

*****Adapted from Dancing with AI by MIT**
<https://dancingwithai.media.mit.edu/curriculum>



Movement and Visual AI

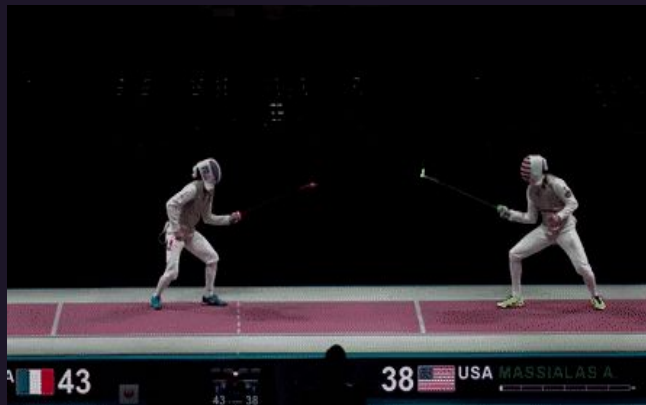
Yesterday was images and poses...



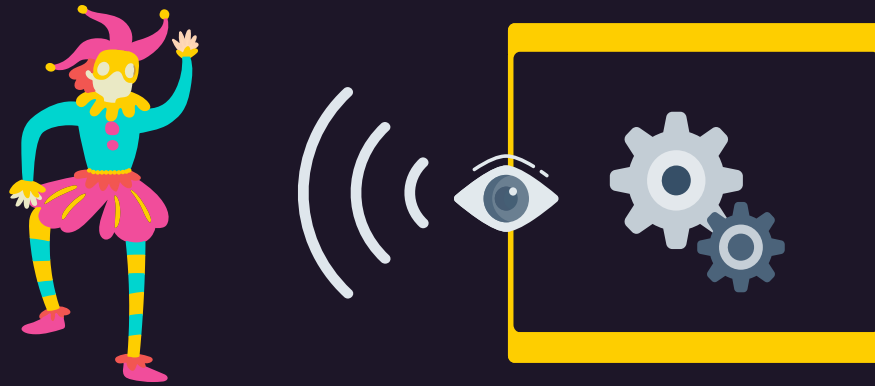
*Here's some
examples of
movement!*



We use motion for...



Can AI understand our movement?

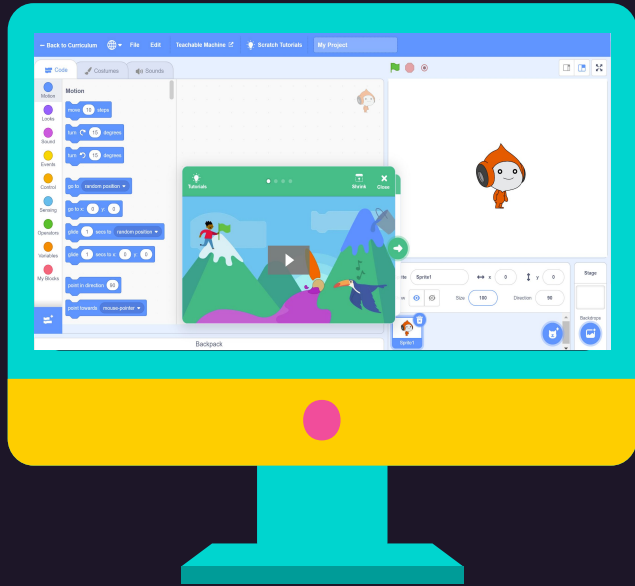


What do you think?

***It's time to code with
movement!***

***Has anyone heard of
Scratch?***

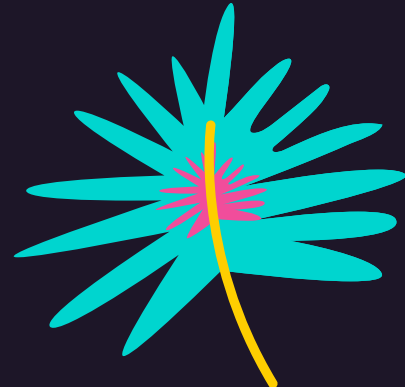




*Scratch is a tool for **creating**. We can use Scratch to make **stories, games, animations, art, music, and interactive AI systems**.*

Here's a quick intro to Scratch and the ways we'll be using it!

(Dancing with AI - Day 3, Slide 17)**

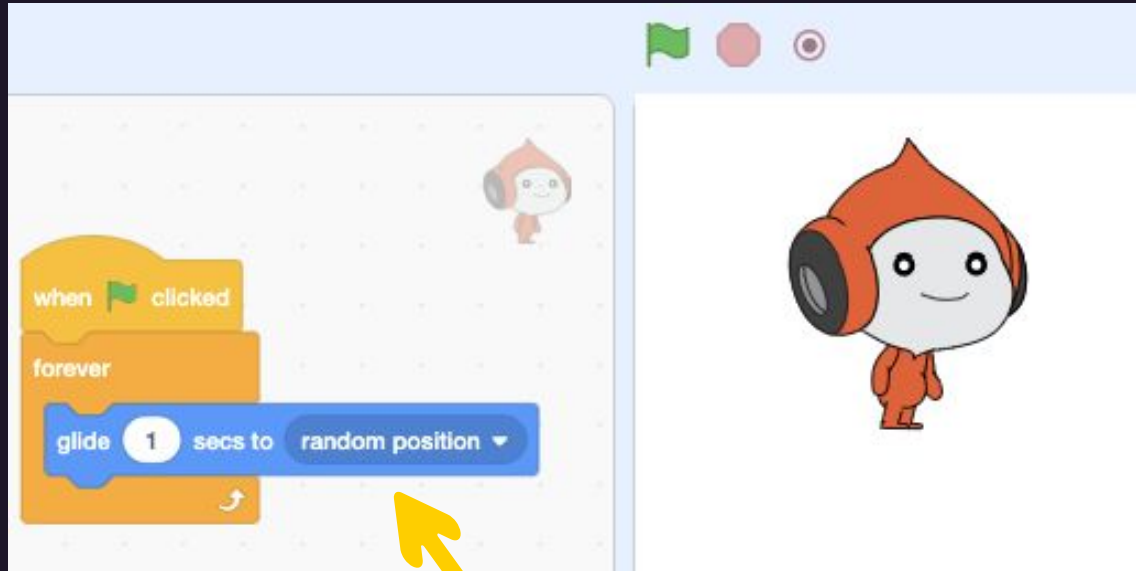


Block Programming

Start




Stop




Moving to random
position

(Dancing with AI - Day 3, Slide 18)**

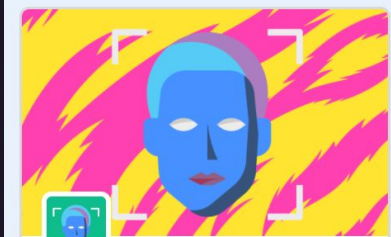
Pre-Trained Recognizing Models...but...



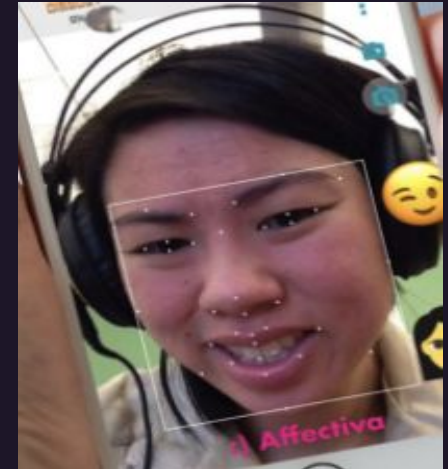
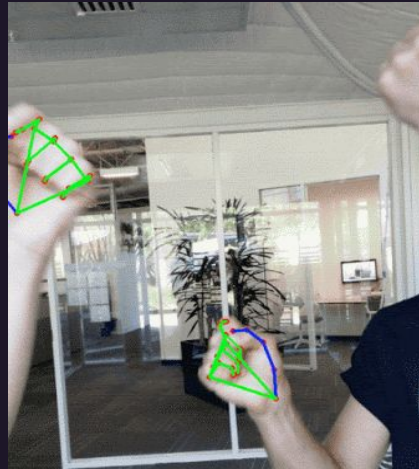
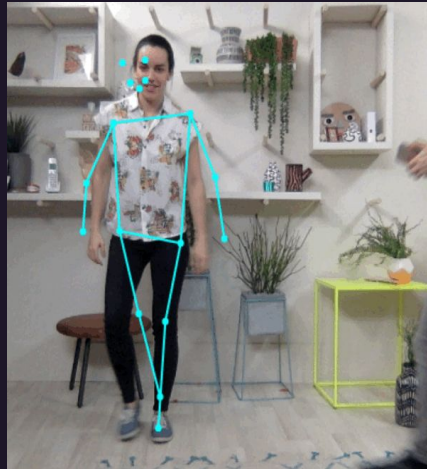
Body Sensing
Sense body position with the camera.



Hand Sensing
Sense hand movement with the camera.



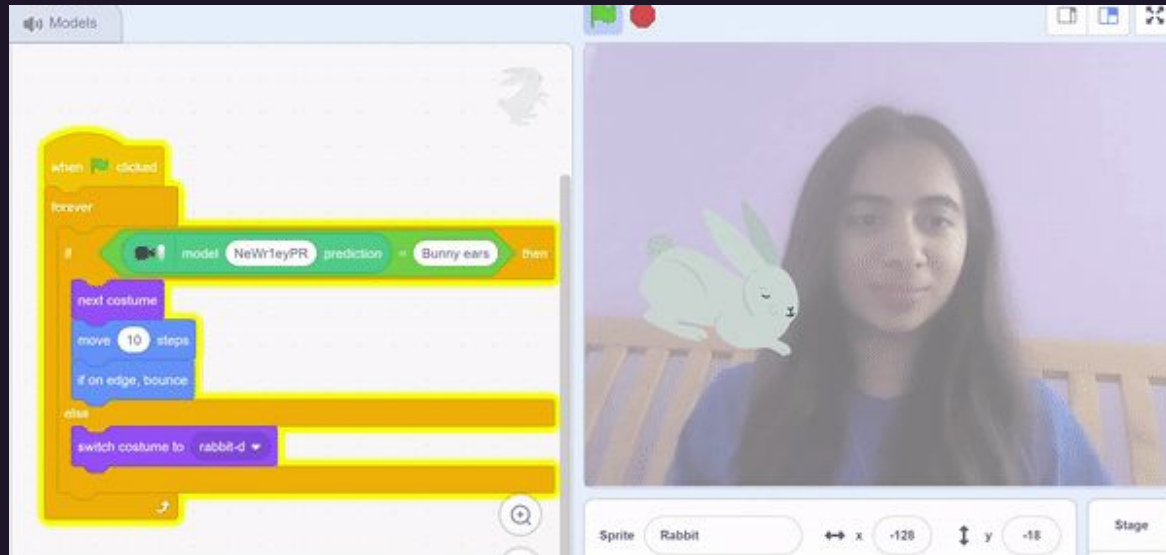
Face Sensing
Sense face movement with the camera.



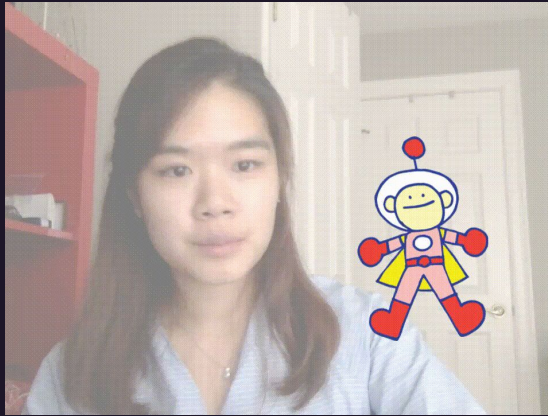
***you'll be
importing your
OWN trained
models!***



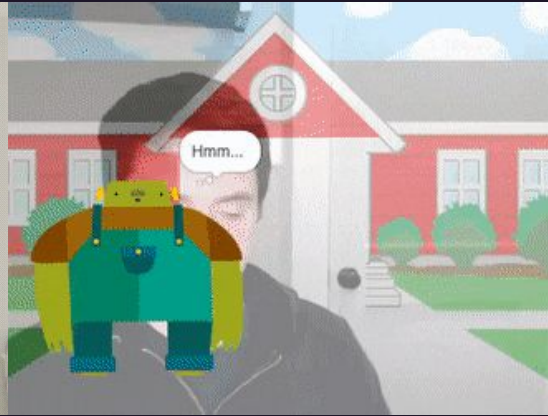
Using Teachable Machine, make and export your own custom model to recognize something



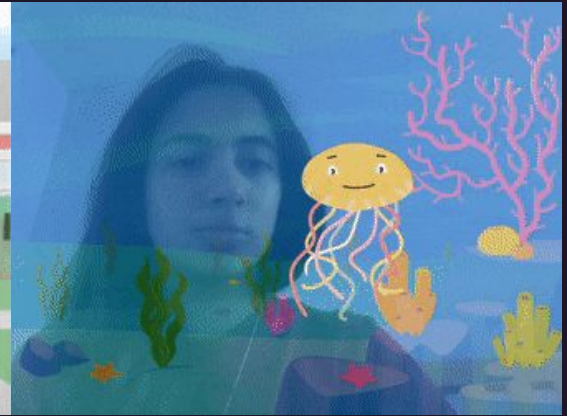
What types of models can we create?



This model detects if you're touching your face!



This model detects what type of recycling your trash should go to!



This model detects what emotion you're expressing!

***Shake
Break!***



Let's Try It!



- Go to <https://teachablemachine.withgoogle.com/train>
- Follow along with me as I walk us through a project called Shy Dog!



What do we want our prediction classes to be? Should we use an image or a pose representation?

Seeing What We Want to See



1. The AIs you created today are based on data of yourselves - what would happen if you **put on a mask or costume?**



2. What would happen if you **switched AI systems** with another student? Would your model work better/worse than with the mask?

Your model is going to behave differently - and maybe badly - as soon as it comes across data it can't recognize.

I'm So Happy to See You...Maybe?

I've just moved into a big, fancy apartment that I can't wait to show off to my friends. My door has an AI lock on it that I can program to open when it detects a **particular object** in front of it.

I take a bunch of pictures of **my happy, smiling face** and train the AI to open when it sees a **human face** based on those pictures.

What are some reasons why my lock might not open for my friends?



*Those reasons you came up with are examples of **AI bias** - another reason modern AI can fail in the real-world.*

*Bias is a BIG part of discussions on **AI ethics**.*

Great Job!



Acknowledgements and Attribution

This curriculum was adapted from “Dancing with AI” curriculum from the MIT Media Lab, licensed as CC-BY-NC under Creative Commons (link on slide 1). “Dancing with AI” was created by the Personal Robots Group at the MIT Media Lab.

Slides taken directly from “Dancing with AI” curriculum or those with few alterations are marked with a footnote, with the original slide identified.

All other slides are either created by Jazmin Collins (using templates and graphics from “Dancing with AI”) or largely altered from their original form to fit the “Movement and Visual AI” lesson plan.