FileMaestro

Problem Definition

- Traditional input devices (keyboards, mice) can be cumbersome and inaccessible, especially for users with disabilities.
- Repetitive use of these devices can lead to ergonomic issues.
- There's a need for more natural and intuitive ways to interact with computers.

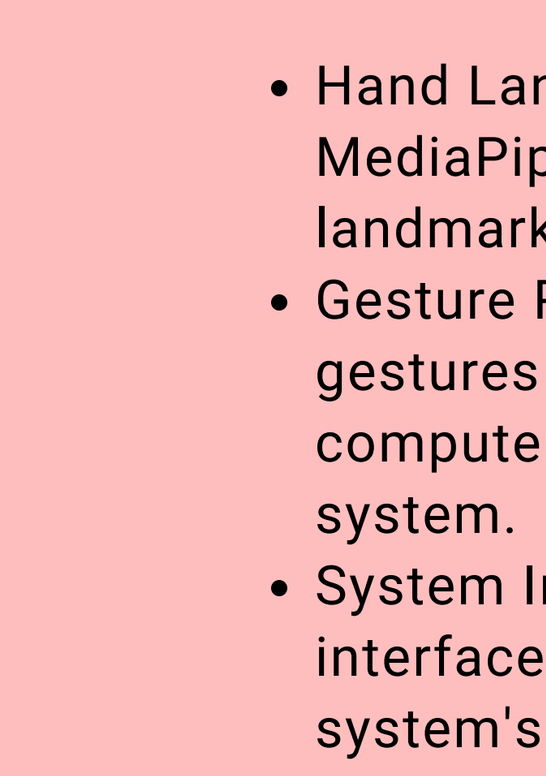
Solution

FileMaestro utilizes the MediaPipe library, a cutting-edge framework for real-time hand tracking and gesture recognition. Our system seamlessly integrates hand gesture recognition with computer actions, enabling users to:

- Perform common tasks like copy, paste, and cut.
- Control mouse movements and clicks.
- Adjust sound settings.
- Start/Stop videos.

Details of the Solution

- Hand Landmark Detection: MediaPipe accurately tracks 21 3D landmarks on the hand in real time.
- Gesture Recognition: Recognized gestures are mapped to specific computer actions using a rule-based system.
- System Integration: FileMaestro interfaces with the operating system's API to execute commands based on recognized gestures.
- Real-Time Processing: The entire process occurs seamlessly in real time, ensuring a smooth and responsive user experience.



Final State/Outcome:

- FileMaestro successfully demonstrates accurate and real-time hand gesture recognition.
- User testing confirms the system's intuitiveness and ease of use.
- The system's responsiveness and minimal latency provide a seamless user experience.