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PB06 - The modeling method of eye tracking based psychological experiment by Matlab development environment

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The eye tracking techniques is the one of the most advanced state-of-art physiological measurement to non-intrusively get human vision attention which is widely used on psychological research. Although state-of-art commercial eye tracking data analysis and modal software are well developed, the every growing demand ask for more flexible experiment design paradigm and in-depth data analysis. Therefore the latest publish Eye tracking Matlab Software Development Kit (SDK) was comprehensively illustrated in this paper. The six basic physical experiment modules and eye gaze based time-space data structures were proposed in the paper. The four main MATLAB toolbox, Trigger tools, Calibration tools, Synchronize tools and Tracking tools are thoroughly analyzed and a MATLAB pseudo-code of a typical eye tracking experimental paradigm is provided finally. The MATLAB based eye tracking modeling method is first systematically introduced in domestic on this paper. Such a technique will defiantly benefit the originality and interdisciplinary research on psychology and other related study.

PB07 - Emotion Recognition in Children with Autism Spectrum Disorders: An Eye-Tracking Study

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The emotion recognition of individuals with autism spectrum disorders (ASD) have been widely studied. However, the findings are inconsistent. This study examined the behavioral and autonomic response to emotional faces in children with autism and typically developing children (TD). Eye-tracker monitored fixation time and pupillary diameter of participants while they looked at faces pictures, each of which displaying happy, fearful or neutral emotions. Overall, (a) children with ASD showed preference for eyes for all three emotions, while TD controls showed preference for mouth region when looking at fearful and happy faces, but showed preference for eyes when looking at neutral faces; (b) children with ASD had smaller overall pupil size and (c) negative correlation between fixation time to eyes and pupil size was found only in ASD group. Our findings indicate that, unlike TD children, the ASD children in present study could not find the meaning of emotions on human faces.