POETRY TOGETHER
Embodied Poetry with Machine Learning

Handout for Creative Coding Utrecht - August 2022

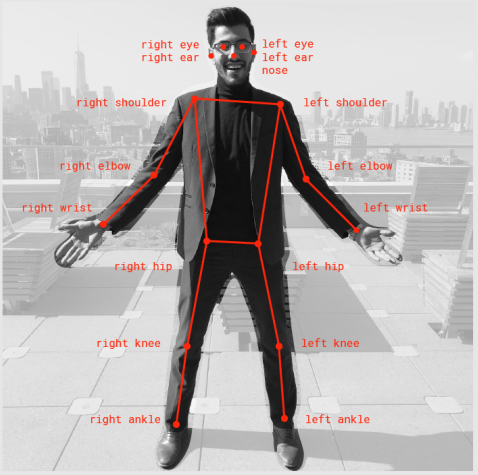
What is posenet?

https://blog.tensorflow.org/2018/05/real-time-human-pose-estimation-in.html

1. prediction of poses in the input
2. pose confidence scores,
3. keypoint positions,
4. and keypoint confidence scores

Pose Confidence Scores vs.
Keypoint Confidence Scores

17 Pose Keypoints
Returned by PoseNet



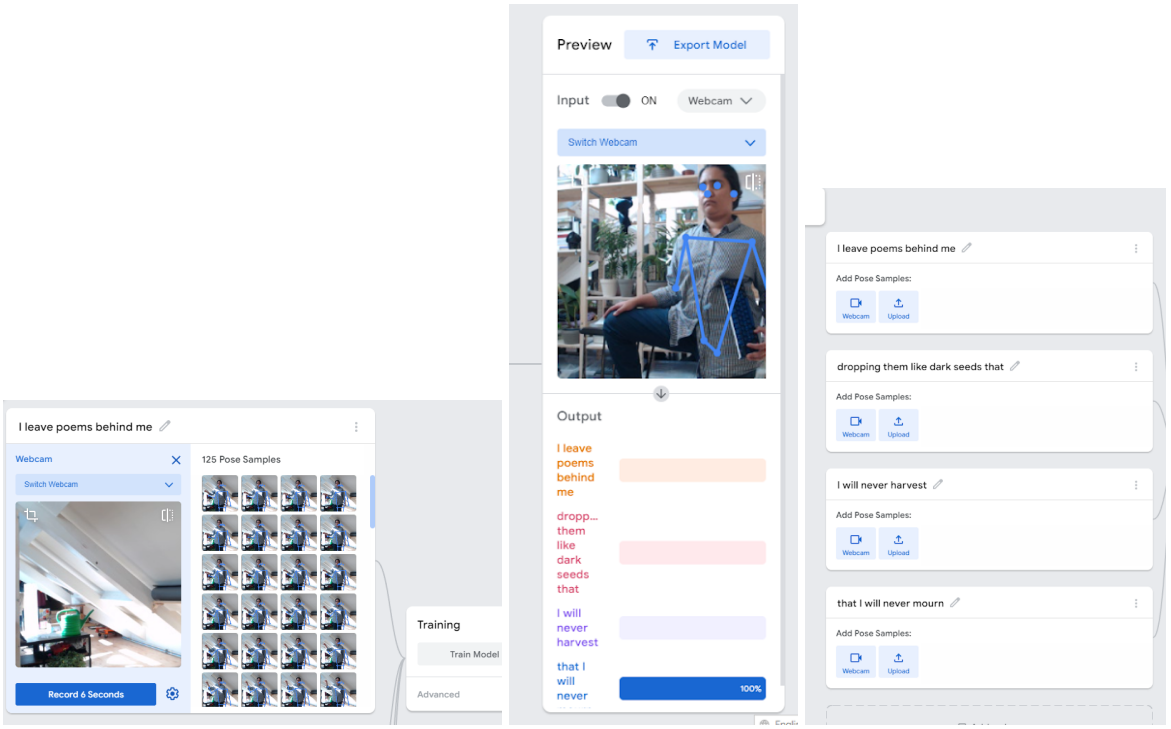
Teachable machines

- Open teachable machines
- Train three poses with a three line poem
- Save one thumbnail each from the poses (for the next step)
- Add to p5js sketch
- PLAY!!!

FROM “Touring”

I leave poems behind me
dropping them like dark seeds that
I will never harvest
that I will never mourn

AUDRE LORDE



https://teachablemachine.withgoogle.com/train/pose

Teachable machines sketch

- Open the link
- Make a copy of the project
- Use your posenet training link in the clone of the project
- Add your images

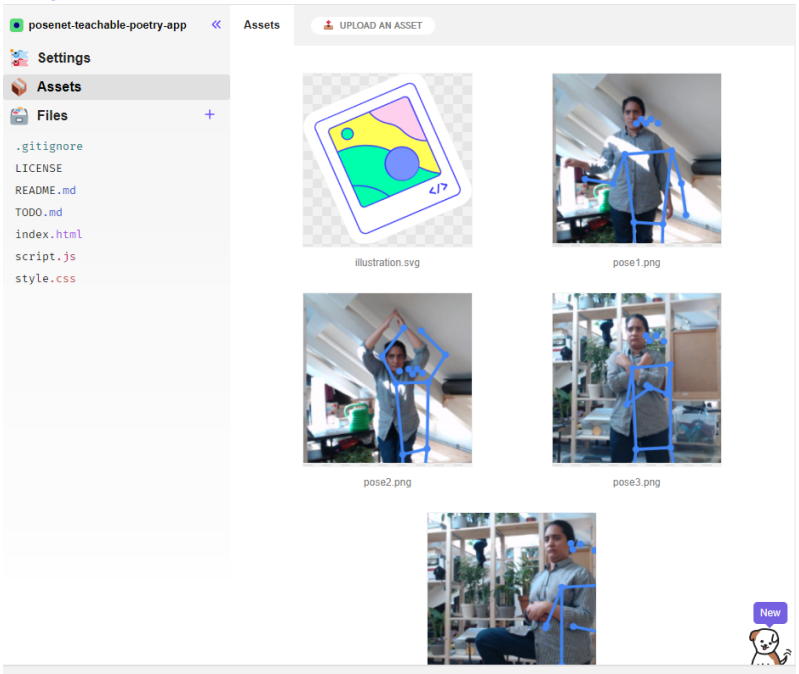
https://glitch.com/edit/#!/posenet-teachable-poetry-app?path=index.html%3A37%3A0

STEPS TO FOLLOW

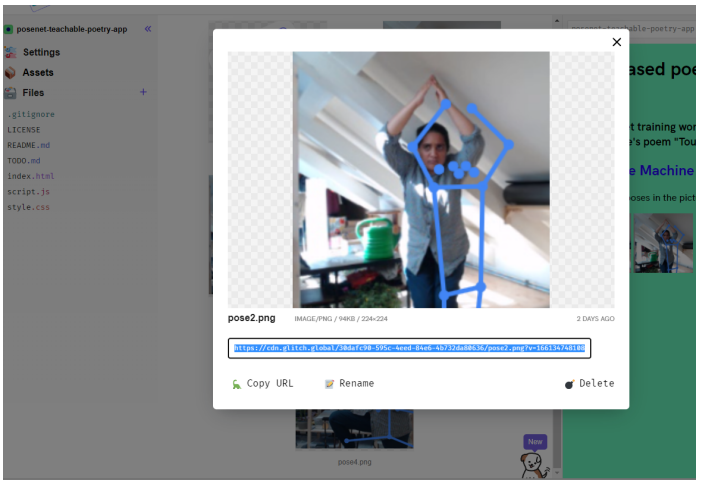
1. Change the link here in the script.js file:

```
// the link to your model provided by Teachable Machine export panel
const URL = "https://teachablemachine.withgoogle.com/models/0AY-2cvEY/";
let model, webcam, ctx, labelContainer, maxPredictions;
```

Add your thumbnails in the ASSETS section:



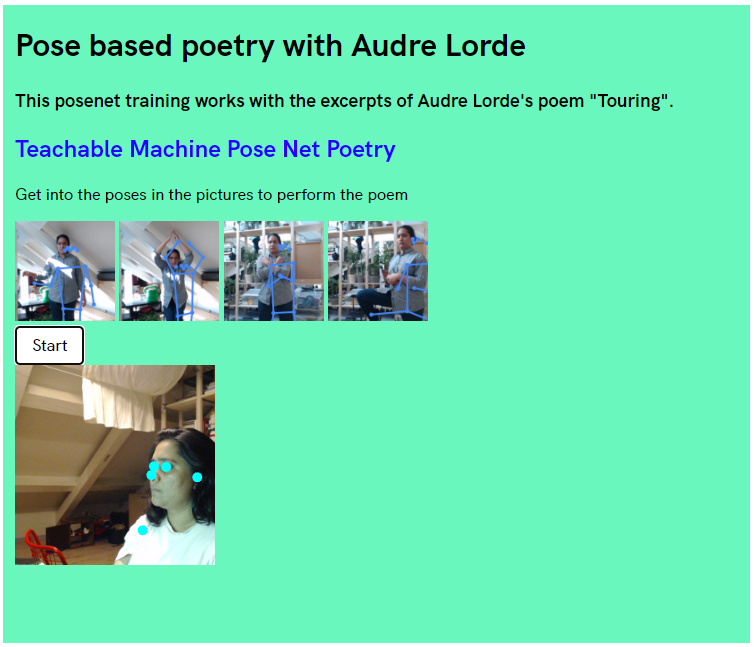
2. Copy the URL for the image that you uploaded:



3. Replace each of the links for each of the thumbnails:

```
<div id="thumbnails">
  <img
    src="https://cdn.glitch.global/30dafc90-595c-4eed-84e6-4b732da80636/pose1.png?v=1661347481081"
    alt="thumbnail of person posing with posenet keypoints on their body"
    width="100px"
  />
  <img
    src="https://cdn.glitch.global/30dafc90-595c-4eed-84e6-4b732da80636/pose2.png?v=1661347481081"
    alt="thumbnail of person posing with posenet keypoints on their body"
    width="100px"
  />
  <img
    src="https://cdn.glitch.global/30dafc90-595c-4eed-84e6-4b732da80636/pose3.png?v=1661347481603"
    alt="thumbnail of person posing with posenet keypoints on their body"
    width="100px"
  />
  <img
    src="https://cdn.glitch.global/30dafc90-595c-4eed-84e6-4b732da80636/pose4.png?v=1661347482712"
    alt="thumbnail of person posing with posenet keypoints on their body"
    width="100px"
  />
</div>
```

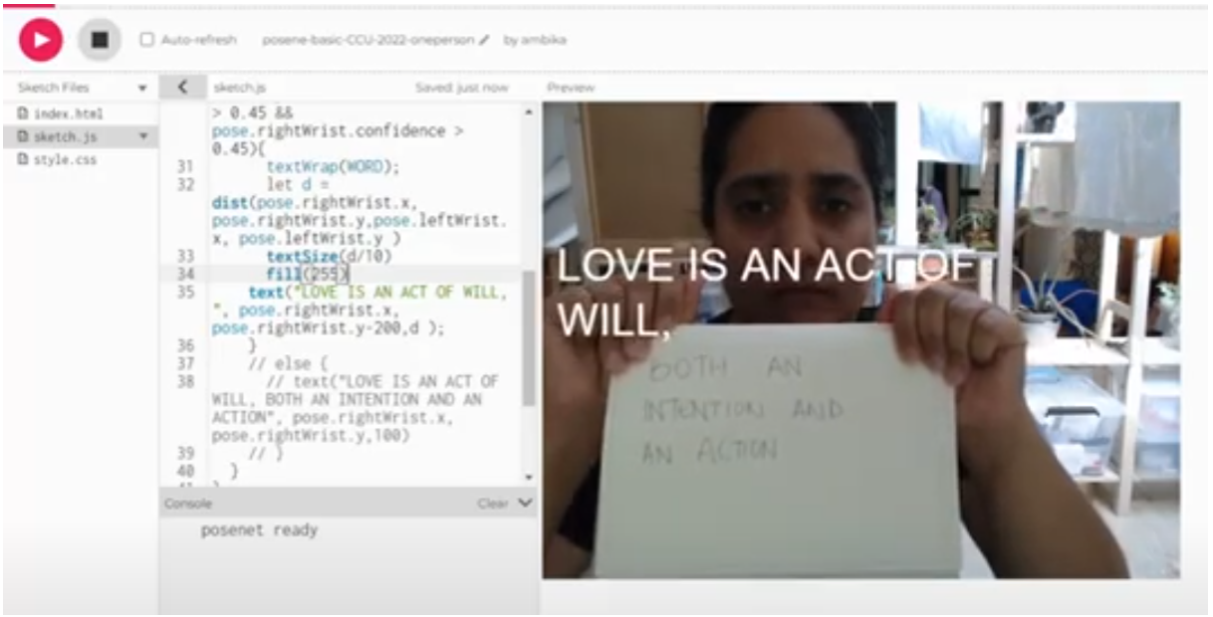
4. You can now try the poses by pressing the start button and the text will appear below the webcam window, if you can imitate the poses.



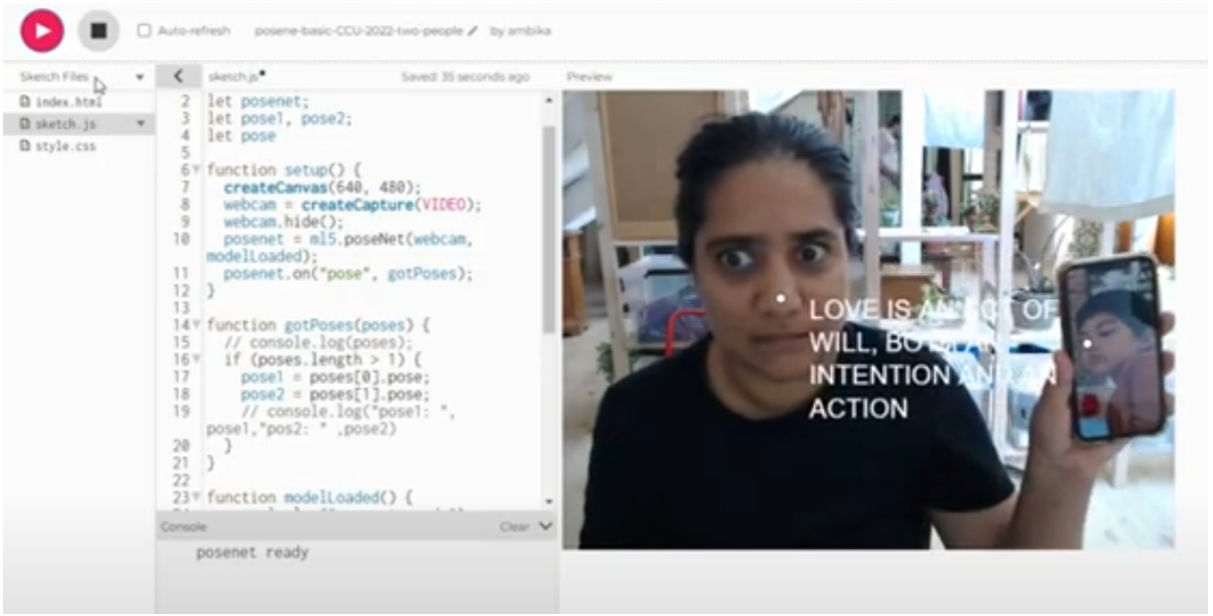
Using posenet with p5js (single person)

- Setup webcam
- Add ml5 library in index.html
- Initialise posenet in the setup() function
- Creating callback - model loaded
- Use posenet.on method for pose detection
- Identify the pose keypoint that you want for your movement
- Add the text and if statement
- Add dist function
- Add Flip Camera function
- Build your analog text card
- PLAY!!

https://editor.p5js.org/ambika/sketches/nSyIG-UCO



Using posenet with p5js (two people)

- Identify the poses nomenclatures for more than one pose estimation
- Use the distance function to create the space for the poetry
- Build your analog cards
- PLAY!!

https://editor.p5js.org/ambika/sketches/C2wUeZQZ_