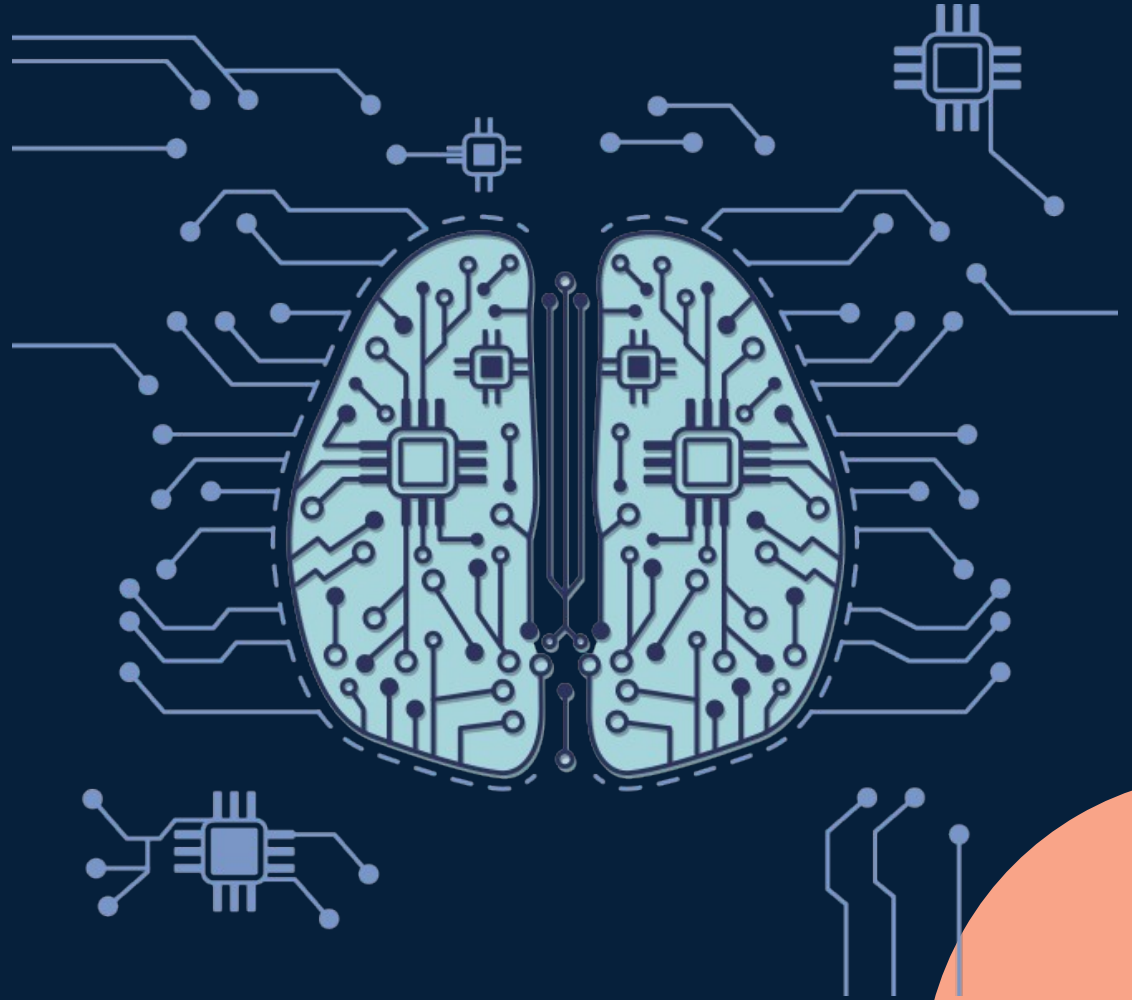# Audio Models
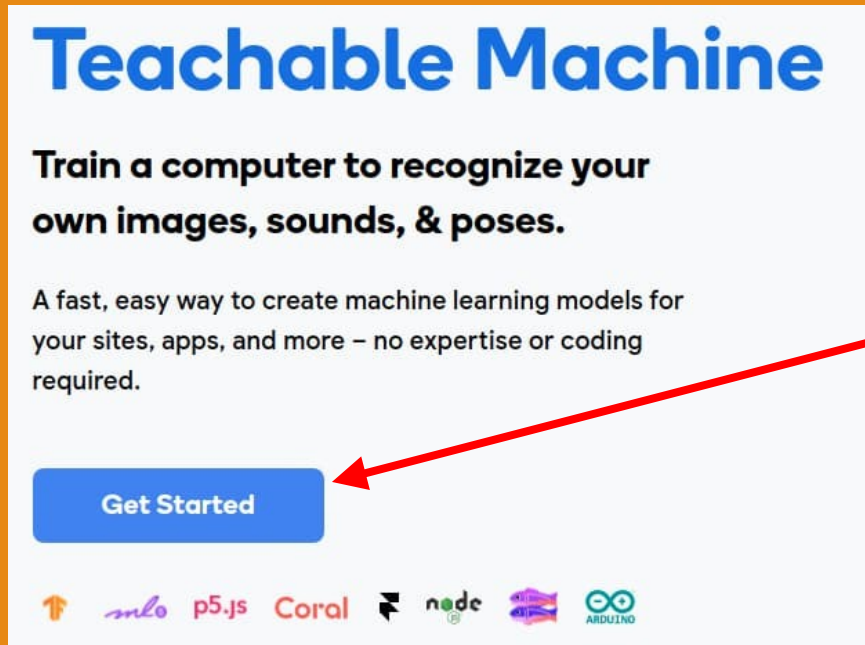
Audio Model

- Trains the machine to classify different types of sound

- Process:

    1) Provide samples of the sound

    2) Tell the machine what each sound means

    3) Teachable machine will train the model

    4) Use the model file in your program

Teachable Machine

- Open https://teachablemachine.withgoogle.com
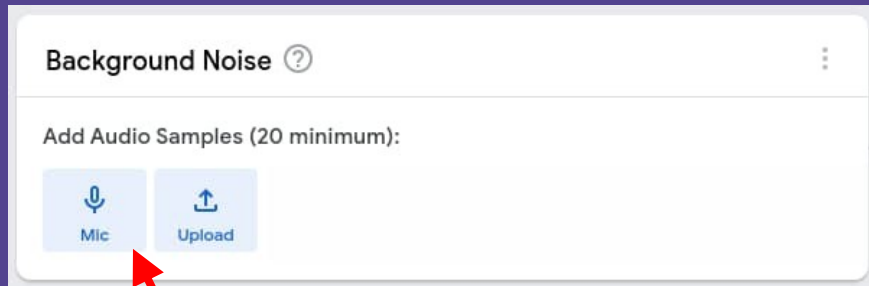

Click "Get Started"

Teachable Machine

- Select "Audio Project"
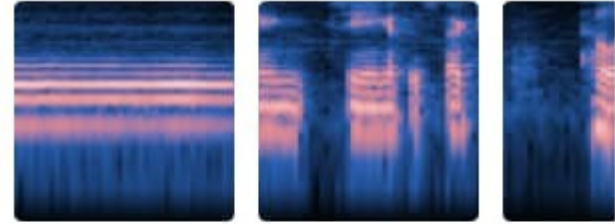
Audio Project

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

Background Noise

Background Noise ⑦

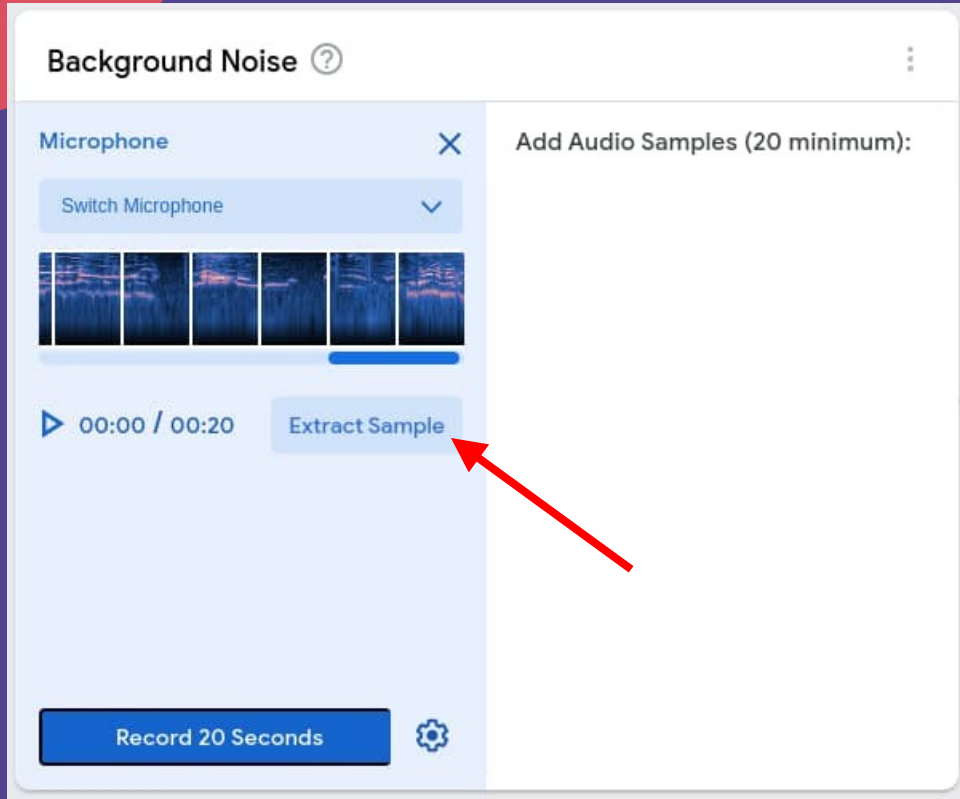Add Audio Samples (20 minimum):

🎤 Mic   ⬆ Upload

- Every audio project must have a "Background Noise" class

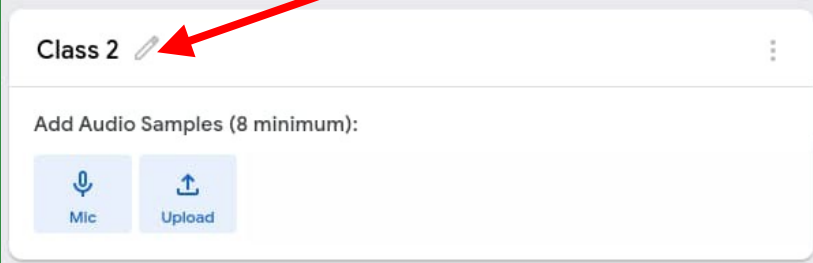# Background Noise
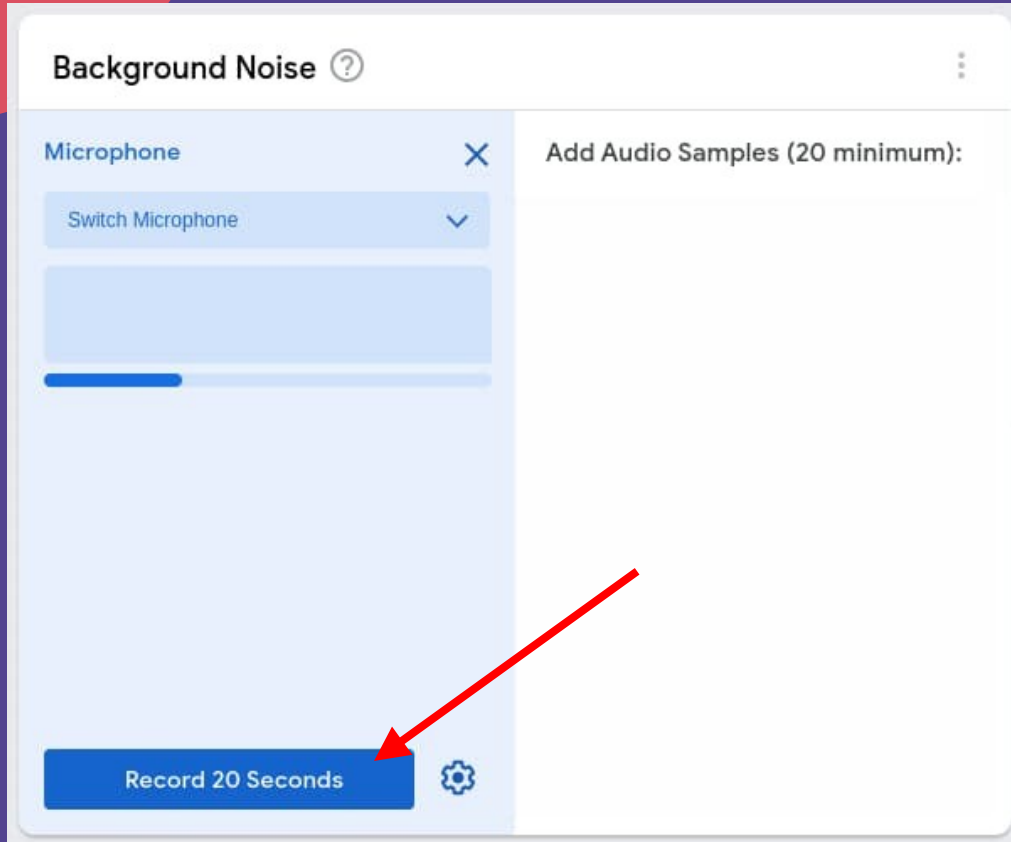
- Must provide at least 20 seconds

Background Noise

- "Extract sample" to break it into 20 x 1s long samples

Sample Audio

- Give your class a suitable name

- Add more classes if you require it
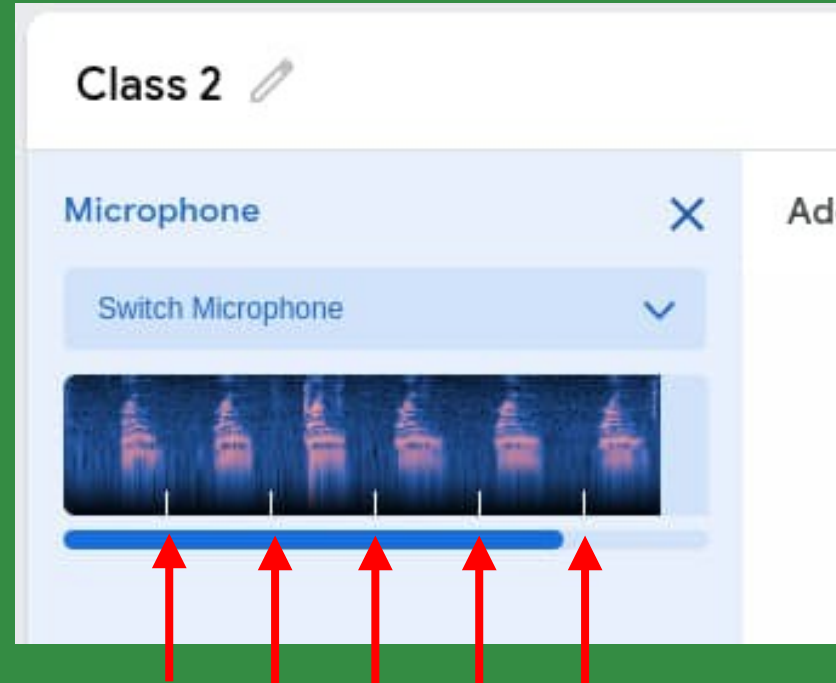
Sample Audio

- Click on the gear to change the settings

- Set it to a longer duration (8s or more)

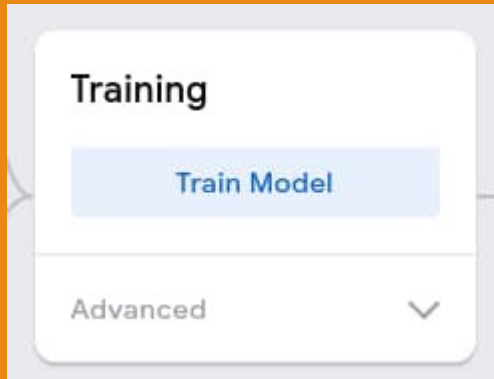- Not compulsory, but it's more convenient
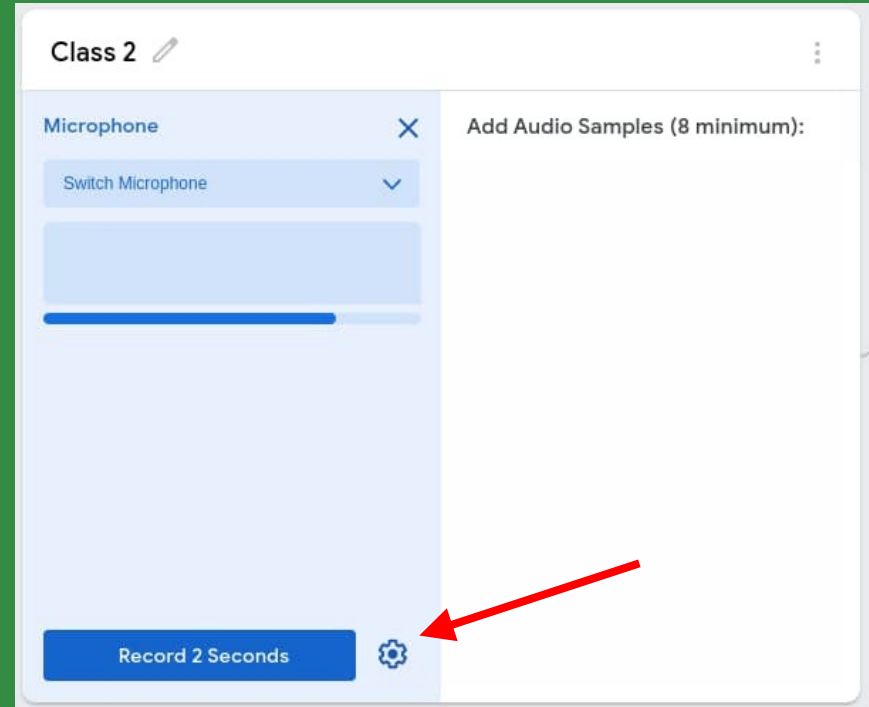
Sample Audio

- Say or produce the sound repeating it 8 times (...or more if you selected more than 8 seconds)

- Make sure the sound fits in between the white lines

Train and Test

- Train the model

- This may take a while to complete

Train and Test

- Test out the model

- Make sure it works correctly

- Record more samples / background noise if needed

- Will need to re-record background noise if using the model in a different environment

- Each sample is only 1 second long; it won't work well for long sentences

Audio Model Limitations

Hungry Princess

- Run around eating as many pizzas as possible within the time limit (30s)

- Control using voice commands
  - Princess moves the given direction until ordered otherwise

- New pizzas appear every 1 sec, and disappear after 3 sec.

- You can record more than 8 samples

- Try different intonation when speaking

- Try having samples from different people

- Avoid words that sounds alike (eg. "fish", "dish")

- As always, increasing epoch can help

Tips

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