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Gesture-Controlled Document Navigator

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Abstract: *In the digital era, traditional methods of document navigation, such as keyboard shortcuts and mouse clicks, are gradually being replaced by more intuitive and interactive solutions. This project, Gesture Controlled Document Navigator, introduces a novel approach to navigating digital content using hand gestures. By leveraging computer vision techniques and threshold-based gesture recognition, users can seamlessly browse through documents and presentations without physical contact, enhancing accessibility and interactivity.*

The system employs OpenCV and cvzone's HandDetector module to capture real-time video input, detect hand landmarks, and interpret specific gestures. Threshold-based gesture control is used to map predefined hand movements to navigation actions, such as moving between slides, drawing annotations, and erasing content. The algorithm identifies finger positions, analyzes their state, and executes corresponding commands with minimal processing delay.

This technology can be applied in education, business presentations, and accessibility solutions, offering a handsfree, interactive experience. The system is efficient, cost-effective, and requires no additional hardware, making it suitable for a wide range of users. Future improvements may include AI-driven gesture recognition for enhanced accuracy and integration with AR/VR environments to further expand its usability

Keywords: Gesture Control, Computer Vision, OpenCV, Hand Tracking

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