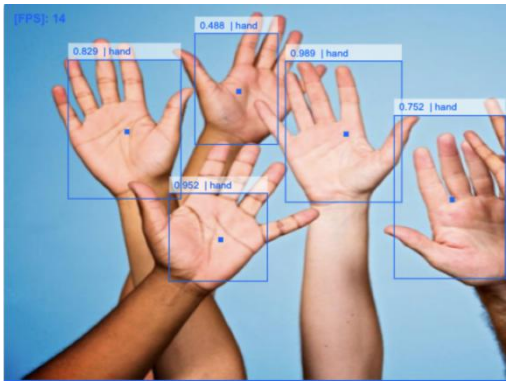
Measurement report

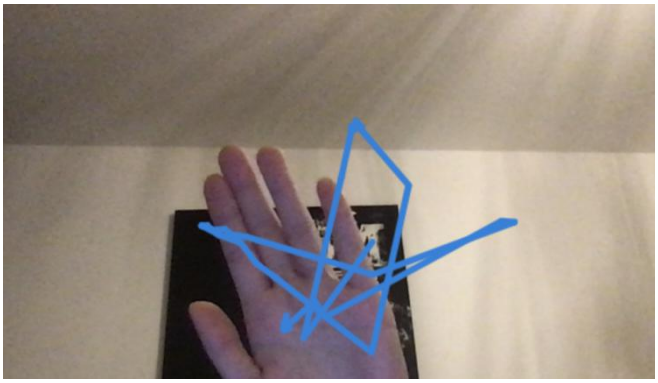
Smart City Laboratory, Gesture Control

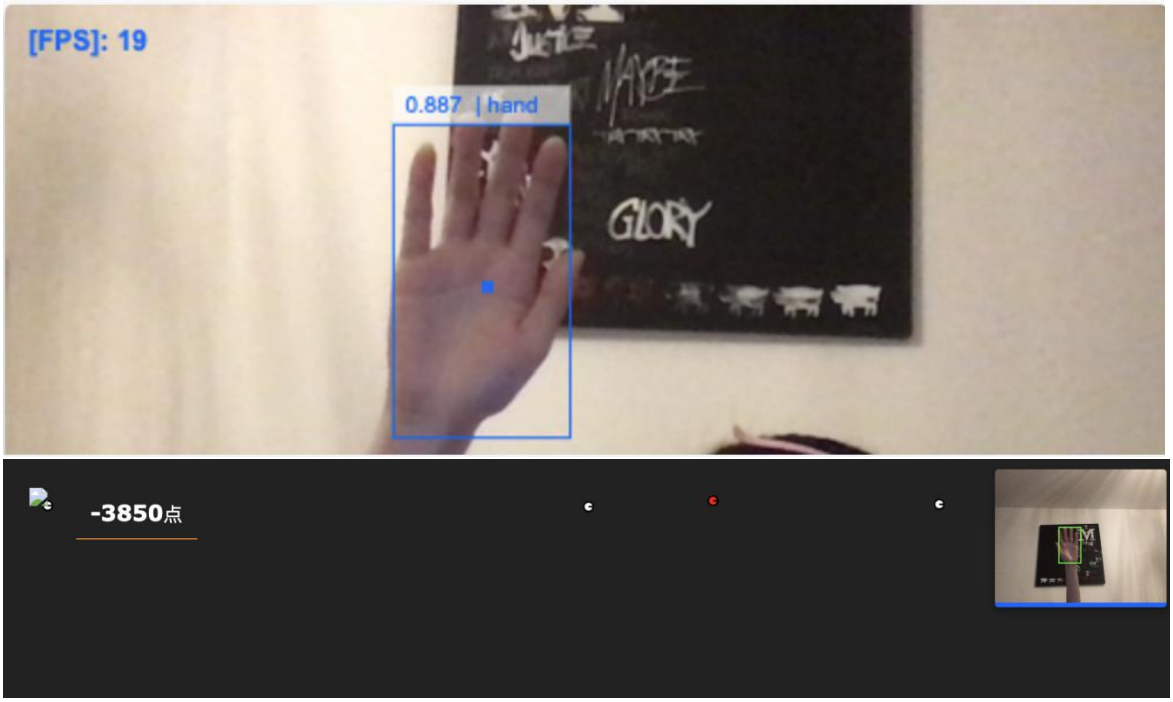
Place:Home
Date, time: 2021.2.23
Name：Li Jingyi

Task 1:

In the https://victordibia.github.io/handtrack.js/# website, I tried theses functions: image detection, doodle, pong game and video sections

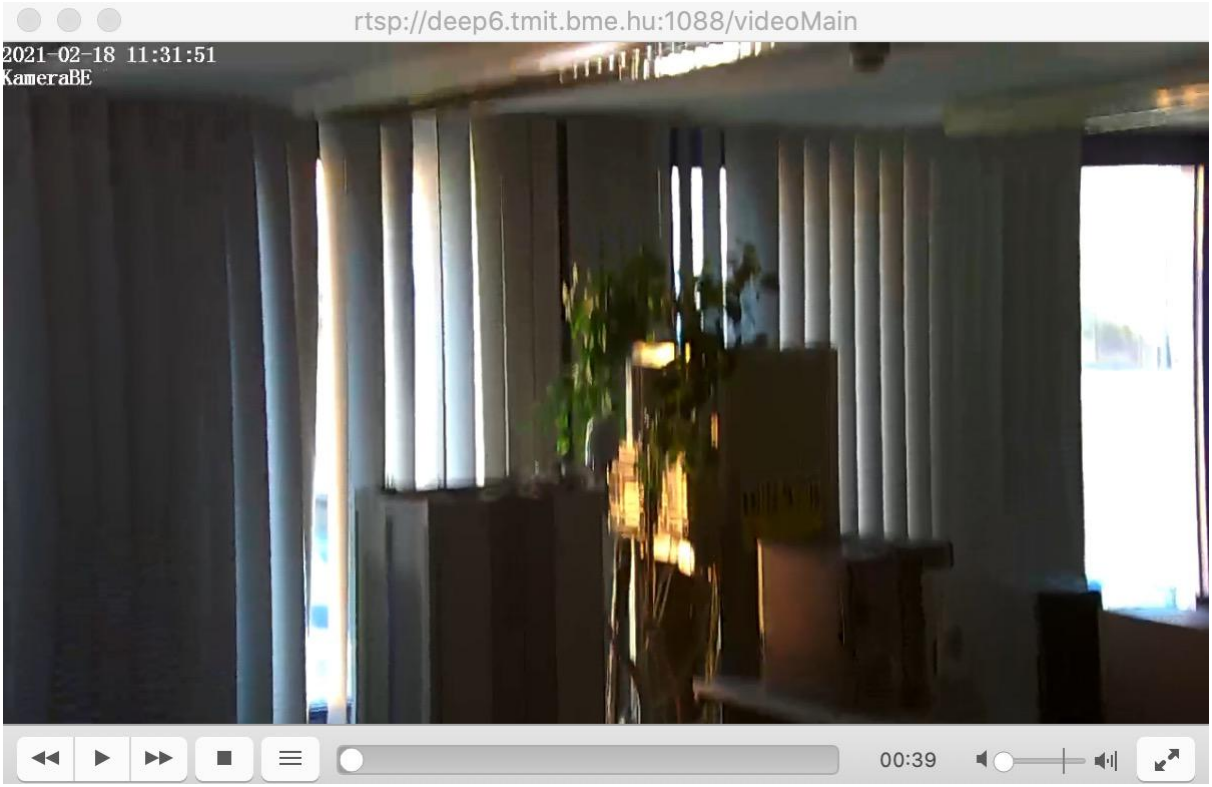






Task 2:

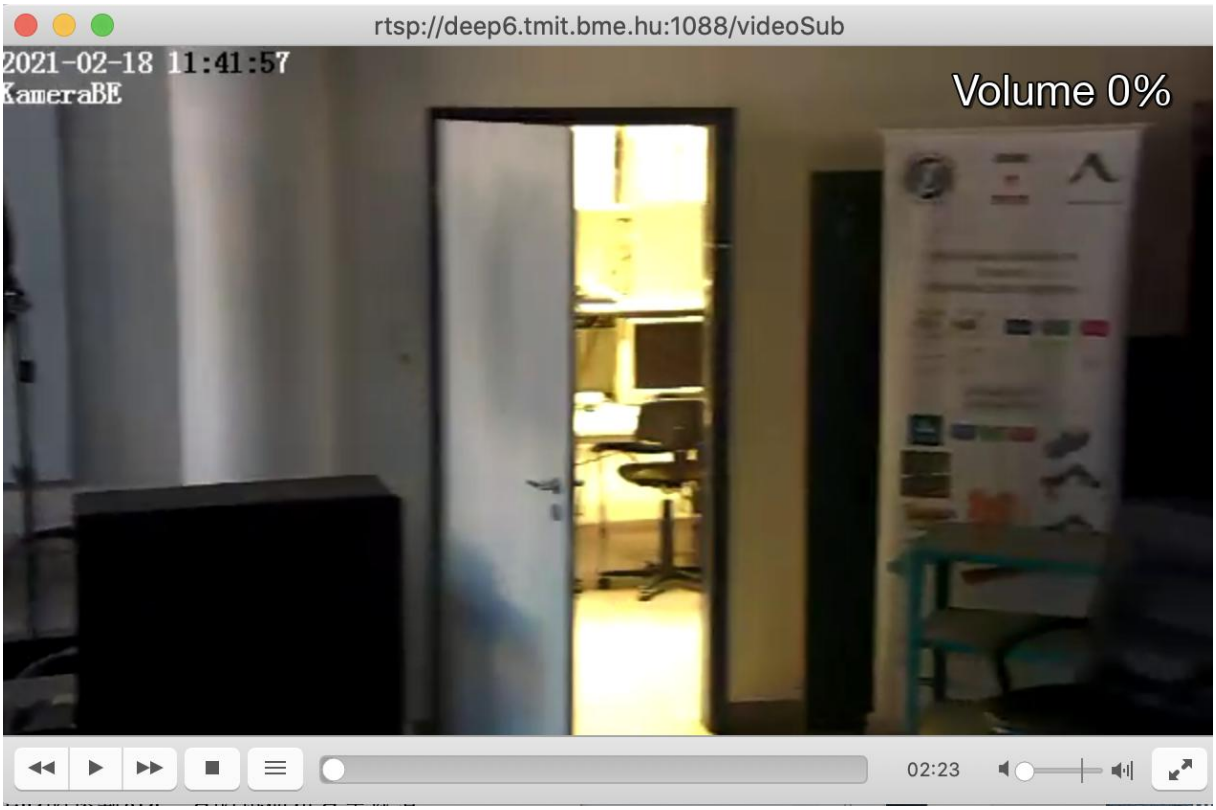
Start the VLC media player, access the IP camera, and save the screenshot.



Task 3:

Control the cammera by https://leszped.tmit.bme.hu/smartcity-control/c.php?/cgi-bin/CGIProxy.fcgi?cmd=...

Move it to the door.

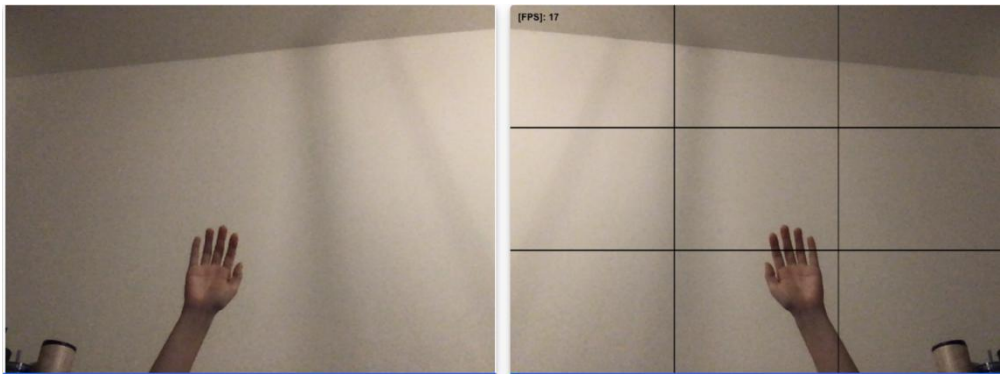


After checking the zoom speed, I got “02” which means slow.

I timed the camera rotation for one circle which is 31.55s, and divide 360 by 31.55s, then I got the speed 11.41 degrees per second.

Task 4:

The picture is the screenshot of a moment where the hand is on the video but the API cannot recognize it .



The reason of “next image” button doesn’t work is uncaught (in promise) DOMException: Failed to execute 'texImage2D' on 'WebGL2RenderingContext': The image element contains cross-origin data, and may not be loaded.

```
Uncaught (in promise) DOMException: handtrack.min.js:16
Failed to execute 'texImage2D' on
'WebGL2RenderingContext': The image element contains
cross-origin data, and may not be loaded.
    at https://cdn.jsdelivr.net/npm/handtrackjs@latest/d
ist/handtrack.min.js:16:74335
    at callAndCheck (https://cdn.jsdelivr.net/npm/handtr
ackjs@latest/dist/handtrack.min.js:16:63799)
    at uploadPixelDataToTexture (https://cdn.jsdelivr.ne
t/npm/handtrackjs@latest/dist/handtrack.min.js:16:74300)
    at t.uploadPixelDataToTexture (https://cdn.jsdelivr.
net/npm/handtrackjs@latest/dist/handtrack.min.js:26:7499
9)
    at t.fromPixels (https://cdn.jsdelivr.net/npm/handtr
ackjs@latest/dist/handtrack.min.js:26:137917)
    at t.fromPixels (https://cdn.jsdelivr.net/npm/handtr
ackjs@latest/dist/handtrack.min.js:26:28726)
    at fromPixels_ (https://cdn.jsdelivr.net/npm/handtra
ckjs@latest/dist/handtrack.min.js:16:86711)
    at fromPixels (https://cdn.jsdelivr.net/npm/handtrac
kjs@latest/dist/handtrack.min.js:16:27761)
    at https://cdn.jsdelivr.net/npm/handtrackjs@latest/d
ist/handtrack.min.js:42:388
    at https://cdn.jsdelivr.net/npm/handtrackjs@latest/d
ist/handtrack.min.js:26:21850
```

FPS: 16

Task 5:

The role of the functions:

modelParams: Get and set parameters (like maximum number of boxes to detect and confidence threshold for predictions)

startVideo: Run the webcam control, start vedio.

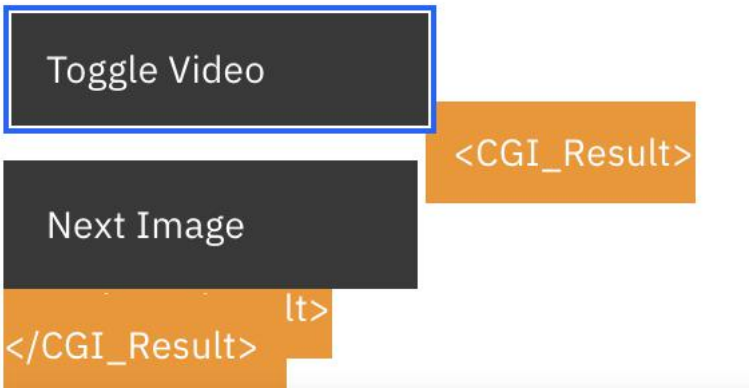
toggleVideo: Start or stop the video.

runDetection: Detect hands and execute orders in different conditions.

Modify the file index.js to do this: If there are two recognized hands, the program asks the speed of Univerisity’s IP camera (getPTZSpeed) and it writes the speed to the console and the “updatenote” field on the screen.

Use theses code: updateNote.innerText = Http.responseText

console.log(Http.responseText)



Task 6:

I set the the webcam can recognize and track a maximum two hands, and 9 reactions in deifferent directions, and when there is no hand on the video, the IP camera will stop run, when there are two hands on vedio, the sistance between them will make the IP camera zoom in, zoom out or zoom stop. And even if every processed frame, it only send new command to IP camera when the movement changed.

Function “command” is what I added for the “Send new command to the IP camera only that cases, when the movement is changed. Not after every processed frame!” order.

Because it’s hard to keep the hands in the same coordinate, recognized hands in different position and send new command is not reasonable. In this setting, new commands will only be sent when the hand reaches other areas (there are 9 areas). And in order to facilitate the use in the test, I set a line consistent with the area division in the video of hand recognition.

Youtube link:

https://youtu.be/ZKhqGJGjkGM

Attachment:

Source of T5, Source of T6

Please pack all to a zip file and upload it in the MS Teams!