

Virtual Mouse Controlled By Hand Gestures

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Abstract: *The Gesture-Controlled Virtual Mouse project improves human-computer interaction by removing the requirement for physical contact and allowing users to manage computer tasks with voice instructions and hand gestures. The system uses MediaPipe and OpenCV in Python to identify and interpret user inputs using sophisticated machine learning and computer vision techniques. The architecture, deployment, and implementation of the system are presented in this study, emphasizing how well it works as a touchless computer control interface. Users with physical limitations can access the system thanks to its precise cursor control and easy navigation. Its adaptability covers a wide range of uses, such as remote system management, gaming, and presentations. A smooth and cutting-edge user experience is provided by the combination of voice commands and gesture detection.*

Keywords: Gesture recognition, virtual mouse, human-computer interaction, MediaPipe, OpenCV, voice commands, machine learning, computer vision