AI-Powered Video and Image Procssing for Video Meetings

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Abstract: *This project presents an AI-powered system for real- time video and image processing in virtual meetings, aimed at enhancing security, engagement, and integrity. It integrates deep learning techniques including YOLO for object detection, face recognition, facial landmark analysis, and MediaPipe-based head pose estimation. The system detects behaviors such as gaze diversion, mouth movement, multiple person presence, and spoofed identities using color histogram-based spoof detection. Alerts are generated for suspicious activities in real time, making it ideal for online proctoring, virtual interviews, and remote monitoring. The architecture ensures low latency and high accuracy, supporting intelligent and trustworthy remote interactions.*

Keywords: Online proctoring system, Education, Authentication, Abnormal behavior detection