



**Bahria University**  
Discovering Knowledge

**FINAL YEAR PROJECT REPORT**

**ANALYZING LEARNING AND STUDYING  
HABITS USING BCI**

In fulfillment of the requirement  
For degree of  
BS (COMPUTER SCIENCES)

By

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## **ANALYSING LEARNING AND STUDYING HABITS USING BRAIN COMPUTING**

### **ABSTRACT**

Recent developments in computer hardware and signal processing have made probable use of EEG signals or “brain waves” for communication between humans and machines. With such help of advancements, we are presenting the objectives of our project which is to comprehend the “linking laws” connecting the functional properties of neuronal structure to specific cognitive and behavioural capabilities. We need to measure the dynamics of the brain as it performs well-characterized cognitive and behavioural tasks. Different stages involving signal retrieval, signal pre-processing, feature extraction and interpretation of those signals into a feedback will be studied and implemented. Finally, the product of the algorithms will be written in the software called MATLAB.

This project uses the EEG-based BCI technique to develop the application. The main advantage of using this technique is that it provides features extraction and detection that is suitable for recognizing human fatigue level.

Mindwave Mobile headset has been designed for practical context research and advanced brain computer interface (BCI) applications. Provides access to dense array, high quality, raw EEG data with software subscription. Conduct research controlling our detections for Face Expressions, Performance and Mental Commands.

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