

ABSTRACT

Disturbance due to eye blinking or Ocular Artifact (OA), is one of the factors that reduce the accuracy of Electroencephalography (EEG) data analysis. OA is caused by eye activity, one of which is eye blinking. The result of OA is a signal value that is many times greater than the original EEG signal. Thus, it can lead to misinterpretation of EEG signal data which has a negative impact on neurological research and medical applications.

To overcome this problem, several methods have been developed to reduce OA from EEG signals. It is known that some methods can only work on EEG data that has been recorded and cannot be done in real time data. One of the factors is because the computation of the algorithm used is too heavy for real time. Therefore, it is necessary to develop a system that can automatically reduce OA in EEG signals.

In this Capstone Design activity, an automatic OA reduction system will be built from EEG signals. The final result of this system can reduce noise due to OA with an average SNR performance level of -1.43 dB and has information display and data storage features that can improve the quality of EEG signal data and support the development of medical and neurological technology.

Keywords: EEG, OA, Reduction, Automatic