

## **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.