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Autism Detection System using Machine Learning

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Abstract: *Autism spectrum disorder (ASD) is a developmental disorder that influences social interaction, communication skills, and behavioral responses. Identifying ASD at an early stage is crucial because it allows children to receive timely support, which improves their learning abilities, emotional development, and overall quality of life. Yet, current diagnostic practices are often expensive, require long evaluation sessions, and depend heavily on the judgment of medical specialists, making early detection difficult and less accessible. To address this issue, the proposed system introduces an automated method for preliminary screening. A short 15- second video of the subject is recorded using a webcam and processed to study facial expressions, micro- expressions, and repetitive behavior patterns that are commonly linked with autism. Emotional irregularities, such as sudden laughter, fear without clear reason, or rapid mood shifts, are also considered, since these are often early indicators observed in children with ASD.*

Keywords: Autism detection, Machine Learning, Emotion Recognition, image video analysis, non-invasive screening

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