

ADAFRUIT IO CONTROLLED CAMERA WITH DIRECTIONAL POINTING CONTROL

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Security cameras are used to enhance safety and security. The images taken by the security camera should be available remotely, ideally via the Internet. It is also desirable if the direction that security cameras are pointing can be remotely controlled.

This project will create a camera that can be controlled from Adafruit IO. The camera will be mounted on an XY platform with servo motors to control the direction the camera is pointing. Adafruit IO will be used as the user interface to control both the direction the camera is pointing and the taking of images.

Needs

- Several parts of the camera mount will need to be 3D printed so ready access to a 3D printer is needed.
- Beyond the parts supplied in the Sunfounder kit an additional servo motor will be needed.

Literature Review

author unknown (2025, 7, 5), “Building a Raspberry Pi Security Camera”, nabto,
<https://www.nabto.com/build-raspberry-pi-security-camera/>

Methodology

Week 1: (June 14-20)

Goal 1: Print parts for camera mount

Goal 2: Get servo motors controlled via Adafruit IO

Goal 3: Create script to take image via Raspberry Pi camera

Monday – check out 3D printer from SKC & begin printing parts

Tuesday – get servo motors connected to Raspberry Pi controlled via Adafruit IO

Wednesday – work at Freecycle Missoula all day

Thursday – complete camera control script

Friday – run example script on RPi via button press on Adafruit IO

Date/Time for Conference with Mentor **June 16 3:30pm**

Date/Time to Email Progress to Mentor **June 15 6pm**

Week 2: (June 21-27)

Goal 1: Print parts for camera mount

Goal 2: Get servo motors controlled via Adafruit IO

Goal 3: Create script to take image via Raspberry Pi camera

Monday – check out 3D printer from SKC & begin printing parts

Tuesday – get servo motors connected to Raspberry Pi controlled via Adafruit IO

Wednesday – work at Freecycles Missoula all day

Thursday – complete camera control script

Friday – run example script on RPi via button press on Adafruit IO

Date/Time for Conference with Mentor **June 22 3:30pm**

Date/Time to Email Progress to Mentor **June 21 6pm**

Week 3: (June 21- July 4)

Goal 1: Print parts for camera mount

Goal 2: Get servo motors controlled via Adafruit IO

Goal 3: Create script to take image via Raspberry Pi camera

Monday – check out 3D printer from SKC & begin printing parts

Tuesday – get servo motors connected to Raspberry Pi controlled via Adafruit IO

Wednesday – work at Freecycles Missoula all day

Thursday – complete camera control script

Friday – run example script on RPi via button press on Adafruit IO

Date/Time for Conference with Mentor **July 1 3:30pm**

Date/Time to Email Progress to Mentor **June 30 6pm**

Week 4: (July 5-11)

Goal 1: Complete assembly/integration of project

Goal 2: ***Complete Poster***

Goal 3:

Monday – assembly/integration of project

Tuesday – work on poster

Wednesday – work at Freecycles Missoula all day

Thursday – complete poster

Friday – ***Final Project report due***

Date/Time for Conference with Mentor **July 8 3:30pm**

Date/Time to Email Progress to Mentor **July 7 3:30pm**