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Nodding Detection Report: Experimental Set-up and Approach

In my Nodding Detection app, I used my Samsung S10e Smartphone equipped with an app that monitors certain information from the phone’s camera to detect nodding and shaking of one’s head. The information in which I have monitored were point values from the left and right eye, the midpoint between the left and right eye and the midpoint between the eyes and the nose. I have used the Android Firebase ML kit to extract that information to detect a face, determine landmarks and determine the nodding detection. The algorithms for the nodding detection are when a head is detected the Firebase ML kit will determine the face’s landmarks by finding the eyes and nose of one’s face. Once the landmarks are determined by the ML kit, the point values are then used to calculate the midpoint between the eyes and a midpoint between the eyes and nose. Once the points are determined and calculated, a recorder is then initialized with a start and end time to determine the time between a person head moving up and down, and a threshold to trigger the recorder which altogether determines a nod or a shake. Overall, using Firebase ML has been very accurate with the landmark detection though some it may need little bit of training to be perfect when detecting it’s landmarks.