056-BM

Human State Recognition Using EEG Signal

Hamada Fathy Elgnainy _ Tarek Hassan Aouker

3rd Year Communication and Electronic Engineering, Faculty of Engineering - Tanta University, Egypt

hamada.fathy95.hf@gmail.com, ta.aoukar@gmail.com

Analyzing the Electroencephalography (EEG) signal of the brain could help us determining the state of the human. State of human could be awake, anger, calm, dreaming, concentration levels and deep sleep state. As these states change the frequency of the brain waves which are represented by EEG signal changes. The EEG signal is generally divided into four different bands of waveforms with respect to their frequencies.

The used EEG signal are acquired using extra-cranial electrodes, the extracted signals are preprocessed to remove noise and artifacts along with separating frequency bands, followed by feature extraction, then applying Branch And Bound (BAB) algorithm for feature selection. The selected features are then classified to obtain the state of the subject human.

We expect to increase accuracy measures for state recognition by using BAB algorithm combined with a classifier, over full Neural Networks approach.