

Teachable Machine

WL Hack Club

Machine learning

Machine learning has become very popular recently

With the rise of ChatGPT and other generative AI, anyone can now see it in action

However it requires a lot of complicated math

Google has created Teachable Machine, which allows you to create models without knowing the complex math or coding

We are going to make a website that detects whether you are alone in a picture or have another object in it

Training

A machine learning model is mathematical model that we want to “teach” to solve a problem

We give the model many of examples of the problem we want to solve and the correct solution (called training data)

The model uses what it learns from these examples to make predictions on new data that we give it when testing

We want to give the model pictures of us by ourselves and with another object

Training our own model

Go to teachablemachine.withgoogle.com

Pick Image Project

New Project

📁 Open an existing project from Drive.

📁 Open an existing project from a file.

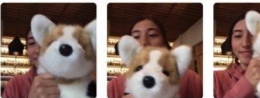
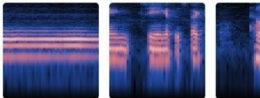



Image Project

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.

Teachable Machine

Class 1

Add Image Samples:

Webcam Upload

Class 2

Add Image Samples:

Webcam Upload

Add a class

Training

Train Model

Advanced

Preview

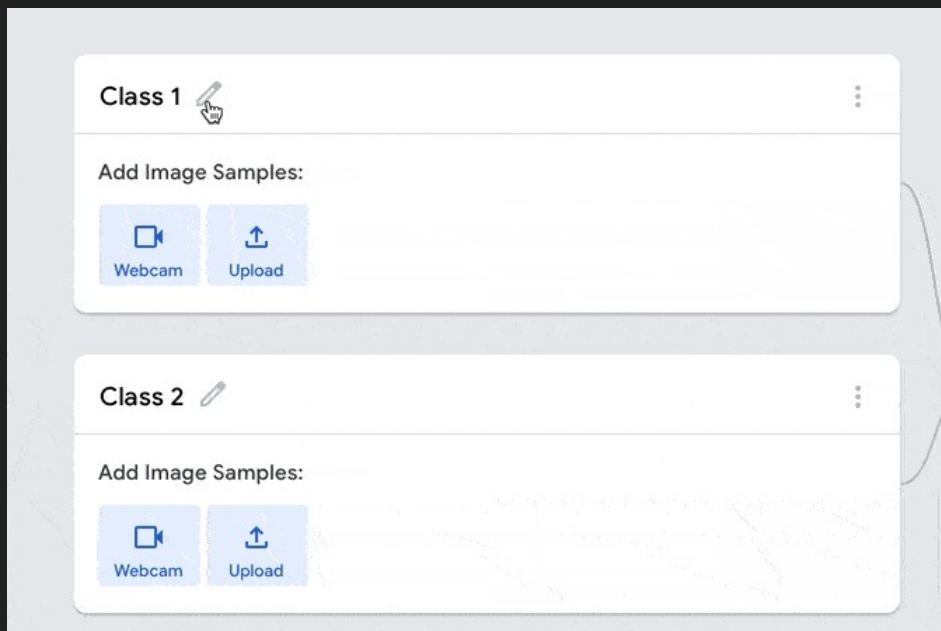
Export Model

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

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Naming classes

Rename "Class 1" and "Class 2" to "me" and "me with [some object]"



Adding data

Turn on your webcam for each class and click "Hold to Record"

You want to have at least a few hundred image samples recorded

The more pictures and different angles/positions in those pictures you have, the more accurate your model will be

It will better learn the differences between both classes

Training

Once you think you have enough pictures, click "Train Model"

It will probably take around 30 seconds, but might take longer depending on how many images you have

Once the model is trained, a preview will appear

Test it out

If the model is shaky in some positions, add more data in those positions

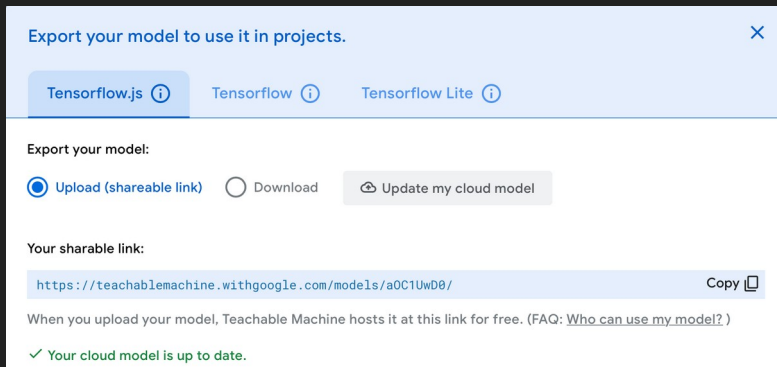
Keep training until the model can consistently identify the correct class

Exporting

When you have finished training, click “Export Model” to upload it to Teachable Machine’s servers

Then click “Upload my model” once the window pops up

After a few seconds, you should see a link to your model available under “Your sharable link:”



Creating a website

Scroll down and copy the code generated by Teachable Machine

Go to repl.it and create a new HTML repl

Paste the code between the `<body>` tags

Before running the code, look through it, as it has many comments and is very easy to understand

Run the repl and open your website by clicking the icon at the top right

Click "Start" and give the site access to your webcam

Done?

You just trained a machine learning model from scratch!

There are still more things to learn

You can add more classes with the "Add Class" button

Spend the rest of the time playing around with the model and testing it with different classes

Questions?