Screening for Autism Spectrum Disorder by Detecting a Pattern in the Eye Movement of Autistic Children by Using an Eye Tracking System

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Autism spectrum disorder (ASD) is a lifelong condition generally characterized by social and communication impairments. The early diagnosis of ASD is highly desirable, and there is a need for developing assistive tools to support the diagnosis process in this regard. The existing tools for diagnosing autism, according to the CDC, entail time and effort on the part of specialists who must closely monitor a person's behavior. As a result, many cases of autism go undiagnosed, resulting in anxiety and other complications. The goal of this study is to find a cheaper and faster technique to screen for autism. The goal is achieved by creating a high-performance diagnosing model by using eye movement data from human participants with autism and human participants without autism. This is accomplished by comparing where the participant is looking in the video to where they should be looking over time by using an eye tracker. The findings in this project reveal patterns in the eye movement of those with autism, which differ from neurotypical children. The eye movement in ASD consisted of Fixations and saccades, which was rarely found in neurotypical children. The findings also show a range made using the confidence interval for standard deviation using chi-squared distribution and mean using z-distribution for ASD, and neuro typical participants. The results show that the average standard deviation for ASD is significantly greater than those without. This approach to screening for ASD could have a quite promising accuracy.

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