

Autism Spectrum Disorder Detection Using Machine Learning

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INTRODUCTION:

Autism Spectrum Disorder (ASD) is a condition that affects human neurodevelopment, having a significant impact on communication, behavior, and social interactions. Early diagnosis of autism is very important as it helps improve the life of the person with autism. Traditional methods for diagnosing autism take a long time and heavily rely on evaluations by specialists, which may cause delays. Here, we are thinking of using Machine Learning (ML) to develop a faster and more accurate method to assist doctors in diagnosing autism.

PROBLEM STATEMENT:

The traditional methods used for diagnosing autism are time-consuming and can be inaccurate as they depend on the personal evaluations of doctors. Additionally, autism symptoms vary from one person to another, making early diagnosis more challenging. The goal of this project is to develop a Machine Learning model that can analyze data (such as behavioral patterns or responses to questionnaires) and quickly and more accurately identify early signs of autism.

GOALS:

- Develop an accurate ML model that can predict autism by analyzing available data such as behaviors or test responses.
- Identify key features (like communication skills, social interaction, and responses) that are strongly correlated with autism.
- Evaluate the model's effectiveness in terms of accuracy and sensitivity compared to traditional diagnostic methods.

RELATED WORK:

- Application of Natural Language Processing (NLP): Some studies have applied NLP techniques to assess communication patterns in children with autism. By

analyzing speech and written text, machine learning models can detect subtle language differences that are characteristic of autism, offering a new dimension of non-invasive diagnostic support.