

Teachable Machines Gesture Training Guide

Want to create your own gesture-controlled AI experiment using Google's Teachable Machine? This step-by-step guide will walk you through the process of building a webcam-based image classifier that can recognize hand gestures like:

- Thumbs Up = "Go"
- Open Palm = "Stop"
- Fist = "Jump"

Objective

Train a machine learning model using images of different hand gestures and use it to trigger events in a game or interactive application. No coding experience required!

What You'll Need

- A laptop or desktop computer with a webcam
- Access to the internet
- Google Chrome or any updated browser
- A quiet, well-lit space for training images
- Optional: An account to save your project on Google Drive

Step-by-Step Instructions

Go to Teachable Machine

Visit: <https://teachablemachine.withgoogle.com/>

Click Get Started > Choose Image Project > Select Standard Image Model.

Set Up Your Classes

Click Add a Class to create three classes:

Class 1: Thumbs Up (label it "Go")

Class 2: Open Palm (label it "Stop")

Class 3: Fist (label it "Jump")

Collect Your Training Data

For each gesture:

- Use your webcam to capture 60–80 images per class
- Move your hand to slightly different positions, distances, and angles
- Vary lighting conditions — turn lights on/off or shift location
- Avoid any background clutter that might confuse the model

Train Your Model

Once you've collected enough images:

- Click the Train Model button
- Wait while the model processes the training data (usually under 1 minute)
- Once complete, you'll see the live preview showing classification results in real-time

Export and Use the Model

Option A: Use it in a Web Application

- Click Export Model
- Choose Upload (TensorFlow.js)
- This uploads the model to Google Cloud and gives you a model URL
- Use this URL in your JavaScript project following Google's sample code or integrate it into a game prototype

Option B: Run Locally (Offline)

- Click Download to get a zip file
- Unzip to get model.json, metadata.json, and weights.bin
- Use TensorFlow.js to load the model in your browser or Node.js environment

Optional: Use the Live Preview

- Use the built-in preview pane to test the model with your webcam
- Watch real-time predictions and confidence scores

Connect to Game Logic (JavaScript Example)

```
if (prediction === "Go") {  
  character.moveForward();  
} else if (prediction === "Stop") {  
  character.stop();  
} else if (prediction === "Jump") {  
  character.jump();  
}
```

- Add debounce logic or smoothing for better UX

Improve Your Model

- Add more diverse training images
- Train in multiple environments
- Smooth gesture transitions by filtering outputs over time

Test and Share

- Try it in a simple browser game
- Record your results
- Share it on platforms like Glitch or GitHub Pages

Tips for Success

- Keep backgrounds neutral during training
- Avoid overly fast hand motions
- Use consistent gesture presentation