**ANALYSIS OF AUTISM SPECTRU DISORDER DETECTION TECHNIQUES**

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# ABSTRACT

ASD is a neurodevelopmental condition that is typically associated by sensory abnormalities, such as excessive or inadequate sensitivity to touch, sounds, or scents. Autism spectrum disorder (ASD) is growing more and more prevalent in the present day. Using screening tests to discover autism symptoms is highly costly and time-consuming. The growth of machine learning (ML) and artificial intelligence (AI) has made it feasible to forecast autism symptoms early on. This project's major purpose is to analyze and compare the accuracy and efficiency of numerous Machine learning approaches, including SVM, Random Forest, Decision Trees, Naive Bayes, and Logistic Regression, that have been applied by different academics.

# INTRODUCTION

Autism spectrum disorder is a disorder which is illness that inhibits a person's ability to interact, communicate, and learn. Although an autism diagnosis may be received at any age, the disorder's symptoms generally begin in the first two years of life and deteriorate with time. Autism sufferers cope with a wide array of hurdles, such as issues focusing, difficulties learning, mental health problems including anxiety and depression, as well as impairments with their motor and sensory systems. Many individuals are being impacted by autism, which is now expanding swiftly over the globe. According to statistics from the WHO, 1 in 160 children have ASD. While some patients with this condition are able to live independently, others require care and help for the rest of their lives. Autism diagnosis demands a considerable financial and time commitment. Early detection of autism may considerably assist patients by enabling proper medication to be provided. It may halt the patient's sickness from growing worse and aid cut down on the long-term expenditures connected to a delayed diagnosis. The purpose of this endeavor is to produce a mobile application that can properly predict an individual's autistic symptoms at any age, as well as to propose an autism prediction model leveraging machine learning methods. Put simply, the purpose of this initiative is to produce an autism screening app that will detect ASD symptoms in persons aged 4 to 11, 12 to 17, and 18 years and beyond.

**LITERATURE REVIEW**

This section gives a short summary of studies related to ASD prediction approaches Machine learning has a pretty exceptional potential to forecast various sorts of diseases based on symptoms. For example, Cruz et al. sought to use ML to detect cancer in, whereas Khan et al. utilized ML to predict if a person had diabetes in. Wall et al. utilized ADTrees, or Alternating Decision Trees. help cut screening times and speed up the finding of ASD characteristics. They established a high degree of accuracy by utilizing the Autism Diagnostic Interview, Revised(ADI-R)approach using data from 891 people. The test could only be used on persons who were between the ages of 5 and 17, and it was not able to predict ASD in children,

The study of the literature demonstrates that, in spite of the huge number of studies that have been done in this sector, the researchers were unable to agree on whether the ML technique could be used to generalize the autism screening test across age groups. While a number of methodologies and instruments have been produced in the past for autism screening exams, no app-based solution has been created for a range of age groups.

## CONCLUSION

Having a kid with autism disorder offers a big burden for any family. Autism is one of the crucial disorders that cannot be avoided but may be treated. It is vital to detect it as soon as possible for this reason. Developing improved diagnostic equipment to deliver speedier, more accurate, and effective findings is one of the key issues in today's research. Machine learning approaches have generated promising effects. ASD may be detected using machine learning owing to its leveraging approaches. Machine learning is used to construct robust algorithms utilizing artificial intelligence technologies. Through the use of multiple machine learning algorithms, researchers have created a model that demonstrates greater precision and accuracy. Several classifiers, including SVM, Random Forest, decision trees, LMT, KNN, Naïve Bayes, LDA, and others, have been applied in this work. SVM has provided the best results out of all of them, with an accuracy of 98.27%.

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