

APPENDIX C

Computer vision and detection (software part):

Steps & codes for training model in google colab:

- 1- Setup environment :

Clone repo, install dependencies and check PyTorch and GPU.

```
!git clone https://github.com/ultralytics/yolov5 # clone
%cd yolov5
%pip install -qr requirements.txt # install
import torch
from yolov5 import utils
display = utils.notebook_init() # checks
```

- 2- Train :

Train a YOLOv5s model on the **chicken dataset** with *--data chicken_disease.yaml*, starting from pretrained *--weights yolov5s.pt*

Weights & Biases :

```
%pip install -q wandb # set up to connect with W&B
import wandb
wandb.login() # log in to W&B
```

- # Train YOLOv5s on **chicken dataset** for 800 epochs

```
!python train.py --img 640 --batch 100 --epochs 800
--data chicken_diseas .yaml -- weights yolov5s.pt --cache
```

- 3- Used the model to detect 'coryza':

```
detect.py --source 0 --weights coryza_model.pt #
source 0 is web camera . run it locally .
```

4- video Stream to a Browser:

Follow this stictions on raspberry pi web-side

(<https://forums.raspberrypi.com/viewtopic.php?f=43&t=63276&sid=08636f781d69ab49223f8374f0522937>) then pass that IP ADRESS to your-own web-side or platform to get streaming features and change the – source on train code .

```
python detect.py -- source 'rtsp://example.com/media.mp4' # RTSP,  
RTMP, HTTP stream
```