

Virtual Carrot Juice Maker using Hand Gestures

Abstract

The Virtual Carrot Juice Maker is an interactive web-based application that uses real-time hand gesture recognition to simulate the process of making carrot juice. The system leverages MediaPipe Hands, HTML5 Canvas, and JavaScript to detect user hand gestures through a webcam and map them to sequential cooking actions such as picking carrots, washing, blending, adding sugar, adding milk, and presenting the final juice.

Objective

To design a gesture-controlled interactive web application using AI-powered hand tracking.

Technologies Used

HTML5, CSS3, JavaScript, MediaPipe Hands, Web Audio API.

System Workflow

1. Webcam captures hand movements.
2. MediaPipe detects hand landmarks.
3. Gestures are recognized using finger count and landmark positions.
4. Actions are triggered after a hold duration.
5. UI, sound, and animations update dynamically.

Conclusion

This project demonstrates effective integration of computer vision and web technologies to create a fun, educational, and interactive gesture-based application.