

Lab: Teachable Machine

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TINYML4D

https://teachablemachine.withgoogle.com


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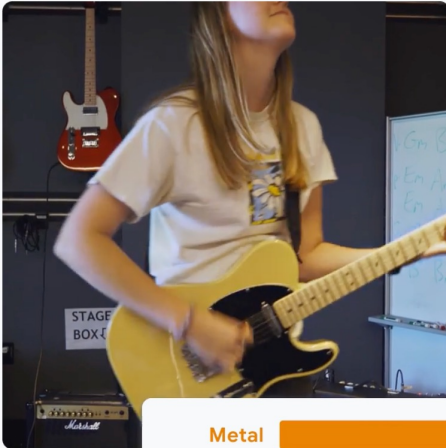
Teachable Machine

Train a computer to recognize your own images, sounds, & poses.

A fast, easy way to create machine learning models for your sites, apps, and more – no expertise or coding required.

[Get Started](#)






Metal 99%

Not Metal

What is Teachable Machine?

Image Project

New Project

 Open an existing project from Drive.

 Open an existing project from a file.

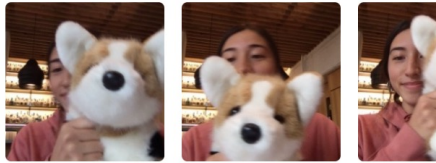
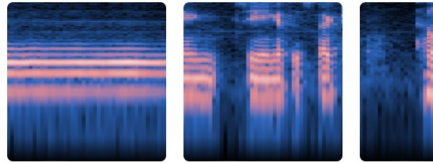


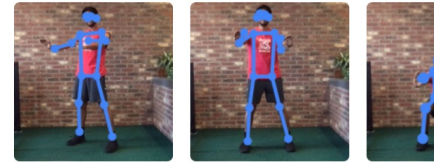
Image Project

Teach based on images, from files or your webcam.



Audio Project

Teach based on one-second-long sounds, from files or your microphone.



Pose Project

Teach based on images, from files or your webcam.

Image Project

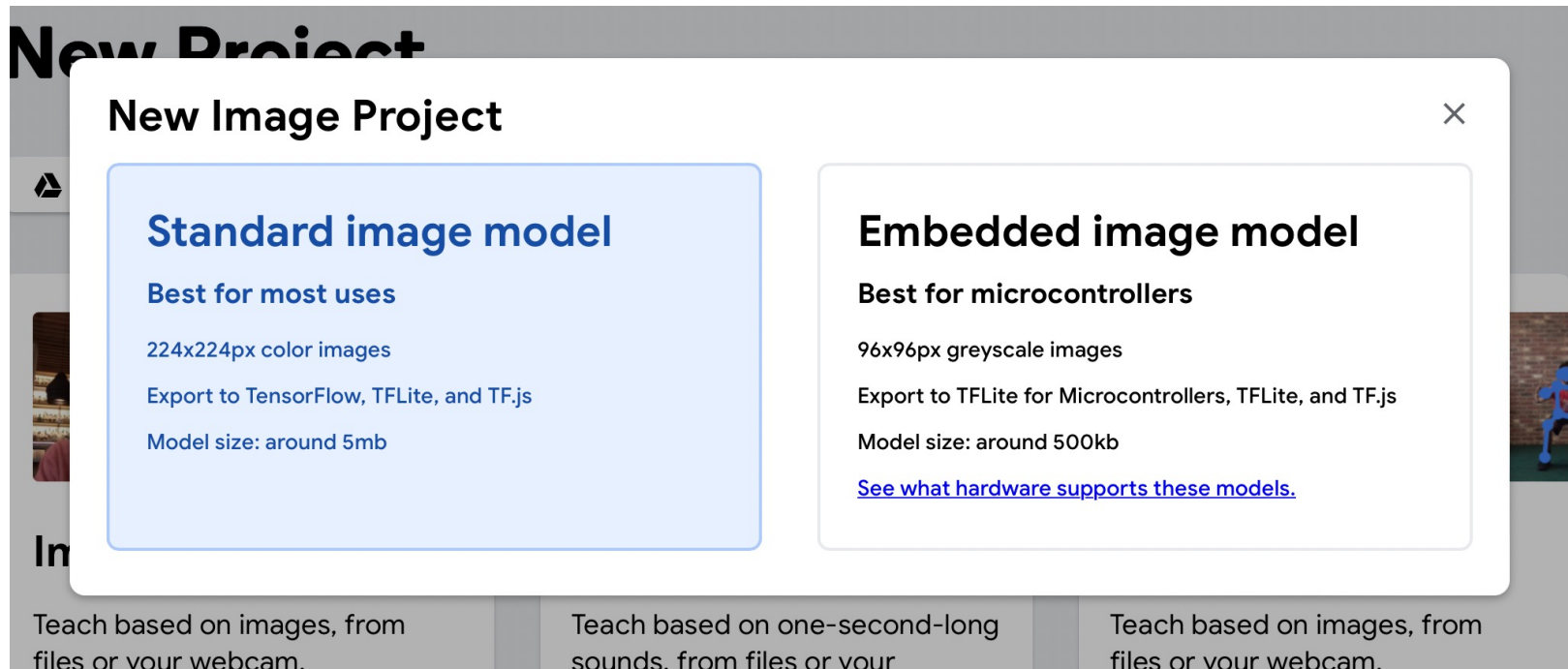
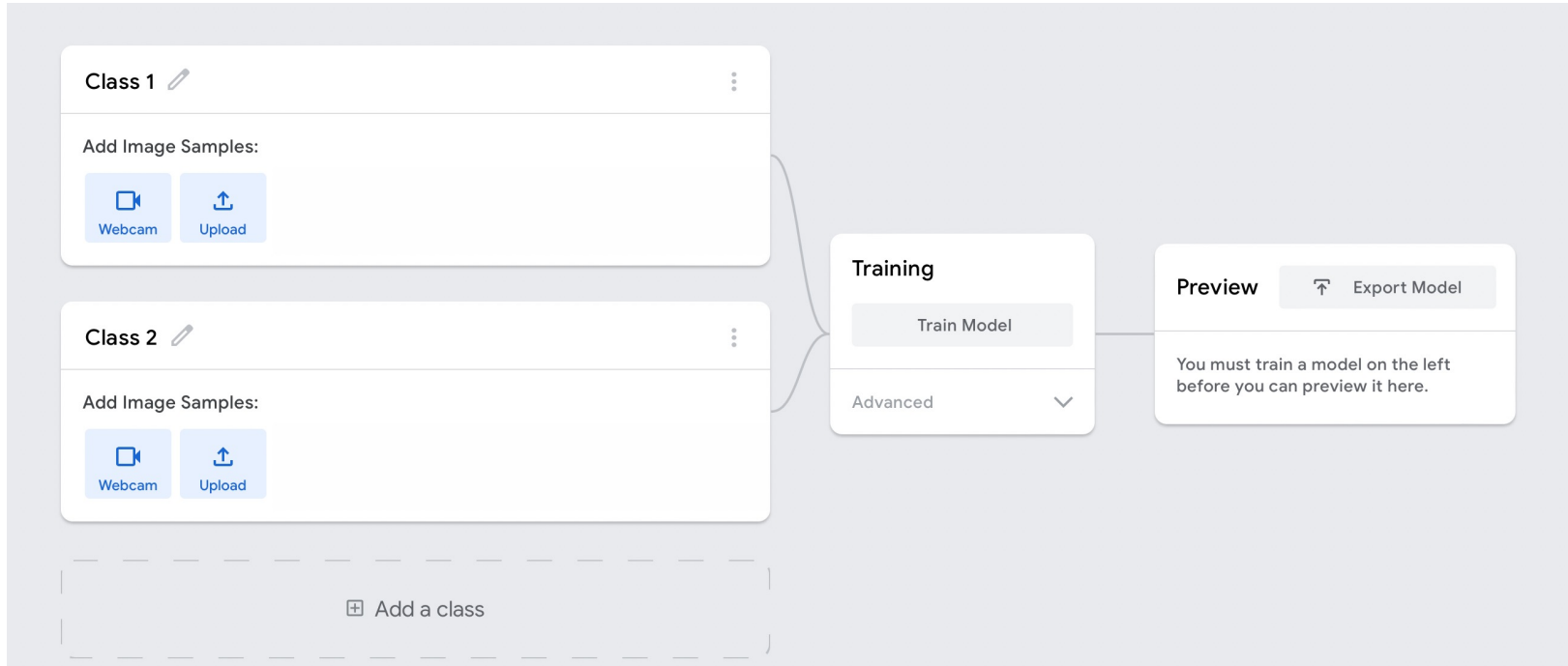


Image Project



- 1) Give classes a name (Glasses/No Glasses, Mask/No Mask, Smiling/Serious, etc)
- 2) Click and Hold on Webcam to take many pictures
- 3) Make sure the classes have the same number of pictures

Image Project

Teachable Machine

NO mask

34 Image Samples

Webcam Upload

Mask

Webcam

40 Image Samples

Hold to Record

Training

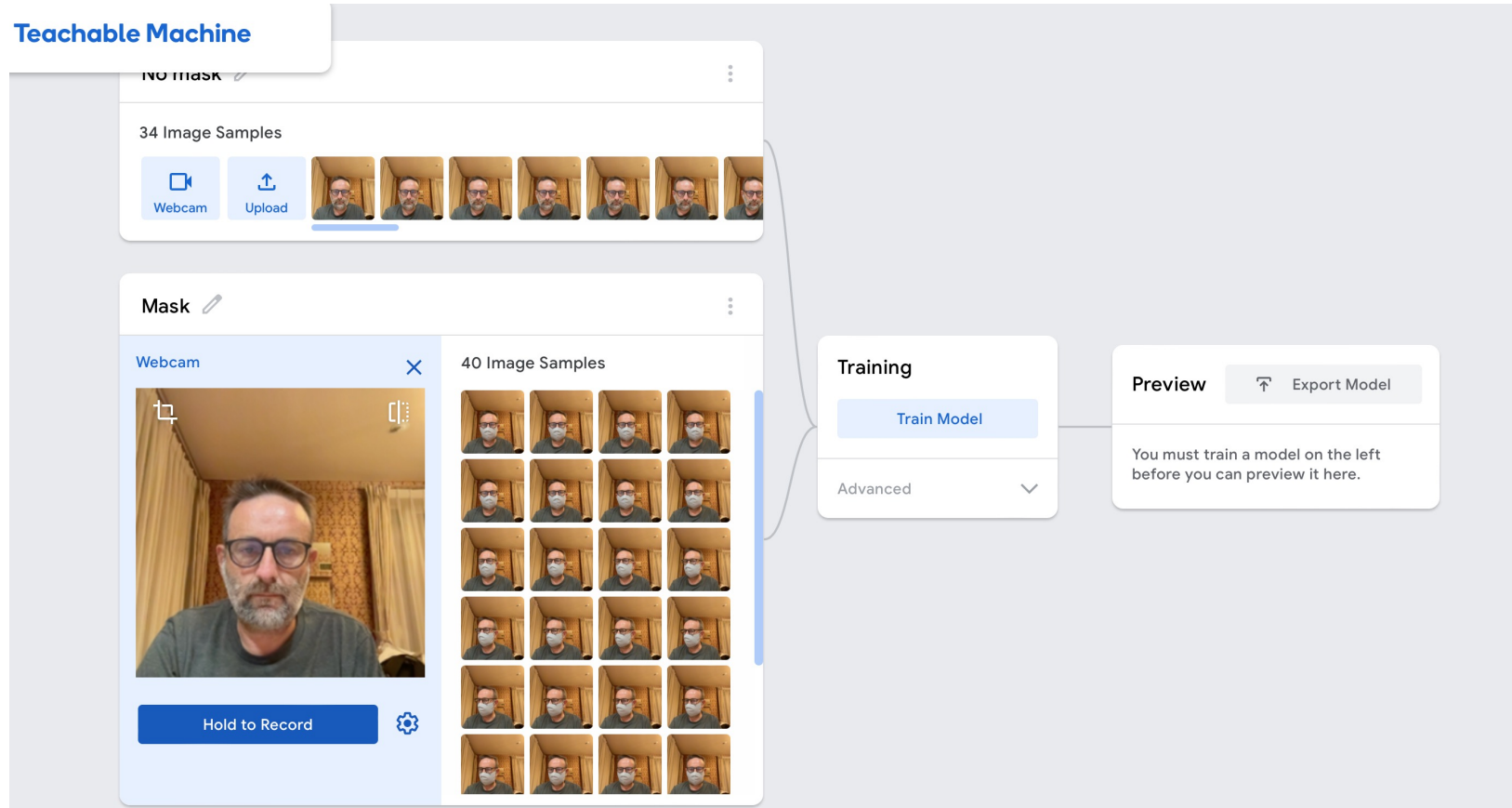
Train Model

Advanced

Preview

Export Model

You must train a model on the left before you can preview it here.

The image shows the Teachable Machine web interface. On the left, there are two training panels. The top panel is titled 'NO mask' and shows 34 image samples of a man's face without a mask. It has 'Webcam' and 'Upload' buttons. The bottom panel is titled 'Mask' and shows 40 image samples of the same man wearing a white face mask. It also has a 'Webcam' button and a 'Hold to Record' button. To the right of these panels is the 'Training' section, which contains a blue 'Train Model' button and a dropdown menu currently set to 'Advanced'. Further right is the 'Preview' section, which has an 'Export Model' button and a message that says 'You must train a model on the left before you can preview it here.' A thin line connects the 'Train Model' button to the 'Preview' section.

Click on Train!

Image Project

The interface is divided into three main sections: Data Collection, Training, and Preview/Output.

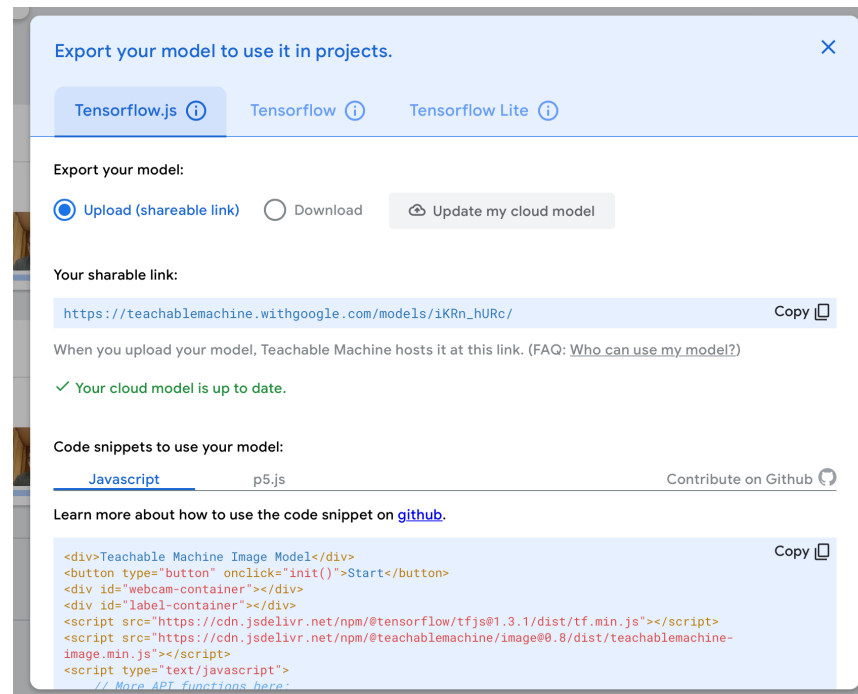
- Data Collection:** Contains two panels for adding image samples.
 - No mask:** Shows 34 Image Samples. Includes 'Webcam' and 'Upload' buttons, followed by a row of 8 sample images.
 - Mask:** Shows 40 Image Samples. Includes 'Webcam' and 'Upload' buttons, followed by a row of 8 sample images.
- Training:** A central panel with a 'Model Trained' button and an 'Advanced' dropdown menu.
- Preview/Output:** On the right, it features a 'Preview' tab and an 'Export Model' button.
 - Input:** A toggle switch is set to 'ON', and a dropdown menu is set to 'Webcam'.
 - Preview Image:** A live video feed of a man's face.
 - Output:** A section showing classification results.

Class	Percentage
No mask	100%
Mask	

Click on Preview

Questions

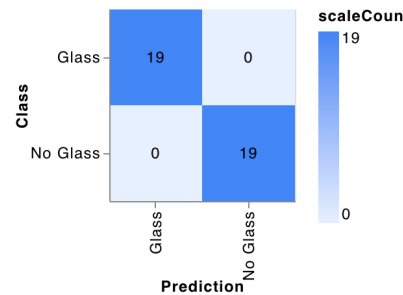
- How many pictures do you need to have a good model?
- What happens if the two classes are unbalanced?
- Export the model as a Sharable Link (Tensorflow.js → Upload) and give the link to a colleague. Does it still work fine?



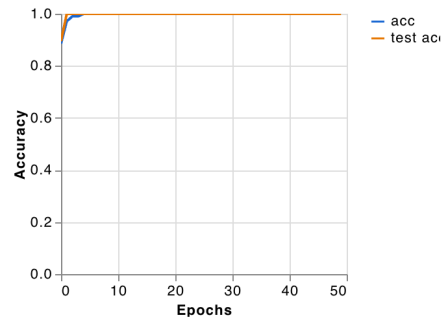
Questions

- Under Training → Under the hood, you will find more technical information about the model. How does it perform?

Confusion Matrix



Accuracy per epoch



Running on Android

- [https://github.com/mstale007/Teachable Machine Mobile](https://github.com/mstale007/Teachable_Machine_Mobile)

1. Train your model on [Teachable Machine web app](#).
2. Select Export Model and chose Tensorflow Lite option and then Floating Point model and download those.
3. This will download a zip file containing .tflite and labels.txt. Extract it and send both files to your mobile.

Running on Android

Install and Start the App	Browse and Select your .tflite and labels.txt file extracted from the zip file	Press start tflite	Have Fun...!
