

ABSTRACT

Intense and neutral scenes can trigger different emotional changes, with stress being a physiological and psychological response to pressures that exceed an individual's adaptive capacity. This study aims to design an eye tracking system to analyze eye movement patterns as an indicator of response changes related to stress. The data collection method involved recording the subject's face while watching a stimulus video, specifically a tense video. The eye movement patterns were then analyzed using Machine Learning. The results show a significant difference in total saccade amplitude between tense and non-tense scenes, with a p-value of 0.018 ($p < 0.05$). This indicates that total saccade amplitude can be used as an effective indicator for detecting emotional changes caused by tense stimuli and can be relied upon to assess psychological response changes, particularly those related to stress. The developed eye tracking system provides deeper insights into the relationship between stimuli and emotional changes.

Keywords: Emotional changes, Eye tracking, Artificial Intelligence, Video stimulus. Saccade Amplitude, Paired Test