

Motion Following

Motorized Camera

Story- Upgrade your home security camera or webcam with a motorized stand that will detect and follow any motion around the camera.

Story

I came up with this idea to solve a problem I was having with my home security cameras. I have one particular camera that is positioned on a wall between two rooms, however you can only see one room at a time unless you login to the camera software to rotate it manually. If someone were to walk into the opposite room, the camera would never record the action. To solve this problem, I decided to create a motion detecting/ tracking base on which I could attach the camera so it would automatically reposition itself to wherever the motion was detected.

Howe it works:

This device uses 5 PIR motion sensors to detect any movement within a 180⁰ radius. Once motion is detected , a servo motor rotates the camera base to point in that direction. There are also 5 LED “status” lights positioned inside the base that will light up any time one of the PIR sensors detects motion.

What is motion Detection?

Motion detection is feature on security cameras that detects motion and starts recording video.

Motion detection is the process of detecting changes in the position of an object or the surroundings in relation to the object.

It’s not the same as motion tracking, which follows moving objects and alerts you when they enter a certain area.

Motion detection can be set up to record continuously or only when it detects movement in front of the camera.

You can also set up your camera to sent you notification whenever it detects movement. So you’ll know if there’s something going on while you’re away from home.

How Motion Detection Works?

The motion detector analyzes each pixel in a image take by a security camera and determines whether or not there has been any change since its last analysis-which could take less than a second.

If something new appears on screen as compared with what’s already stored in memory, then the motion will be detected and recorded by your system as an event worth saving.

Benefits of a security camera with motion detection.

1. Speeding up the investigation process:

Motion detection is a great feature to have if you want to capture footage of people in your home.

For example:

If someone walks through your house and steals something, you'll know who did it and what they took.

Also:

you can use motion detection to keep an eye on pets or children when they're alone in the house

2. Prevents False Notifications

This system can distinguish between images of animals, humans and vehicles, while recommending what should be recorded or ignored.

It prevents false notification due to loud noises or strong weather. In addition, it determines the direction of movement and the duration of activity.

3. Time-Extended Recording

A security camera with motion detection saves battery life because it won't record unless something moves within its field of vision.

This means:

If you leave your camera on all day long but don't get any alert from it during those hours (because nothing has moved), then there's no need for this device to continue using up power until midnight rolls around again later tonight.

4. Better Protection 24/7

With Zoom on, smart home security app, you can monitor your home 24/7 through your smartphone.

Thus:

Emergency situations are controlled, real-time alerts are delivered, and proper authorities are notified.

Things used in this project

Hardware components

Arduino UNO	x 1
Capacitor 100 μ F	x 1
LED (generic)	x 5
PIR Motion Sensor (Generic)	x 5
Resistor 220 ohm	x 5
Servos (Tower Pro MG996R)	x 1