Hands-Free Control Presentation: A Gesture-Based PowerPoint Control System

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Abstract: *Traditional presentation control methods, such as keyboards, mice, or clickers, often disrupt a presenter's ability to engage naturally with their audience. This project introduces a gesture-based control system that enables presenters to navigate PowerPoint slides and perform additional actions using simple hand gestures. Leveraging computer vision and real-time handtracking technologies, the system utilizes a standard webcam alongside advanced tools like Mediapipe and OpenCV. The system eliminates the need for specialized hardware, prioritizing ease of use and functionality under diverse lighting and environmental conditions. By enabling natural and dynamic interaction, this solution enhances mobility and fosters better audience engagement. Designed for use in classrooms, conferences, and professional environments, it transforms presentations into intuitive and impactful communication experiences.*

Keywords: Gesture Recognition, PowerPoint Control, Computer Vision, Mediapipe, OpenCV, Hands-Free Interaction

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