

Abstract Template

EMG-Computer Interface Using Facial Muscles

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In recent, it has increased to use a personal computer on business or for pleasure. We usually use pointing devices such as a mouse. However, mouse operation causes a trouble for the amputees when they use personal computer. They want to live in the society without distinction from healthy person. In order that they might be accepted in the society, they should have the same capability as healthy people or young people. Therefore, tools and instruments that are easy to use for them are needed. The quality of life of these individuals could be significantly improved by providing them with a practical, reliable means to use standard personal computers (PC)s. can come about in at least two ways:

- Increased integration to society and productivity by communicating/working through the computer, using standard software.
- Increased unassisted control over their environment, using dedicated software/output devices to turn appliances, alarms, etc . ON/OFF.

Today they use various pointing devices, such as speech recognition mouse, head pointer and joy sticks when using personal computers. However, they seem to be hard for them. Then, we directed our attention to electromyogram (EMG) in this project with clicking feature.

The purpose of the project is to develop new type of click mouse cursor control system using EMG signal. It is necessary to find optimal electrode positions. In this technique, will be detect the signal from the facial muscles specifically temporalis muscles. When clenching the jaw then temporalis muscles is contracted, then will be design the suitable processing circuit to interface with computer device.

EMG computer interface using facial muscles system has been designed and implemented. It is designed to acquire an EMG signals from temporalis muscles. The acquired signal will be used for controlling the computer curser click command (left click), and can be controlled for double click and drag features.