# Pose Detection

*Detect your pose in the computer's camera and control a robot puppet.*
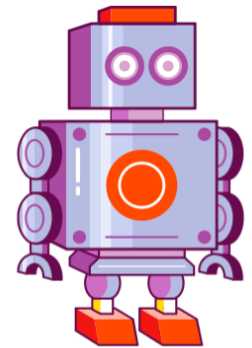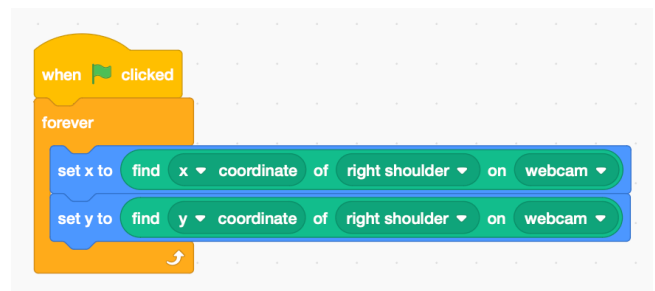
Open **https://scratch.machinelearningforkids.co.uk**
(you can't login like normal Scratch)
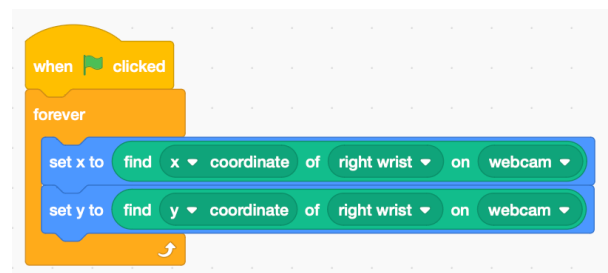- Press the Add Extension button and add the **Pose Detection** extension.

- Create a new sprite and choose the '**retro robot**'.
- Open the costume editor. All we need is the robot's arm.
- Use the **select** arrow and click on the arm to its left, and drag it away from the body.
- Use the select arrow to draw a **selection box** around the rest of the body and delete it.
- Drag the arm to centre the sprite on the shoulder.
- Add code to align the arm with your **right shoulder**.
- Adjust the size to match your own – about 350%
- Rename it '**right arm**'.

```
when clicked
forever
  set x to (find x coordinate of right shoulder on webcam)
  set y to (find y coordinate of right shoulder on webcam)
```

*Control the robot like a puppet so that when you move your arm, the robot arm follows.*

- Create a new sprite with the Paint tool, and leave it blank so it's invisible.
- Copy the code from the arm and change it to follow your **right wrist**.
- Rename it '**right wrist**'

```
when clicked
forever
  set x to (find x coordinate of right wrist on webcam)
  set y to (find y coordinate of right wrist on webcam)
```

- Edit the costume for the **right arm**. Using the selection arrow, draw a selection box around the whole arm.
- The little curved arrow at the bottom lets you rotate the arm. Rotate it to make it horizontal.
- Drag the whole arm so that the shoulder is at the centre again.
- Now make the arm **point towards** the **right wrist** by adding this code inside the loop of the **right arm**.
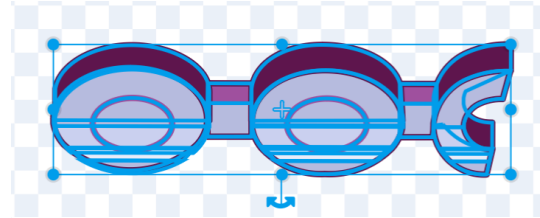
**The arm at an angle of zero degrees**
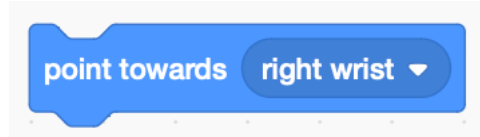
*Duplicate both sprites to make a **left arm** and **left wrist**.*
*Change the code of both sprites to make it work on the left.*

## *Get a head*
- Create a new sprite and choose the '**retro robot'** again.
- Open the costume editor. All we need is the robot's head. Use the select arrow to draw a selection box around the head and eyes.
- Drag the head and eyes away from the body.
- Use the selection arrow to select the rest of the body and delete it.
- Move the head and eyes to the centre of the sprite.
- Add code to centre the head on your nose.
- Rename the sprite as '**head**' and adjust **size** so that it covers your own head.
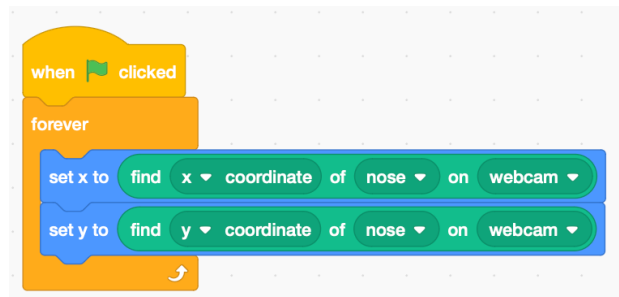
*Do the same for the body, and align one corner with your left or right shoulder.*

- To make it look right, add code to bring the right arm to the front layer, and send the left arm to the back.
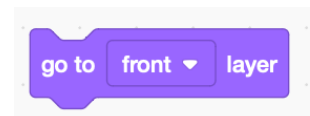
*Your code isn't saved to Scratch. **Save it on a USB drive.***