**TITLE OF THE PROJECT** : AUTISM PREDICTION USING DEEP LEARNING

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**ABSTRACT:**

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by challenges in communication, social interaction, and repetitive behaviors. Early identification is essential to provide timely interventions that improve developmental outcomes and quality of life. Conventional diagnostic methods often rely on clinical expertise and behavioral observation, which can be subjective and time-consuming. Artificial intelligence (AI) and deep learning techniques offer automated, objective, and scalable solutions for early autism screening. Video-based analysis is applied to detect autism-related behavioral patterns by examining facial expressions, eye gaze, body movements, and interactions. Videos are divided into frames and preprocessed through normalization, resizing, and enhancement to ensure consistency. Spatial and temporal feature extraction helps capture subtle cues associated with ASD. Classification techniques distinguish between autistic and non-autistic behaviors, while performance is evaluated using accuracy, precision, recall, F1-score, and AUC metrics. This automated, real-time, and non-invasive approach supports clinicians in early detection and decision-making. It minimizes human error and provides continuous behavioral monitoring, making it suitable for large-scale screening applications. The method enables faster diagnosis in remote or resource-limited areas where access to specialists is limited. Integration with AI-driven analytics allows better visualization and understanding of behavioral differences across individuals. The combination of technology and healthcare helps bridge the gap between clinical expertise and accessibility, improving diagnostic accuracy and reducing delays in intervention. The integration of AI and computer vision advances healthcare by enabling accessible, affordable, and inclusive screening tools suitable for diverse cultural and clinical contexts. By reducing subjectivity and enhancing efficiency, this technology-driven method promotes early autism detection and contributes to improved developmental outcomes for individuals with autism and their families.