Autism Prediction using Machine Learning

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**Abstract—Autism spectrum disorder (ASD), a neurodevelopmental syndrome, is commonly accompanied by sensory issues, such as an excessive or inadequate sensitivity to sound, smell, or touch. Machine learning (ML) is becoming more and more important in our daily lives. A person with an ASD struggle with social interaction and communication their entire lives. The progression of this illness starts in childhood and continues throughout adulthood. As a result, this condition has a profound impact on a person's life. An early diagnosis is crucial for reducing the symptoms of autism spectrum disorders and enhancing the quality of life for persons with autism. The early detection method will significantly aid in managing the subject's physical and mental health.**

Keywords—Autism Spectrum Disorder (ASD), Machine Learning, Support Vector Machine, Naïve Bayes, Neural Network, Face Recognition.

# INTRODUCTION

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder characterized by challenges in social interaction, speech and nonverbal communication, and repetitive behaviors. Early detection and intervention are critical for improving the quality of life for individuals with ASD. Machine Learning (ML) has emerged as a powerful tool in automating the detection and diagnosis of ASD, providing a data-driven approach to augment clinical assessments [1].

These are some of the applications-

1. Developing a Web Application [2]
2. Developing a Mobile Application [4]
3. Speech and Language Analysis
4. Behavioral Pattern Recognition

Data cleaning- The raw data, which comes from primary sources, must undergo extensive preparation before we can draw any inferences from it or perform any modelling.

Exploratory Data Analysis-Data analysis utilising visual methods is known as "EDA." Using statistical summaries and graphical depictions, it is used to identify trends and patterns as well as to test hypotheses.

The motivation for this project,s ASD is difficult to diagnose, and the rise in ASD diagnoses around the world has motivated medical professionals and scientists to develop better screening techniques [3]. these investigations have not produced any solid results regarding the capacity to predict autism features in terms of a number of age parameters.

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