

# 2020 Summer Research Report

Author: Lixian Liu  
Supervisors: Dr. Mufleh Al-Shatnawi, Prof. Aijun An

## Contents

<b>1. Web Interface Navigation .....</b>	<b>2</b>
An Overview of the Interface .....	2
Interface Components .....	2
<b>2. Web Interface Installation Instruction .....</b>	<b>5</b>
Option 1 .....	5
Option 2 .....	5
<b>3. Yawcam Instruction.....</b>	<b>6</b>
<b>4. How to Change the Webcam Address in the Code.....</b>	<b>7</b>
<b>5. Link to a Video Presentation.....</b>	<b>7</b>

# 1. Web Interface Navigation

## An Overview of the Interface

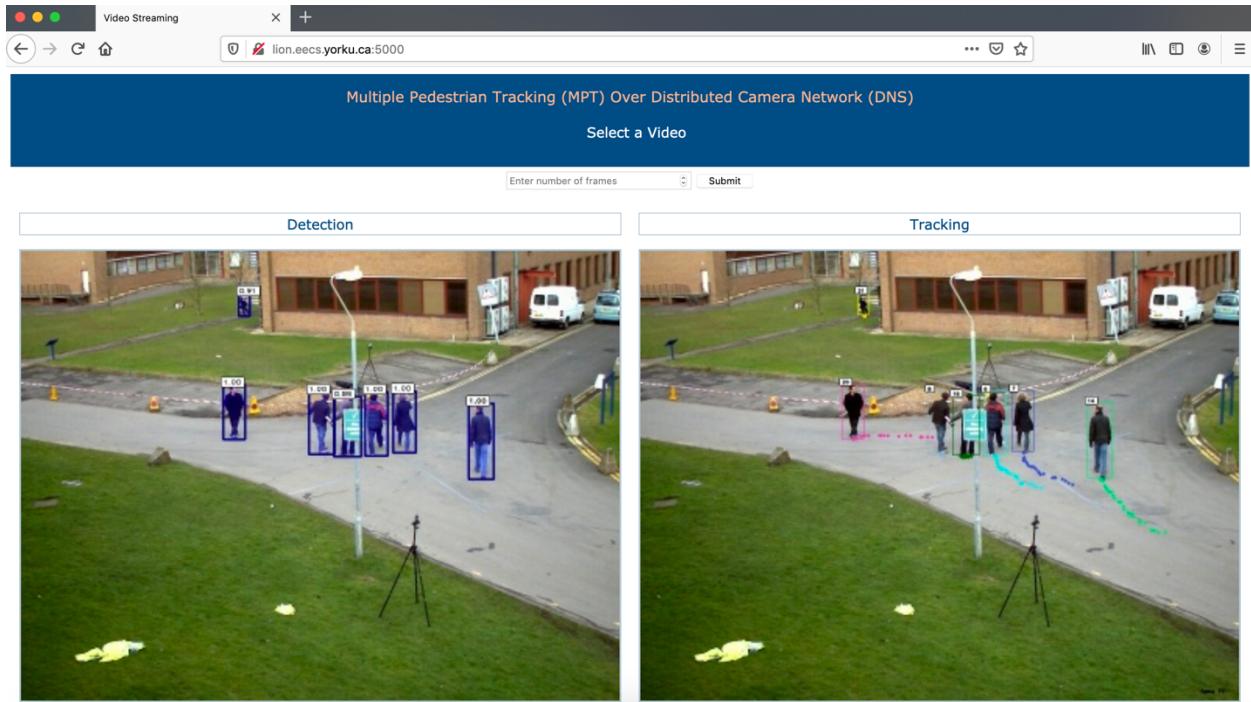


Fig. 1

## Interface Components

### 1. a button to select different camera feeds



Fig. 2

### 2. five different camera feeds are available

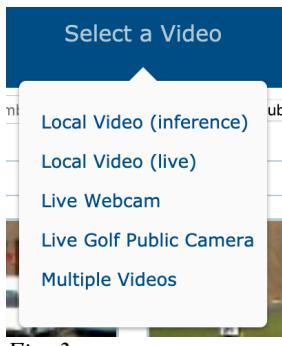


Fig. 3

Detail explanation of each button:

- *Local Video (inference)*: read from a local video and display pre-trained video frames
- *Local Video (live)*: read from a local video and train it in real-time
- *Live Webcam*: read from a webcam and train it in real-time (Note: please see **Yawcam Instruction** for further details on changing the webcam address to your desire.)
- *Live Golf Public Camera*: a public camera located in the USA
- *Multiple Videos*: read four local videos and train them in real-time

### 3. an input section to enter the number of frames

---

Enter number of frames

Fig. 4

*Note 1:* The larger the frame number a user inputs, the longer the video will display

*Note 2:* Except for the button *Local Video (inference)*, **before selecting all the other buttons, the number of frames must be submitted.** (otherwise, no image will display in the detection or tracking section, and you will only see the following image)

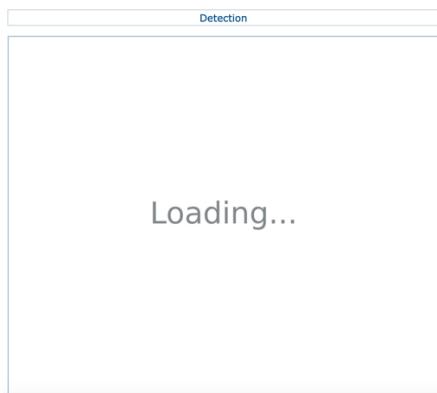


Fig. 5

#### 4. a display section for pedestrian detection

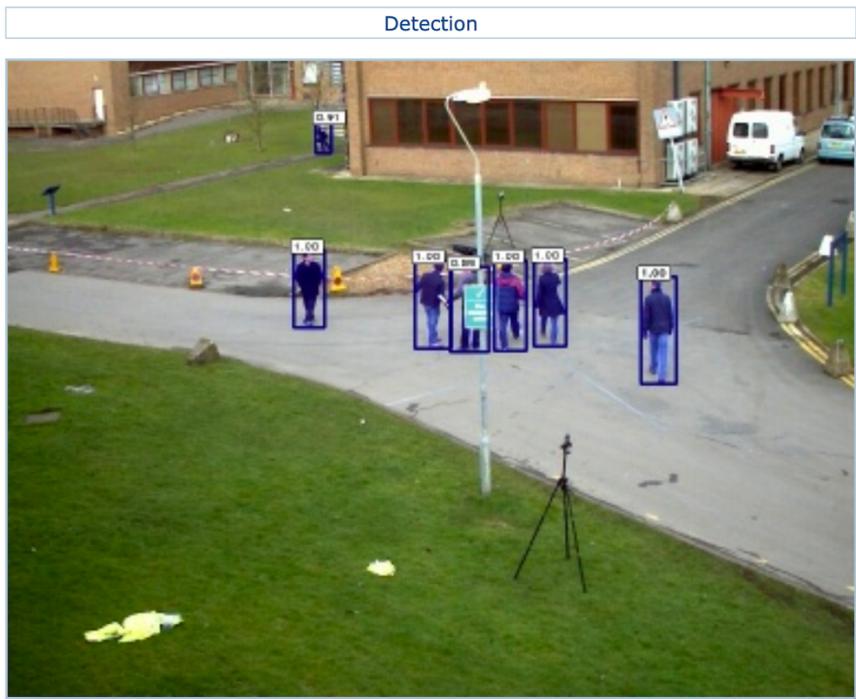


Fig. 6

#### 5. a display section for pedestrian tracking

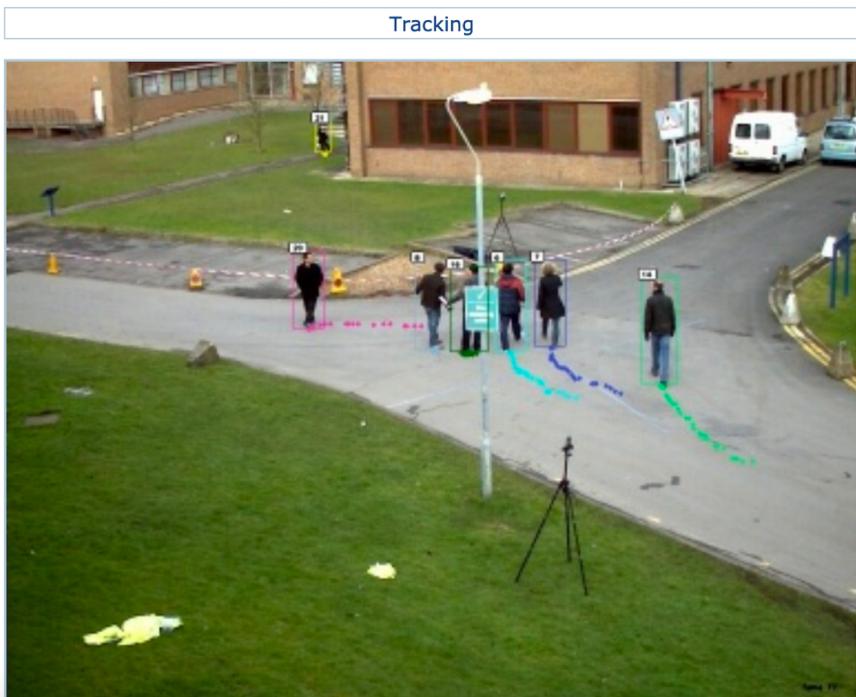


Fig. 7

## 2. Web Interface Installation Instruction

\*Warning: file structure cannot be modified

### Option 1

Use the existing settings via logging in the Lion Server with the following information,

Lion login information

Username: guitracker

Password: ask for permission

#### Step 1:

Change directory to Summer-Research/video-streaming

#### Step 2:

Activate CONDA environment by executing **conda activate yorktrkmask**

#### Step 3:

Execute **python streaming-project.py**

#### Step 4:

Open a Firefox browser, and enter <http://lion.eecs.yorku.ca:5000>

### Option 2

Login Lion Server with your own username

\*Note: You will need the file structure from Dr. Mufleh Al-Shatnawi, which contains videos and algorithms, to make the following instructions work.

#### Step 1:

Unzip the Summer-Research file, and place it besides the same level of a folder called **maskrcnn**

#### Step 2:

Follow Option 1, Step 1

### 3. Yawcam Instruction

Note: Yawcam is free software that can turn any webcam into an IP camera to extract the IP address from a webcam to use in our project.

#### Step 1:

Download and install Yawcam, <https://www.yawcam.com/download.php>

#### Step 2:

Open Yawcam, go to Settings > Edit Settings. In the Output/Stream, change Stream type to **MJPEG** and keep others as default.

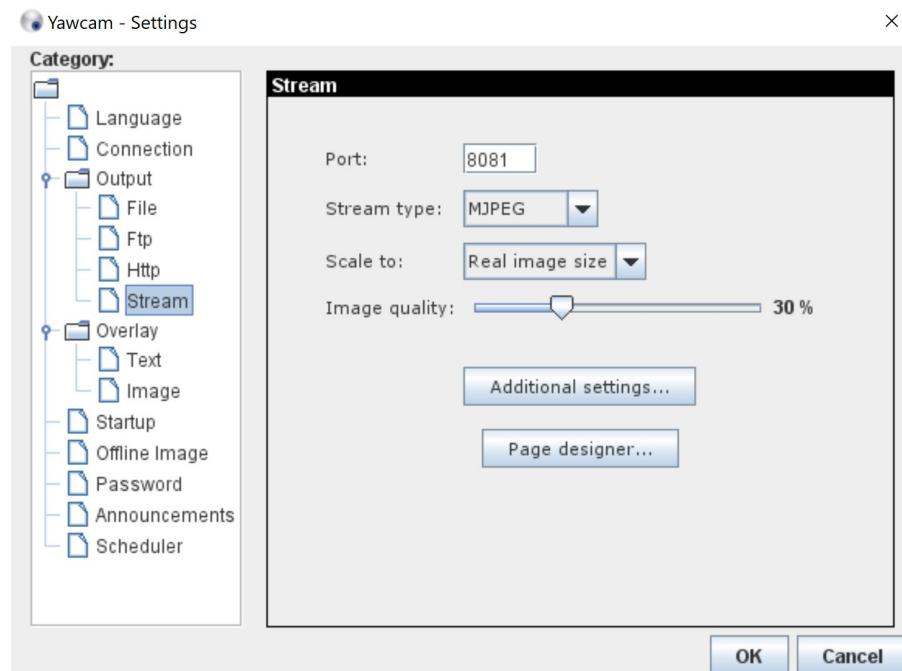


Fig. 8

#### Step 3:

In Control panel, enable “Stream”

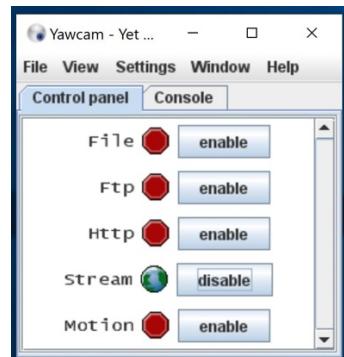


Fig. 9

#### Step 4:

Go to Help > Am I online? (copy the link in **Stream URL**, and this is the address we need to use in our webcam address)

### Yawcam online check

This page will check if your webcam is visible on Internet.

#### Progress:

---

Checking **Http** URL: **http://██████████...** Error!

Checking **Stream** URL: **http://██████████...** OK!

Fig. 10

## 4. How to Change the Webcam Address in the Code

Take the following function as an example,

```
def train_gen3():
    f_num = session.get('f1', None)
    if (f_num != None):
        os.system('python /home/guitracker/maskrcnn/maskrcnnv1/maininference/main2.py --
display --input_video http://xx.xxx.xx.xx:8081/video.mjpg --output_dir
/home/guitracker/Summer-Research/output_webcam --frame_count ' + f_num)
```

If you want to change the webcam address as your desire, replace the text in bold with any other IP camera address.

## 5. Link to a Video Presentation

A YouTube link to the video presentation:

<https://youtu.be/tndvjygV9XU>