

# Device Art: Final Project

Spring 2025

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**Mirror Selfie**  
Acrylic, chipboard, electronics  
12 x 18 in

# Concept

Everyday object: Mirror

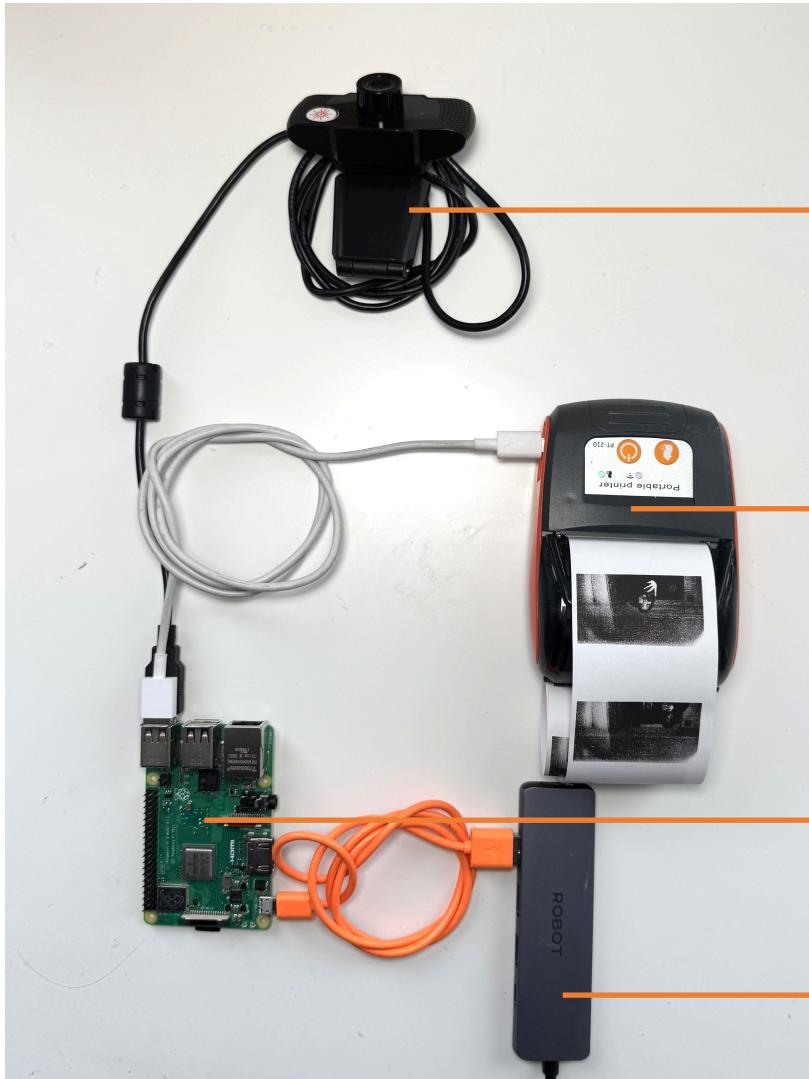
In this project, I explored the interaction between people and mirrors. When walking by a mirror, I noticed that a lot of people tend to subconsciously stare at it to check their own appearance or to take mirror pictures. However, after I learnt about spy mirrors or two-way mirrors, I felt more cautious interacting with mirrors due to my paranoia of being spied on.

For this project titled “Mirror-Selfie”, I am embodying my fear of being stared back at by the mirror or anything behind the mirror. Using a camera with the OpenCV Python library, I detect faces and print out a frame of the moment when anyone looks into the mirror.



2 way mirror

Chipboard backing



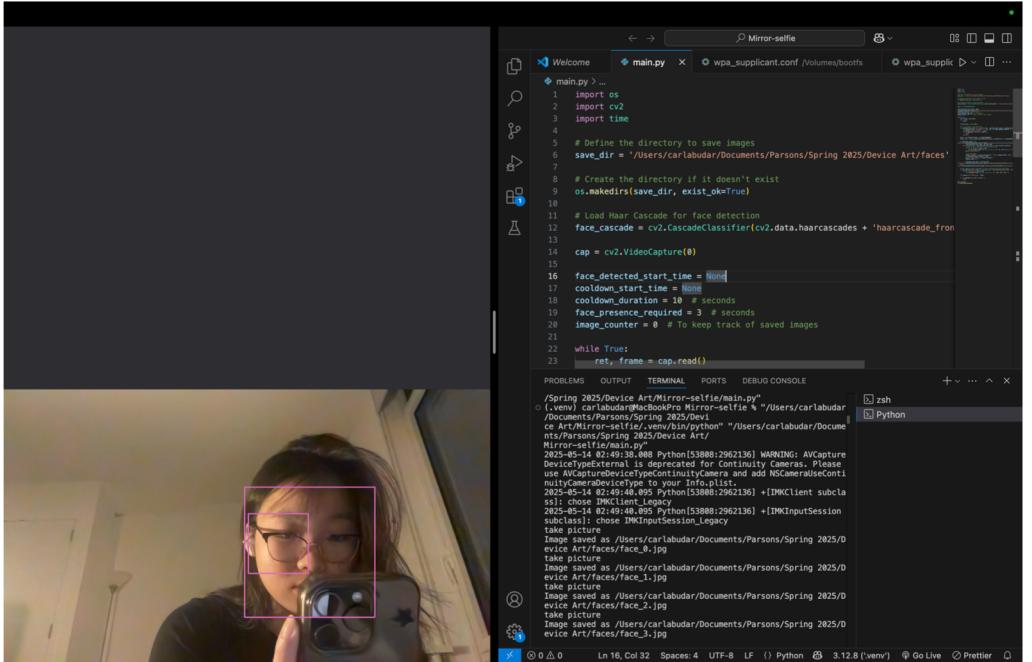
Camera

Thermal printer

Raspberry Pi

USB to USB C connector

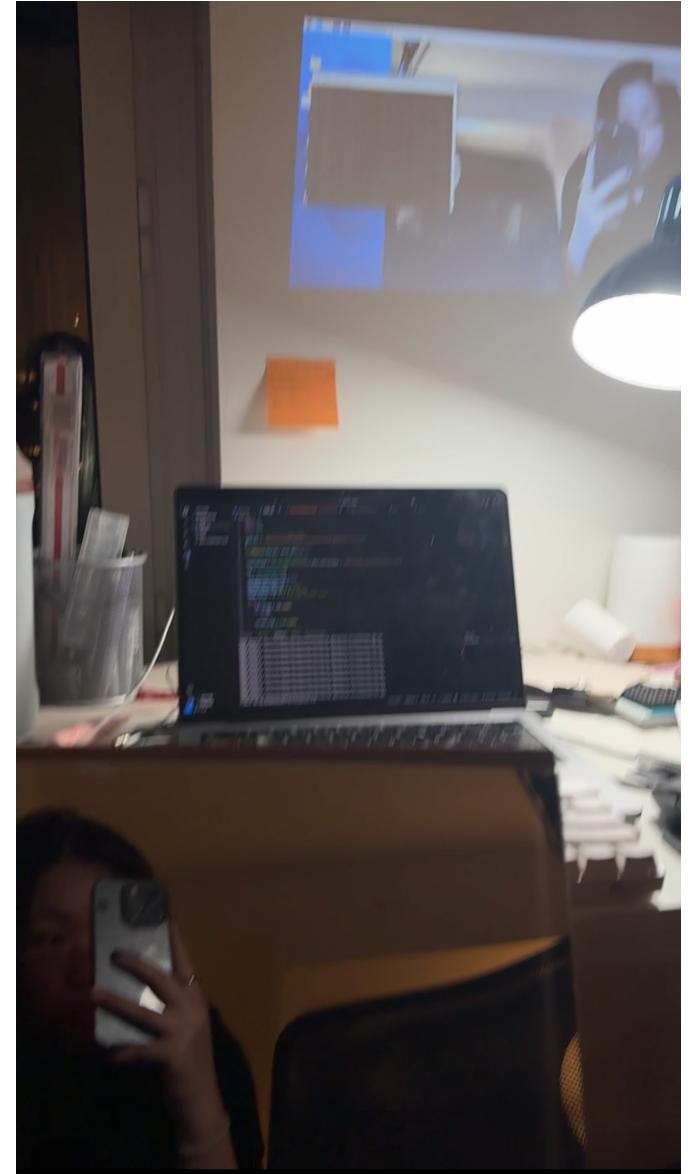
# Process



# OpenCV face detection on laptop



# Face detection in RPI



## Testing 2 way mirror + camera



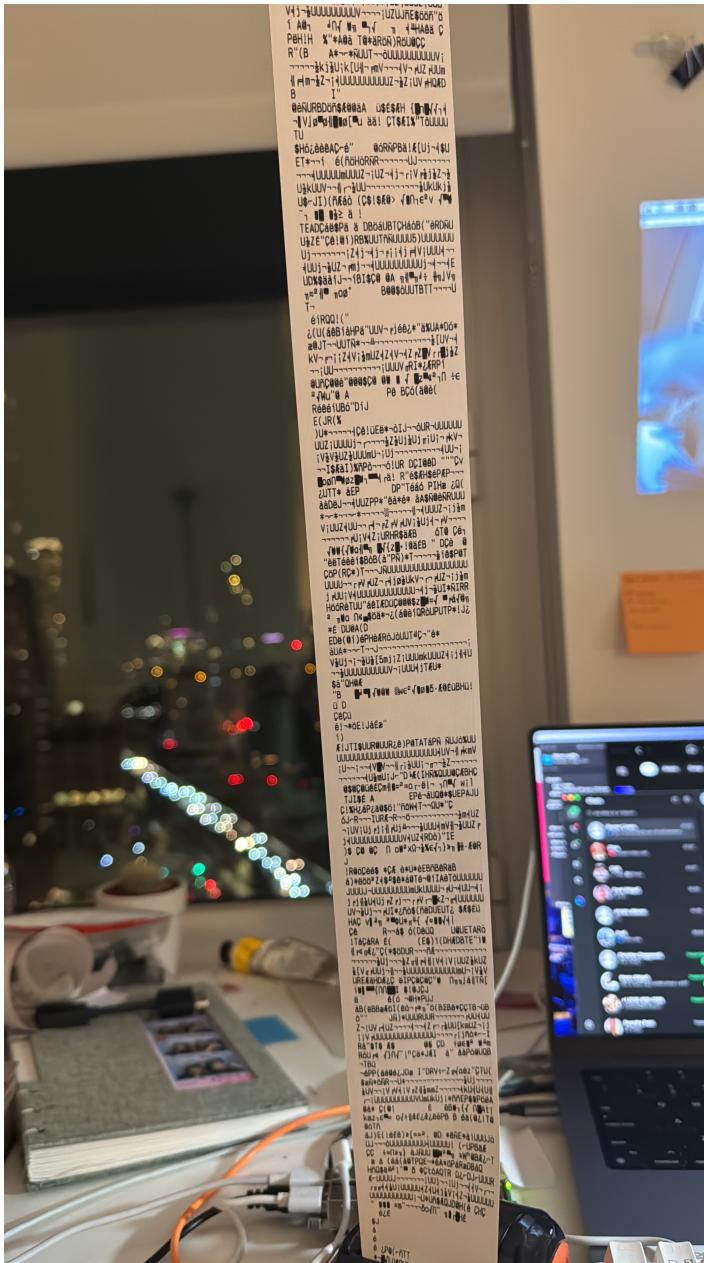
Camera is mounted on a chipboard  
behind the two way mirror



Buffer for camera between  
mirror and chipboard



# POS thermal printer test print



First photo print came out like this



More tests and (not so) candid photos while testing

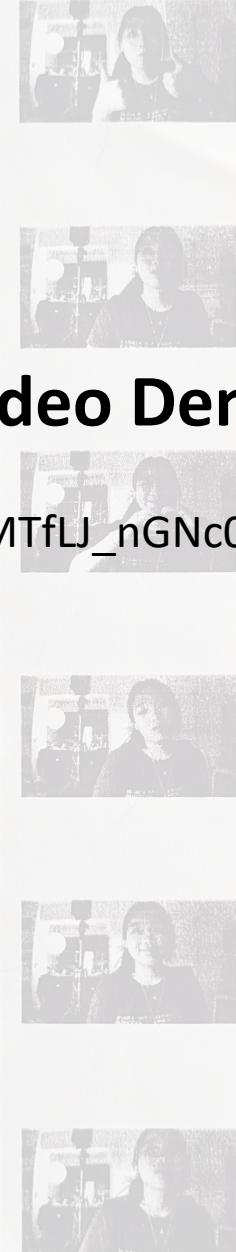
Printer detected photo as the wrong format (characters), fixed it by resizing image and turned it into greyscale.



Set up in D12



[https://drive.google.com/drive/folders/1TMTfLJ\\_nGNc0h\\_kp7KpDE5SrdoG3b9nT?usp=drive\\_link](https://drive.google.com/drive/folders/1TMTfLJ_nGNc0h_kp7KpDE5SrdoG3b9nT?usp=drive_link)



## Video Demo



# Reflection

Since this was my first trial working with a RaspberryPi, I had troubles with setting up the project. I also found challenges connecting to the wifi since the I used different wifis at home and at school; I ended up connecting to a portable wifi modem to ensure the consistency of wifi connection.

I think that this project turned out well and I wish I could show this project in class to see how people (without prior knowledge of what this mirror is about) interact with it. However, I was able to bring the mirror to D12 to try setting up the wifi before final critique day, and I was very excited when people would walk by the mirror and be surprised that a photo of them is printed out.

In future iterations, I would make the face detection time to be shorter(to minimize wait times) and to make the cooldown period longer (to not print too much images at once). I also would stylize the mirror better so it looks more intriguing and approachable, in contrast to the rigid form that I have currently. Lastly, since everything is battery operated (wifi modem, printer), the longevity of the installation depends on the battery which is not ideal in my opinion. I would explore more options to make the program run independently and powered by a electricity source to be dependent of the batteries. But overall, I am quite proud of how this Mirror Selfie project came out.