AI VIRTUAL PAINT APPLICATION USING OPENCV

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AIM

To develop a real-time hand gesture recognition to enable users to control the paint application using natural hand movements

This project aims to address the challenge of eliminate the need for traditional input devices, offering a more natural and accessible way for users

OBJECTIVE

To develop an advanced paint application that replaces traditional input devices with gesture-based controls

To improve accessibility and ease of use by integrating advanced computer vision techniques.

INTRODUCTION

- 1. In the evolving field of human-computer interaction, this project introduces a cutting-edge painting application that uses computer vision and hand gesture recognition to offer a more intuitive and accessible user experience.
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- 2. By removing the need for traditional input devices like keyboards, mice, and styluses, the application enables users to interact naturally through hand gestures.

PROPOSED METHOD

Setup Media-Pipe and OpenCV: Initialize Media-Pipe for hand tracking and OpenCV for drawing and GUI elements.

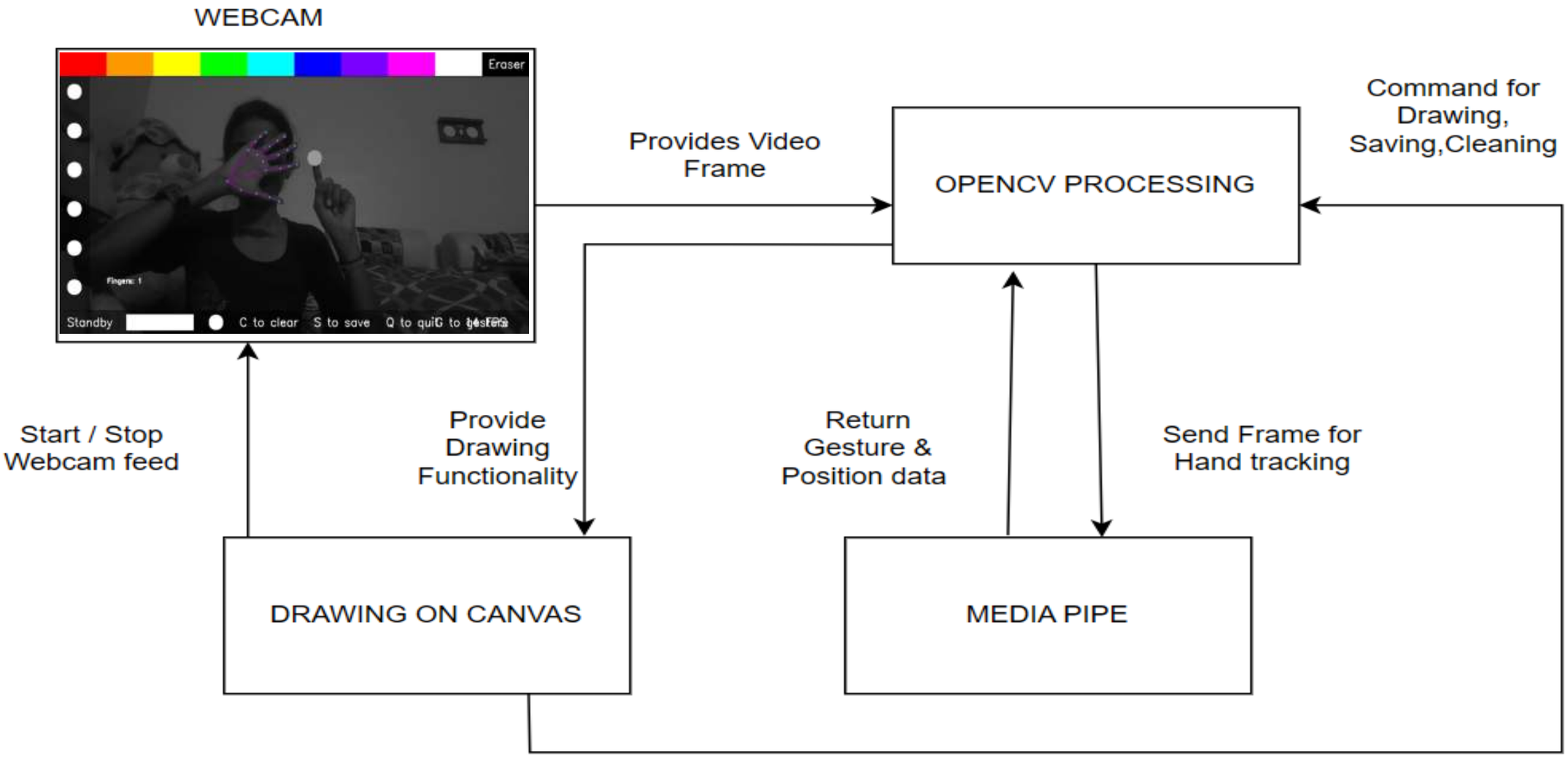
Gesture Recognition: Develop custom functions to recognize and interpret hand gestures, enabling or disabling drawing based on the left hand's state.

Drawing Mechanism: Implement the drawing logic, adjusting brush size and color based on the right hand's finger configuration.

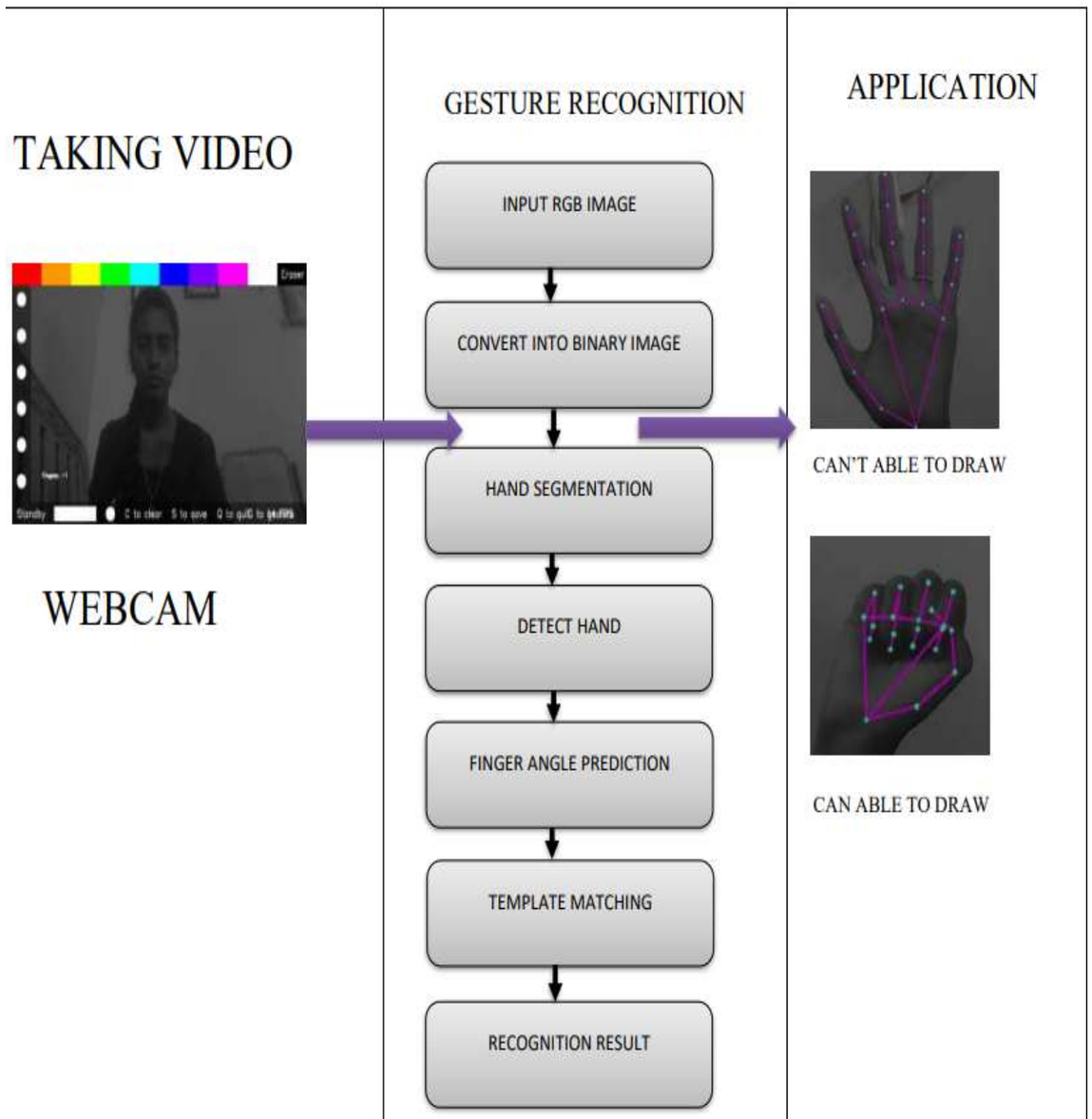
GUI Integration: Create interactive GUI components for color selection, brush size adjustment, eraser functionality, and save/clear/quit options.

Testing and Optimization: Continuously test the application for accuracy in gesture recognition and responsiveness, optimizing performance and user experience.

SYSTEM DESIGN



MEDIAPIPE WORKFLOW



OUTPUT FRAME