

A Project Abstract

on

Air Canvas with gesture control using OpenCV

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ABSTRACT

This research introduces "Air Canvas," a virtual drawing tool controlled by hand gestures using OpenCV. It provides a contactless way to interact with a digital canvas by detecting and tracking hand movements in real time. Using computer vision techniques like color detection, contour analysis, and hand segmentation, the system maps gestures accurately while addressing challenges such as background noise and lighting variations. Key methods include skin-color thresholding for hand detection and motion tracking for smooth drawing, with gestures like fingertip detection for color selection. The Air Canvas highlights the potential of gesture-based interfaces for creative, educational, and assistive applications, with future work focusing on more gestures, improved algorithms, and hardware enhancements.

Keywords: *Gesture-based Interfaces, Hand Detection, Motion Tracking*

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