

Controlling a Servo Motor Using EEG Signals from the Primary Motor Cortex Abstract The brain-computer interface represents the set of processes by which EEG signals operate in humans. It can be explained by the external device. Choosing the Right Channel The device used (Emotiv EPOC) has 14-channels only, we chose to work on the signal taken from channel (F3), since it is the best one to record the EEG signal of the motor cortex as we worked on the signal of the right hand.

### 6.2. The human brain controls the entire body Functions and movements, but the limbs and other parts of The human body can stop working completely because of Loss of connections between these parts of the brain limbs and organs due to any damage to the nervous system the EEG signal is considered as a signal.

The weakest signal among human vital signs, which is very Likely to interfere with other internal vital signs, etc External signals especially those with the same range of In order to process all artifact sources added to the EEG Indication, it is useful to classify it as biological and external. The device used in this research is EMOTIV EPOC., a new adoption method of control Servo motor rotation via EEG signals extracted from the human cerebral cortex. Mainly from noise filtering and signal normalization.

### Processing

After loading the data as a single matrix with 14 channels we chose channel F3 and extract it from the matrix

### Conclusions

Considering how weak is the EEG signal, the signal-to-noise ratio of the obtained EEG signal was good, which eased our work later to extract the pulses from the F3 signal. The signal is saved in the Arduino which The role controls the rotation of the servo motor

### Introduction

The human brain is the most developed in the human body, it produces electrical nerve signals , .

### 6.3.