Title: Autism Spectrum Disorder Diagnosis using ML.

Abstract:

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by challenges in social interaction, communication, and repetitive behaviors. Early diagnosis and intervention are crucial for improving outcomes for individuals with ASD. Machine learning (ML) techniques have shown promise in aiding ASD diagnosis through the analysis of behavioral and clinical data.

This study investigates the effectiveness of Support Vector Machine (SVM) and Logistic Regression (LR) models in diagnosing ASD using a dataset comprising various behavioral and demographic features. The dataset includes information collected from individuals clinically diagnosed with ASD and typically developing individuals. The data undergo preprocessing steps, including feature selection and normalization, to enhance model performance.

SVM and LR models are trained using the preprocessed data. The performance of each model is evaluated using metrics such as accuracy, precision, recall, and F1-score through cross-validation techniques to ensure robustness and generalizability. Overall, this study underscores the potential of ML algorithms, particularly SVM and LR, as valuable tools in ASD diagnosis.

The findings contribute to the ongoing efforts in developing efficient and accurate diagnostic tools for ASD, ultimately easing early intervention and improving outcomes for individuals affected by the disorder. Further research involving larger and more diverse datasets could provide additional insights and enhance the applicability of ML techniques in ASD diagnosis and intervention strategies.