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“Analysis of Eye Response to Video Quality and Structure”

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Computer and Electrical Engineering and Computer Science

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ABSTRACT OF DISSERTATION

Analysis of Eye Response to Video Quality and Structure

Real-time human eye recognition and tracking systems with human-computer interaction mechanism are being adopted to advance user experience in smart devices and consumer electronic systems. Eye tracking systems measure eye gaze and pupil response non-intrusively. This research presents an analysis of eye pupil and gaze responses to video structure and content. The set of experiments for this study involved presenting different video content to subjects and measuring eye response with an eye tracker. Results show significant changes in a video and scene cuts lead to sharp constrictions. User response to videos can provide insights that can improve subjective quality assessment metrics. This research also presents an analysis of the pupil and gaze response to quality changes in videos. The results show pupil constrictions for noticeable changes in perceived quality. Gaze responses show higher fixations/saccades ratios with lower video quality showcasing more effort by users in discerning features. Using real-time eye tracking systems for video analysis and quality evaluation can open a new class of applications for consumer electronic systems.

BIOGRAPHICAL SKETCH

Born in the India
B.S. 2008, Jawaharlal Nehru Technological University, India
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CONCERNING PERIOD OF PREPARATION & QUALIFYING EXAMINATION

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Published Papers:


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