Predicting Autism Spectrum Disorder using SVM Machine Learning Algorithm

Understanding Autism Spectrum Disorder and Machine Learning

Autism Spectrum Disorder (ASD)

A neurodevelopmental disorder characterized by challenges in social interaction, communication, and behavior.

Machine Learning's Role

Machine learning algorithms can analyze patterns in large datasets to predict ASD, aiding early diagnosis and intervention.

Choosing SVM: A Powerful Classification Algorithm

1 **1. Robust and Effective**

SVM has proven efficacy in classifying complex datasets, making it suitable for ASD prediction.

2 **2. High Accuracy**

It's renowned for its high accuracy in distinguishing between ASD and non-ASD individuals.

The Dataset: A Foundation for Analysis

Source

ASD children traits

Features

The dataset includes demographic, behavioral, and cognitive data, providing a comprehensive view of ASD characteristics.

Technologies and Tools: The Arsenal for Analysis

Python

The programming language used for data analysis, model development, and evaluation.

Scikit-learn

A machine learning library in Python providing the SVM algorithm and other functionalities.

Pandas

A powerful library used for data manipulation and analysis in Python.

Streamlit

open-source Python framework used for quickly building and sharing **interactive web applications** for data science, machine learning, and other Python-based workflows

Methodology: Training and Evaluating the SVM Model

1 The dataset was split into training and testing sets, enabling the SVM to learn patterns from training data and be evaluated on unseen data.

2 The trained SVM model was evaluated on the testing set, assessing its ability to predict ASD based on learned patterns.

Made with Gamma

Results: Unveiling the Performance

73%

Accuracy

The SVM model achieved a high accuracy, correctly predicting ASD and non-ASD individuals.