Analyzing Eye-Movement Data to Evaluate Motor Cognition Functionality for Early Detection of Neurological Conditions Using Deep Learning

Mangalampalli, Aditya (School: Mission San Jose High School)

Out of the 7.8 billion people on Earth today, over 1.3 billion of them suffer from a neurological condition, out of which over 450 million of them do not get their condition diagnosed or treated by a medical professional until it’s too late. The main reasons for this are the lack of access to diagnostic facilities and in the case where they are available, the tests are expensive, leading most people to ignore any symptoms. In recent years, there have been many studies conducted that successfully linked neurological conditions to behavioral changes that are typically seen in eye movements. With my interactions with professionals in this field within the past few months, I have been able to analyze data and traits exhibited by people who have been diagnosed with different neurological conditions and devise a solution featuring an easier-to-use, accessible method of screening. This new solution uses developments in the field of A.I. to create an easily accessible web-application that can be run on any device that has a camera. This web-application uses the built-in camera to track a person’s eye movements as they participate in a series of on-screen tests to observe biological markers and traits that are exhibited. These traits are used to interpret if a neurological condition exists or will exist. This solution will help detect neurological conditions at earlier stages which can dramatically reduce treatment costs and potentially save many lives. The application is currently being tested on 1300 patients by scientific professionals.

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