

REVOLUTIONIZING JAPANESE CALLIGRAPHY LEARNING THROUGH AI-POWERED HAND GESTURE TECHNOLOGY

Revolutionizing Japanese Calligraphy Learning through AI-Powered Hand Gesture Technology



In our rapidly evolving digital era, traditional arts like Japanese calligraphy (Shodo) are often seen as difficult or impractical for the younger generation to learn. To bridge this gap between cultural heritage and modern technology, a new interactive game has been developed: "Hand Gesture Game Kaligrafi Jepang Dengan Konsol Tangan". Created by Ida Ayu Putu Diah Wahyuni, this innovative project transforms the way people practice Hiragana.

This web-based application replaces traditional brushes and ink with Computer Vision and MediaPipe technology. Using a standard webcam, the system tracks the user's index finger coordinates in real-time, rendering air-writing as digital ink on a virtual canvas.

Gesture Controls:

- Index Finger Up: Activates writing mode.
- Fist Gesture: Halts writing (simulating lifting a brush from paper).

Upon character completion, the system utilizes Similarity Matching to normalize the user's input and compare it against standard Hiragana stroke templates. Users receive instant scores and feedback (e.g., "Perfect," "Good," or "Try Again") to facilitate effective learning.

By merging traditional art with Human-Computer Interaction (HCI), this project offers a modern, accessible, and paperless approach to preserving and practicing Japanese calligraphy.