

# Mirror | Mrrrior

## Abstract

This project deals with the perception of an individual by a machine learning model. It asks us to consider our own reflection and how we present ourselves to others, including machines.

## Concept and Research

Our identities are punctuated through our perception of self. When we look at a mirror, what do we see?

Arguably, we see ourselves. What about a mirror that distorts our reflection and compresses our body? We'd recognize the reflection as our own, but we understand it's not the way we normally look. This process of seeing, perceiving, and ultimately recognizing repeats every time we come across an image or reflection in our likeness.

But while we might understand ourselves in this light, what might a machine see? It would depend on what the machine is looking for. One of these identifiers might be through our pose and, in turn, our actions. Another one of these might be through our physical traits, such as hair color, height, skin tone, etc. Or perhaps, the machine focuses on the silhouette of the figure standing before it.

These two ways of seeing and perceiving are intertwined in this project, through the act of reflecting and observing. The user faces a mirror, which bears the resemblance of the person. The mirror, which also houses the machine, as well as a camera, captures data about the person and stores it for future reference. Within this mirror, one would not only see themselves, but also constantly updating strings of text which carry the description of past "reflections," or perceptions by the machine.

## Experience and Production

I initially thought up the idea for this project at The Met, where I came across a centuries-old mirror. While I was looking at my reflection through this mirror, I wondered about all those who have looked into this same mirror. And in the thought proceeding that, I considered how the mirror had actually seen all these people before. In this layered tapestry of seeing and perceiving, I recognize myself through the mirror, but the machine is actually seeing me for the first time. For this project, the audience should feel this interplay between observing and being observed. They should feel, as they look into the mirror, the lasting impressions of those who came before them, but from the machine's perspective.

Step 1 - Set up YOLO & PoseNet and test out with a laptop webcam. The detection should be specific objects within the frame to construct the environment around the viewer, and PoseNet will determine the actions of the users, both to be inputted into the database and referred back to at any time. The output results will play back on the screen.

Step 2 - Construct mirror with two way film and plexiglass or glass. Take old monitor and mount it behind the mirror. Display text and ensure visibility through the mirror. The reflection of the viewer should be visible as well.

Step 3 - Integrate camera into the frame of the mirror. Test out the algorithms.

## BRAINSTORMING

Not a generative project, but an interpretive one.

### Types of Observations

#### Shirt color

- Color from point generated as the midpoint between right and left shoulder, but subtract a Y value to lower point towards torso

#### Head tilt angle

- Angle determined by line between right and left eye

#### Head turned

- Distance from nose to ear determines which way the head is turned

#### Hand raised

- Wrist Y value greater than shoulder Y value

#### Arms crossed

#### Hand position

- Provides wrist position at X and Y value

#### Winking

#### Body Turned

- If distance between right shoulder and right elbow is less than distance between corresponding left side, then the body is facing in a direction