refer to the table in the below for the details such as the FSS method used, the number of channels selected, and the average classification accuracy achieved with the selected channels only after 10 iterations of 10-fold cross validations.

| Subject | FSS Method | # Channels Selected | CV Classification Accuracy |
|---|---|---|---|
| aa | CLeVer_Rank | 28 | 61.9% |
| al | CLever_Hybrid | 51 | 71.1% |
| av | CLeVer_Rank | 28 | 71.6% |
| aw | CLeVer_Rank | 33 | 77.5% |
| ay | CLeVer_Rank | 12 | 80.7% |

Then, each of EEG signals was transformed into a vector using the upper triangle of its correlation coefficient matrix, where only the selected channels were used and then fed into linear SVM classifier. That is, the *vectorized* EEG signals with the selected channels only were used for both the training and test dataset to train the linear SVM classifier and predict the labels of test data, respectively.

[1] Hyunjin Yoon, Kiyoung Yang, Cyrus Shahabi, Feature Subset Selection and Feature Ranking for Multivariate Time Series, *IEEE Transactions on Knowledge and Data Engineering (TKDE) - Special Issue on Intelligent Data Preparation*, 2005, (To appear)