Abstract

In the past decade, many studies focused on communication systems that translate brain activities into commands for a computer or other devices that called brain computer interface (BCI). In this study, we present a BCI system that achieves high classification accuracy with Neural Network (NN), Fisher Linear Discriminant Analysis (FLDA) and Bayesian Linear Discriminant Analysis (BLDA) for both disabled and able-bodies subjects. The system is based on the P300 evoked potential and is tested with four able-bodied and five severely disabled subjects. The effect of different electrode configurations on accuracy of machine learning Algorithms is tested and effect of other factors on classification accuracy in P300-based systems are discussed.

References

- H. Cecotti, A. Graser, "Convolutional neural network for P300 detection with application to brain- computer interfaces," IEEE Transaction on Pattern Analysis and
Machine Intelligence, 2011, Vol. 33, No. 3.
Index Terms

Computer Science
Signal Processing

Keywords
Classification Event Related Potential P300 Evoked Potential Neural Network Bayesian's Linear Discriminant Analysis.