Abstract

Electroencephalogram (EEG) signals have been studied and used in many fields e.g., Emotion detection, and many brain disorders. Recent research work studied the use of EEG signals as a Biometrics. most of these used basic EEG recording protocols especially subject relaxing in resting state with eyes opened or closed. Person identification using the EEG signals of all three categories which were used in past research (visual evoked, motor task, and cognitive tasks) did not explore the effect and influence of the EEG with mental state changes on the performance of person identification. A person normally goes through many emotions every other minute. The brain signals can be influenced by mood, mental state, and stress. Yet, emotionally induced EEG has rarely been studied to perform person identification. in this work the person identification task was performed using active state and emotionally induced multi-channel EEG signals. The dataset used in this work is a standard emotion-based dataset SEED IV. the brain signals were obtained from 62 channels. Emotionally induced EEG signals are more complex than others and the signals contains information in both directions (coming and backward), So, we used BiLSTM model for classification, which go through both directions. the differential entropy (DE) features were used with LDS smoothing.