Leveraging MACHINE LEARNING to Analyze SOCIAL MEDIA USE and Understanding the GENERAL BEHAVIOR in ADHD COMMUNITIES

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BACKGROUND

01 WHAT IS ADHD?

ADHD (Attention Deficit Hyperactivity Disorder) is a common neurodevelopmental disorder characterized by inattention, hyperactivity, and impulsivity.

02 ADHD & SOCIAL MEDIA

Social media use has been linked to an increased likelihood of experiencing new ADHD symptoms, particularly in adults who frequently use these platforms and tend to have shorter attention spans.

METHODOLOGY

03 HOW DO WE COLLECT THE DATASET?

The study conducted a survey of active social media users, measuring their social media usage (hours) and ADHD symptoms using a Likert scale.

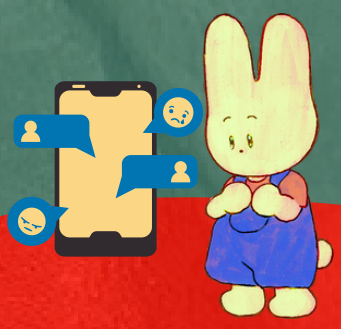
04 HOW DO WE ANALYZE IT?

Classification models were developed using supervised learning to investigate the association between social media use and ADHD symptoms, and evaluate their performance in predicting ADHD based on the survey data.

RESULTS

05 HOW WELL HAVE THE MODELS PERFORMED?

Support Vector Machines (SVM), Logistic Regression (LR), and Gaussian Naïve Bayes were found to have stable performance without overfitting or underfitting issues. Random Forest (RF) had the highest accuracy during training but showed potential overfitting when validated and tested on new data.



CONCLUSION

06 WHAT IS THE LINK BETWEEN SOCIAL MEDIA USE AND ADHD SYMPTOMS?

The study found a link between excessive social media use and an increased likelihood of experiencing ADHD symptoms in individuals. The more time individuals spend on social media, the more likely they are to experience symptoms such as hyperactivity, short attention span, impulsivity, inattention, and anxiety.

Accuracy Score

Classifier Model	Accuracy		
	Train	Validation	Test
Logistic Regression	**0.750000**	**0.812500**	**0.791667**
Random Forest	0.856771	0.687500	0.666667
Gaussian Naïve Bayes	0.736979	0.770833	0.770833
SVM	**0.718750**	**0.791667**	**0.791667**

Evaluation Report

Classifier Model	Precision			Recall			F1 Score		
	Train	Validation	Test	Train	Validation	Test	Train	Validation	Test
Logistic Regression	0.766447	0.885714	0.825000	0.903101	0.861111	0.916667	0.829181	0.873239	0.868421
Random Forest	0.848797	0.800000	0.763158	0.957364	0.777778	0.805556	0.899818	0.788732	0.783784
Gaussian Naïve Bayes	0.766102	0.857143	0.837838	0.875969	0.833333	0.861111	0.817360	0.845070	0.849315
SVM	0.727273	0.825000	0.782609	0.930233	0.916667	1.000000	0.816327	0.868421	0.878049