

# Autism Prediction using ML

## Group-9

### Description:

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.

### Motivation:

Early diagnosis of autism can significantly enhance treatment outcomes and improve an individual's quality of life. However, ASD diagnosis is intricate, often requiring skilled clinicians to analyze many behavioral and clinical indicators. Machine learning can streamline this process by leveraging data to identify patterns and features indicative of ASD. Automated ASD detection can augment healthcare systems, leading to early interventions and support for affected individuals and their families.

### Applications:

An ASD (Autism Spectrum Disorder) prediction ML (Machine Learning) model can have several valuable applications in both clinical and research settings. These models aim to identify individuals who may be at risk for or already have autism based on various data inputs. Here are some applications of such models:

- **Early Diagnosis:** ML models can assist in the early diagnosis of autism in children. Early intervention is crucial for improving the outcomes for individuals with autism, and these models can help identify at-risk individuals before symptoms become more pronounced.
- **Screening and Assessment:** ML models can be used for screening and assessing individuals for autism. They can analyze various data sources, such as behavioral data, medical history, genetic information, and more, to provide a comprehensive assessment of an individual's risk for autism.
- **Personalized Intervention:** Once an individual is identified as at-risk or diagnosed with autism, ML models can be used to develop personalized intervention plans. These plans can be tailored to the specific needs and strengths of the individual, optimizing the effectiveness of therapies and treatments.