# Using Machine Learning Techniques for Autism Spectrum Disorder Analysis and Detection in Children

**Authors :** Norah Mohammed Alshahrani, Abdulaziz Almaleh

**Abstract :** Autism Spectrum Disorder (ASD) is a condition related to issues with brain development that affects how a person recognises and communicates with others which results in difficulties with interaction and communication socially and it is constantly growing. Early recognition of ASD allows children to lead safe and healthy lives and helps doctors with accurate diagnoses and management of conditions. Therefore, it is crucial to develop a method that will achieve good results and with high accuracy for the measurement of ASD in children. In this paper, ASD datasets of toddlers and children have been analyzed. We employed the following machine learning techniques to attempt to explore ASD and they are Random Forest (RF), Decision Tree (DT), Na¨ıve Bayes (NB) and Support Vector Machine (SVM). Then Feature selection was used to provide fewer attributes from ASD datasets while preserving model performance. As a result, we found that the best result has been provided by the Support Vector Machine (SVM), achieving 0.98% in the toddler dataset and 0.99% in the children dataset.

**Keywords :** autism spectrum disorder, machine learning, feature selection, support vector machine

**Conference Title :** ICDHDA 2022 : International Conference on Digital Health and Data Analytics

**Conference Location :** Auckland, New Zealand

**Conference Dates :** December 02-03, 2022