My research interests are in data science and machine learning in biomedical applications.

Research title:

EEG-Based Classification of ADHD: A Promising Digital Innovation for Early Diagnosis

Abstract:

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental condition that affects millions of people worldwide. People with ADHD often experience difficulty paying attention, controlling impulsive behaviors, and hyperactivity. These symptoms can have a significant impact on daily life activities, making it difficult to succeed in school, work, and relationships.

As a result, Early diagnosis is essential for people with ADHD. However, traditional diagnostic methods can be time-consuming, expensive and need a high level of expertise.

Electroencephalogram (EEG) is a non-invasive method that measures electrical activity in the brain. EEG has been shown to be an effective tool for diagnosing ADHD, and it is becoming increasingly accessible and affordable.In this study, we examined the spectral aspects of EEG signals in people with ADHD and healthy controls.

We found that there were significant differences in the power of certain frequency bands between the two groups. We then developed a statistical classification model that could accurately distinguish between the EEG signals of people with ADHD and healthy controls with over 90% accuracy.Our findings suggest that EEG-based classification could be a valuable tool for diagnosing ADHD. EEG is a relatively quick and easy procedure, and it can be performed in a variety of settings, including clinics, schools, and even at home. EEG-based classification could therefore help to improve access to ADHD diagnosis and treatment, especially for underserved populations.