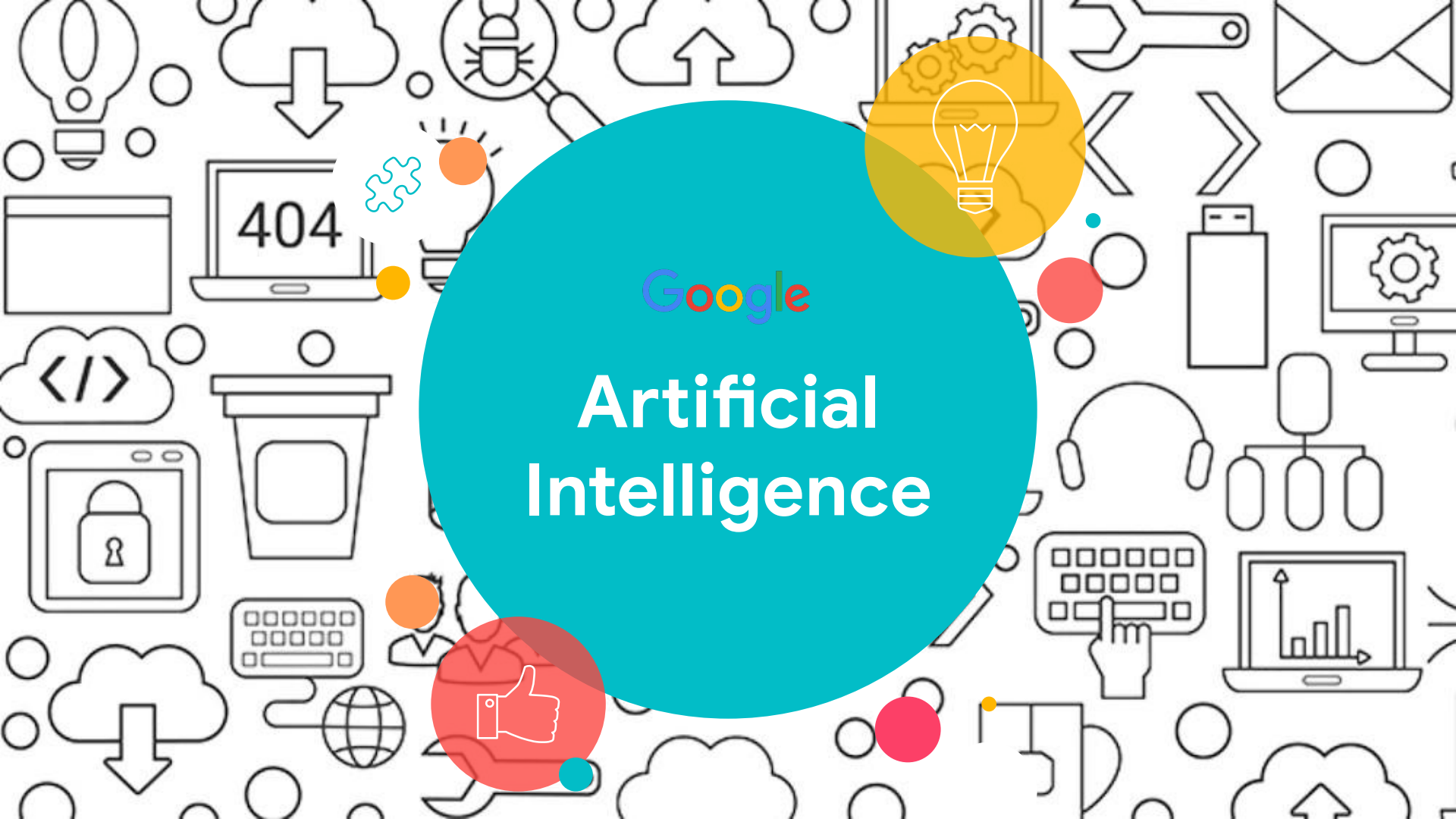
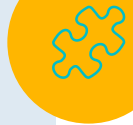

404
Google
Artificial
Intelligence

Hello

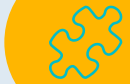
ChengCheng Tan

- Newport Beach, CA
- Linguistics & Computer Science
- Language Models & AI Safety
- Google Women Techmakers



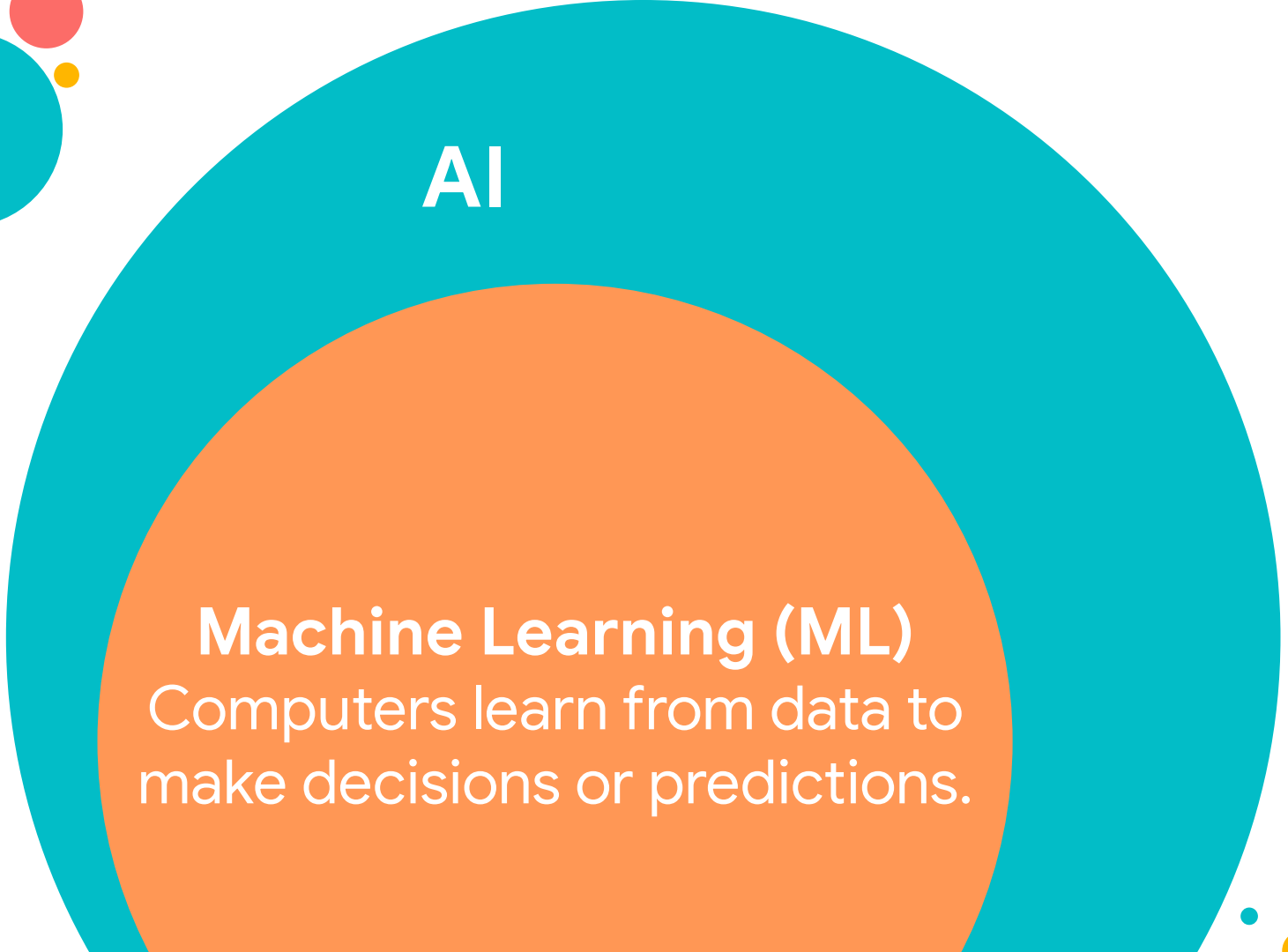
Today's **Tech Talk**

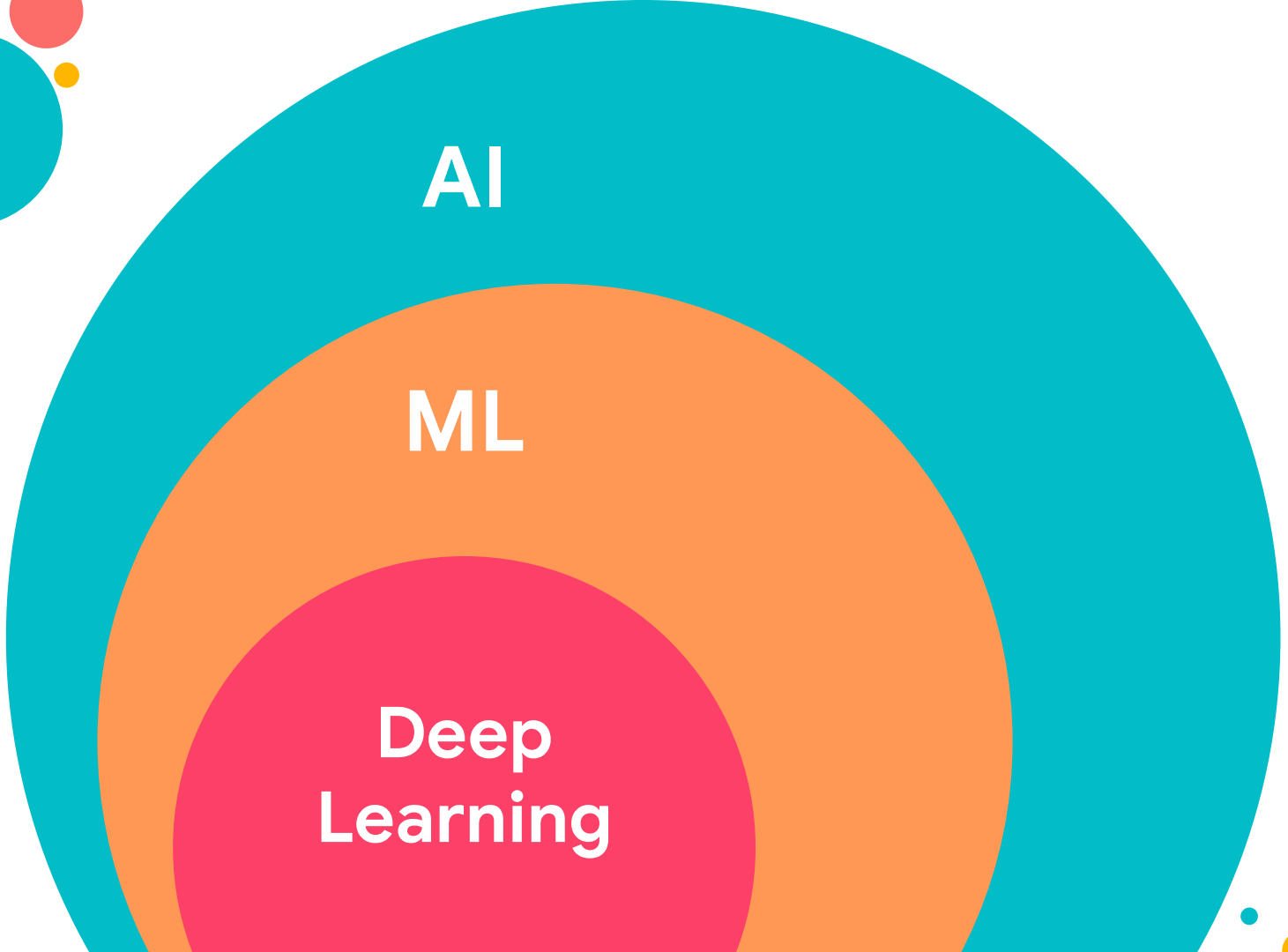
1. Artificial Intelligence
2. Machine Learning
3. Build an AI Model

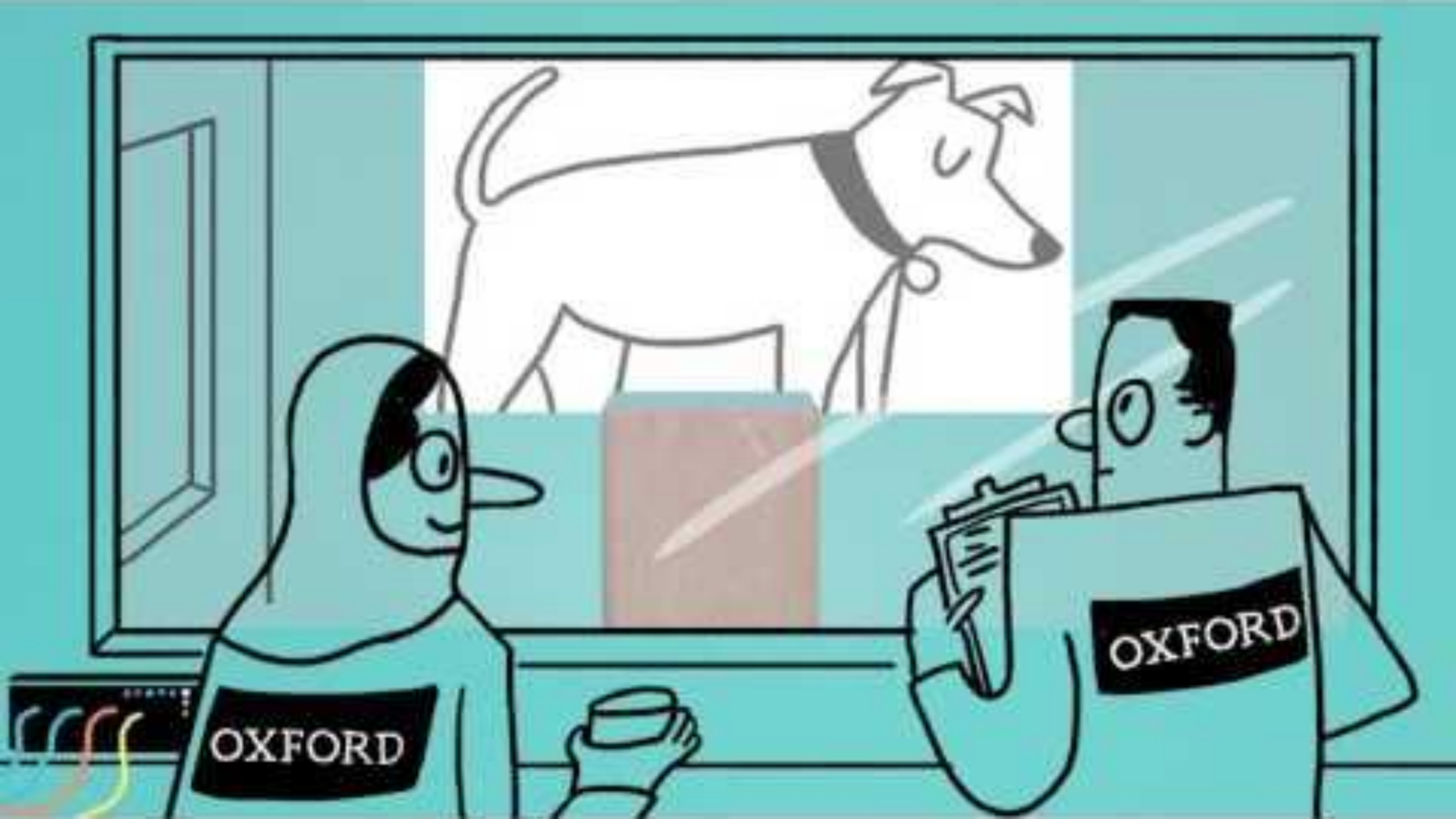


Artificial Intelligence (AI)

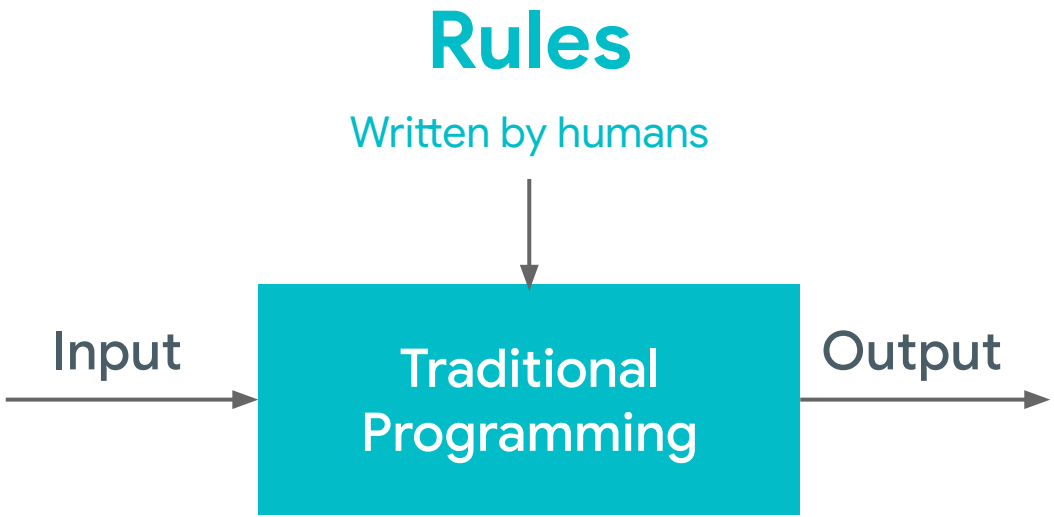
Teaching computers to think, learn & solve problems like humans.


AI
Machine Learning (ML)
Computers learn from data to make decisions or predictions.


AI
ML
Deep
Learning

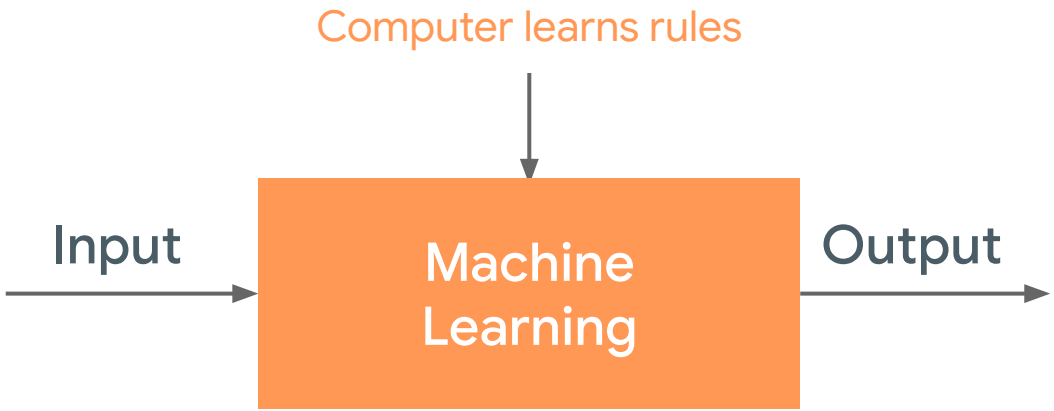

OXFORD
OXFORD

Old Way


Rules
Written by humans
Input
Traditional Programming
Output

New Way

Examples



Why the excitement NOW?

From 1950s, needed…

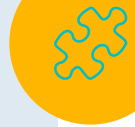
1. **Data:** Collected from internet
2. **Algorithms:** Better Math Methods
3. **Compute:** Faster Hardware GPUs

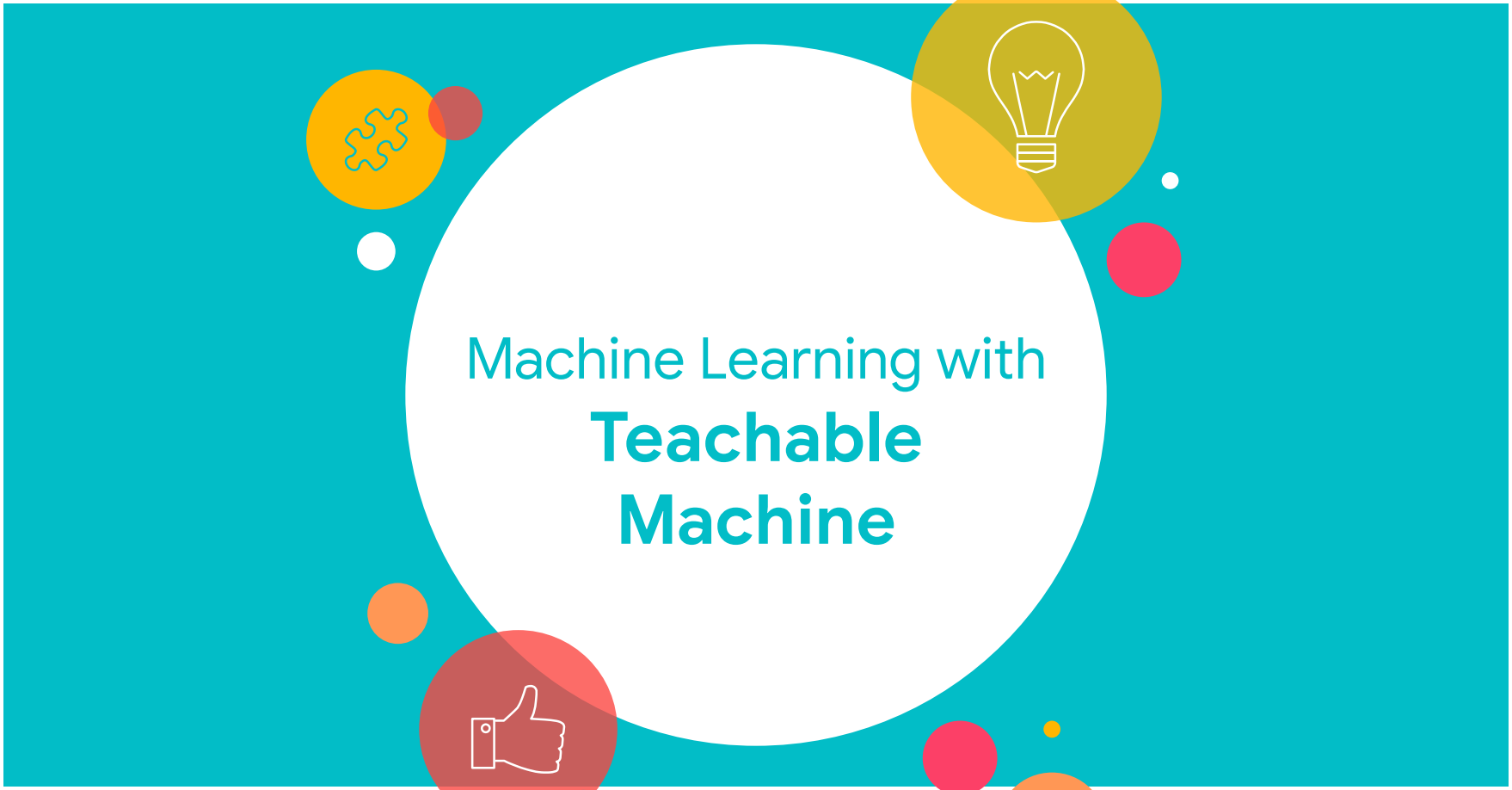
Some human to superhuman results!

Steps

1. **Data:** Collect Examples
2. **Train Model:** Learned Rules

   teachablemachine.withgoogle.com
3. **Inference:** Use the Model



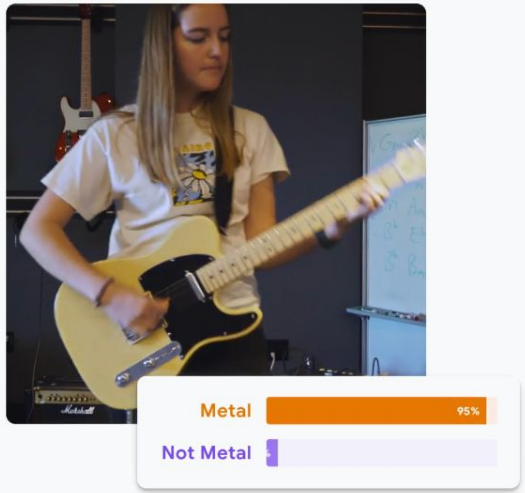

Machine Learning with
Teachable
Machine

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



What is Teachable Machine?

Teachable Machine

New Project

Open an existing project from Drive.

Open an existing project from a file.

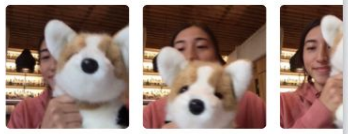
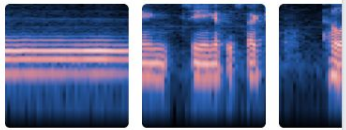


Image Project

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.

More coming soon

More models will appear here as they're developed.

Teachable Machine

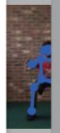
New Project

Open an existing project from Drive.

Open an existing project from a file.

In

Tea
file



New Image Project

Standard image model

Best for most uses

224x224px color images

Export to TensorFlow, TFLite, and TF.js

Model size: around 5mb

Embedded image model

Best for microcontrollers

96x96px greyscale images

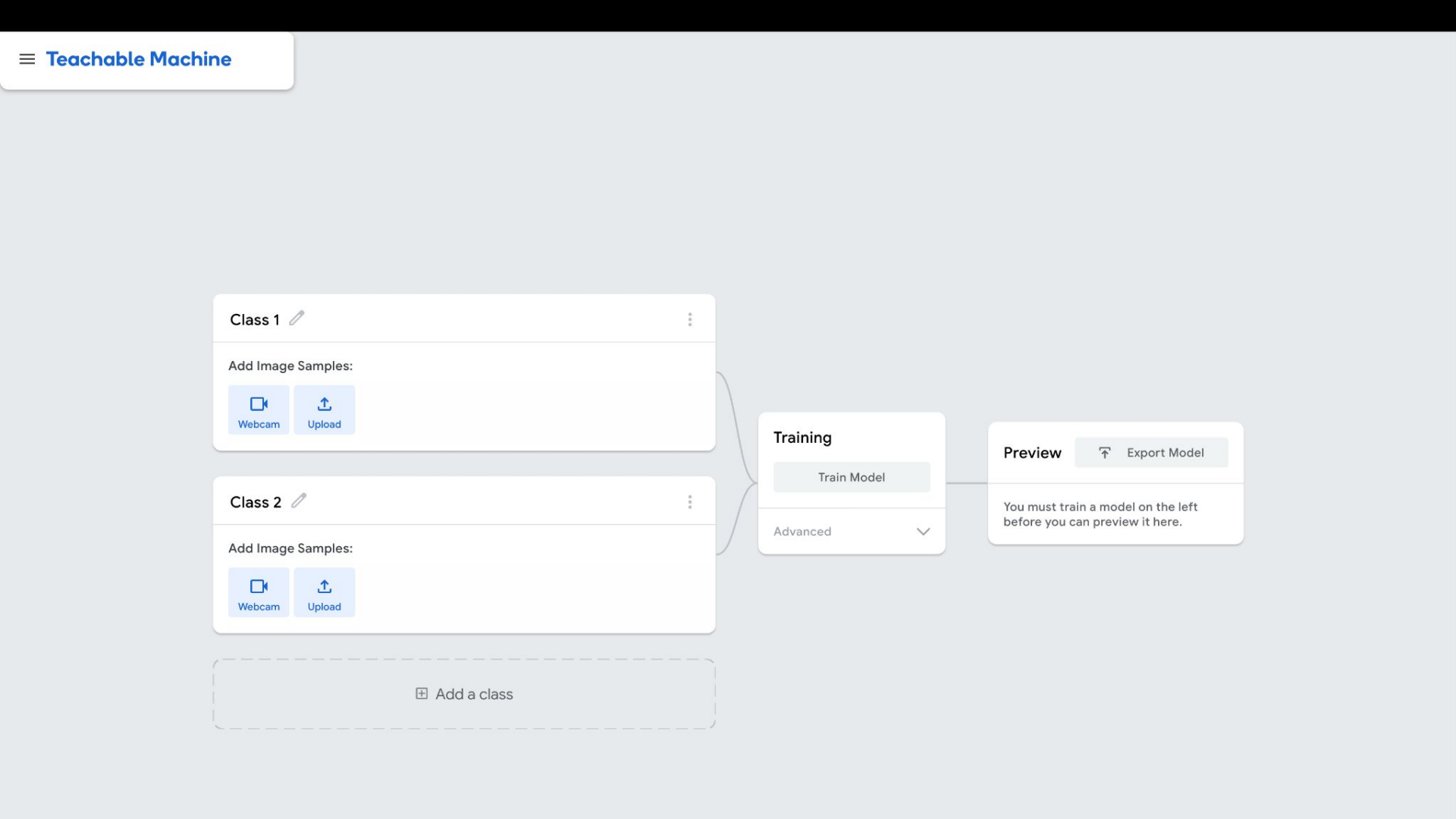
Export to TFLite for Microcontrollers, TFLite, and TF.js

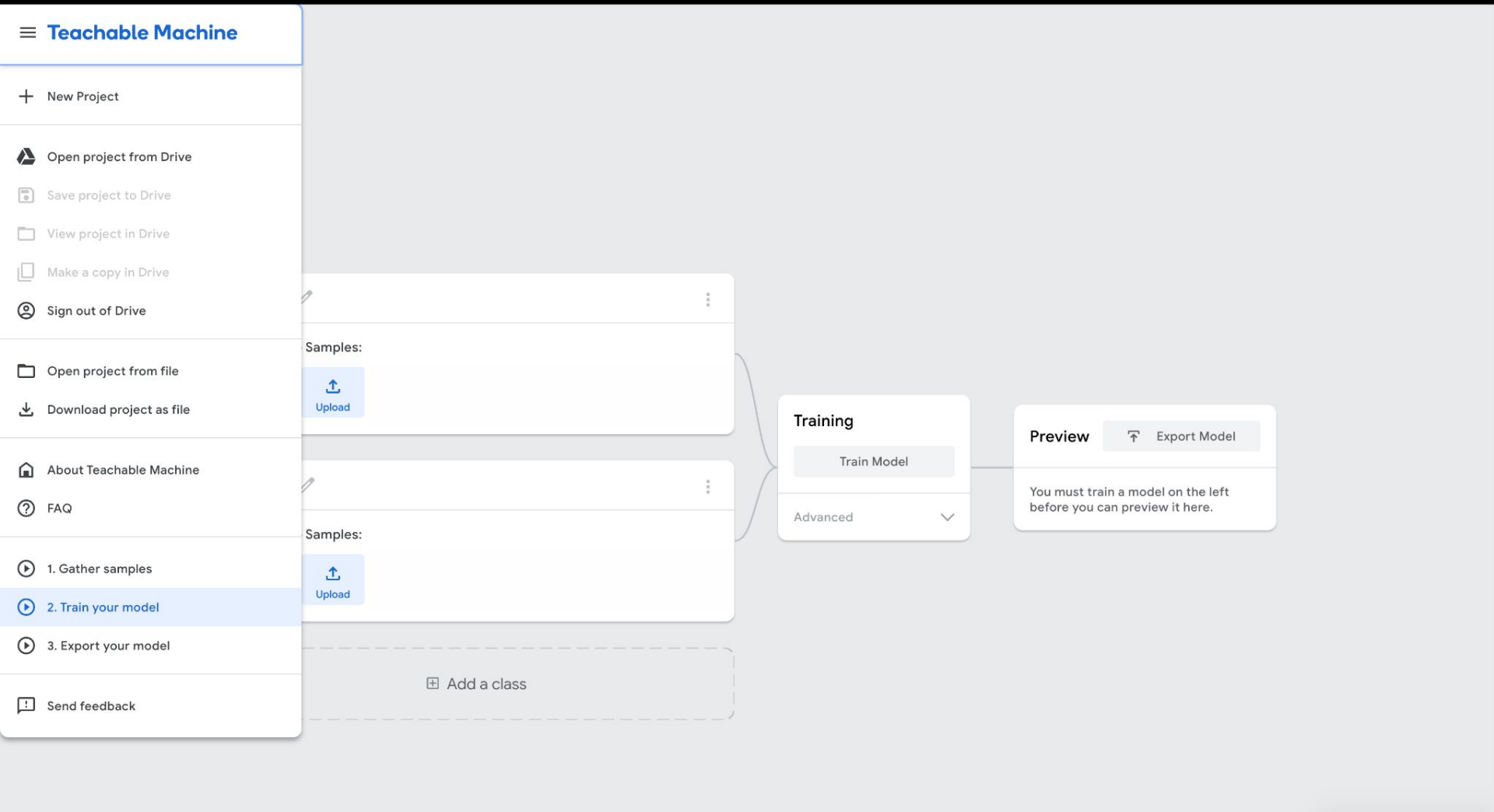
Model size: around 500kb

See what hardware supports these models.

More coming soon

More models will appear here as they're developed.


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.


Teachable Machine
New Project
Open project from Drive
Save project to Drive
View project in Drive
Make a copy in Drive
Sign out of Drive
Open project from file
Download project as file
About Teachable Machine
FAQ
1. Gather samples
2. Train your model
3. Export your model
Send feedback
Samples:
Upload
Samples:
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.

Teachable Machine

rock

115 Image Samples

Webcam Upload

paper

98 Image Samples

Webcam Upload

scissor

68 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.

Teachable Machine

Cat

50 Image Samples

Webcam Upload

Dog

50 Image Samples

Webcam Upload

Add a class

Training

Train Model

Advanced

Preview

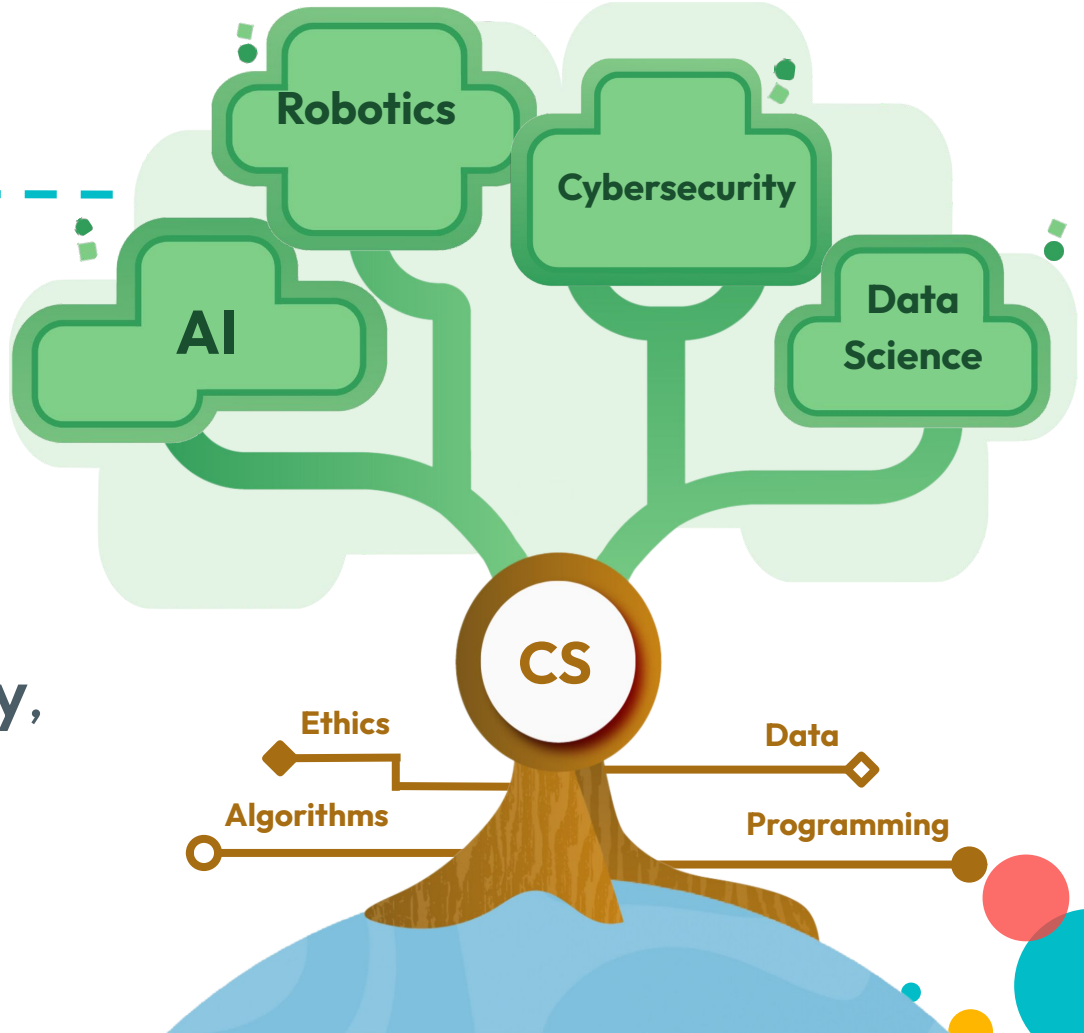
Export Model

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

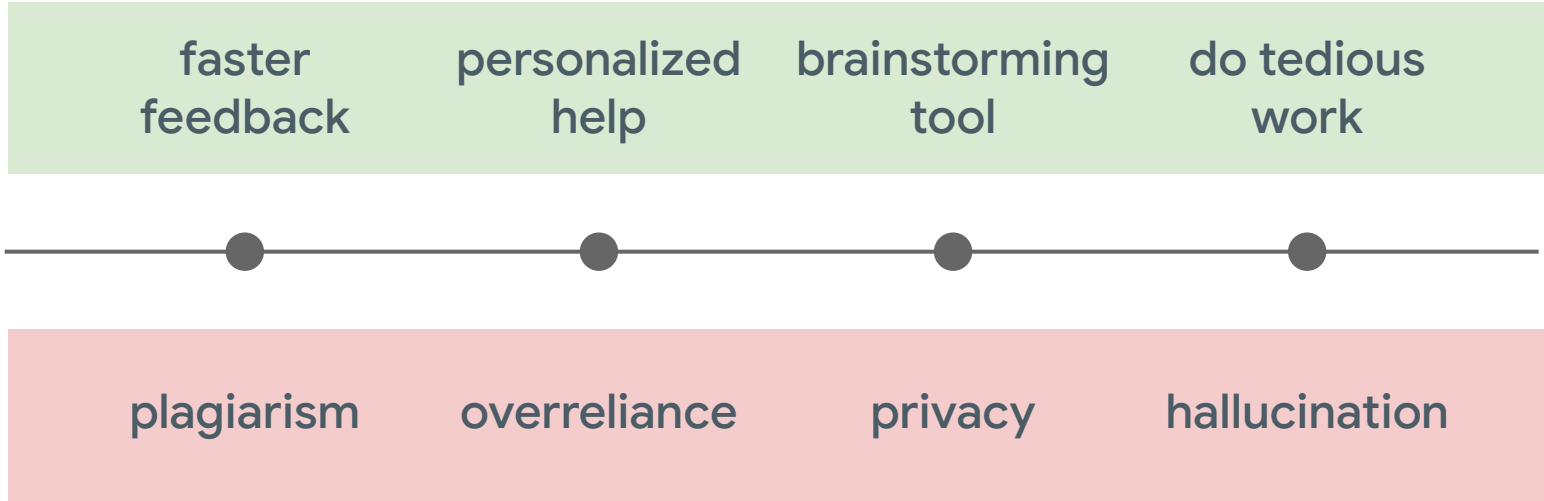
Big Ideas

Machine Learning is when computers learn sets of rules from examples, called models.

In an age of **AI**,
Computer Science
isn't just **mandatory**,
it is **foundational**



Benefits & Risks in AI



Principles

Purpose
Use AI to help all students achieve educational goals.

1

Compliance
Reaffirm adherence to existing policies.

2

Knowledge
Promote AI Literacy.

3

Balance
Realize the benefits of AI and address the risks.

4

Integrity
Advance academic integrity.

5

Agency
Maintain human decision-making when using AI.

6

Evaluation
Regularly assess the impacts of AI.

7

Thank you