

Gesture-Based 3D Painting Using HCI

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Introduction

- Overview:
- This project explores the intersection of art, technology, and human-computer interaction.

- Purpose:
- To enable users to paint in 3D space using gesture recognition technology, providing freedom akin to traditional art.

Features

- Intuitive hand-gesture controls for painting.
- Real-time 3D canvas interaction.
- Freedom from physical input devices.
- User-friendly interface.
- Supports artistic techniques like layering and depth.

Technology Used

- Gesture Recognition: Al-based tracking algorithms.
- 3D Rendering: OpenGL/Unity.
- Programming Languages: Python/C#.
- Devices: Leap Motion or camera-based gesture detection.
- Frameworks: TensorFlow/Keras for Al.

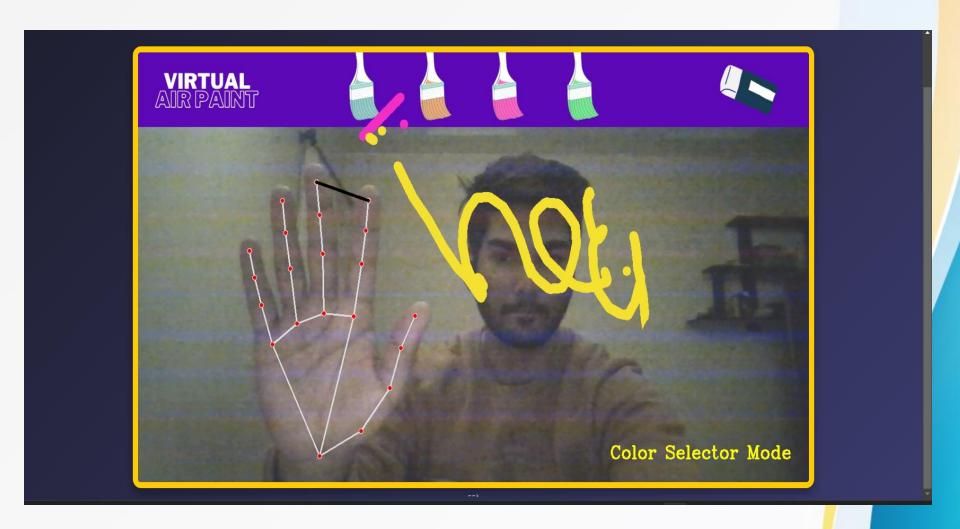
System Flowchart

- 1. Input (Hand Gestures).
- 2. Gesture Recognition (Al Processing).
- 3. Translation to Commands.
- 4. 3D Rendering on Canvas.

Applications & Future Scope

- Applications:
- Digital art and animation.
- Virtual reality (VR) environments.
- Therapeutic tools for rehabilitation.
- Future Scope:
- Enhancing VR/AR integration.
- Extending to sculpting or music creation.
- Advanced multi-user collaboration in 3D spaces.

Project Output



Thank You!!