

SMART SECURITY CAMERA

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ABSTRACT

The Objective of this project is to develop a smart security camera system. Security is the first attention everywhere, every time and for everyone. This is used to track what is happening in our home in absence of our presence. Insecurity situations in many cities have forced the authorities to find a way to bring homonymous co-existence and lead ideal behaviour on citizens in such a way that everyone can feel integrity and possessions are protected.

In this continuous search to guarantee the population's well-being, it is valuable to incorporate the use of technology to facilitate the work of people assigned to public surveillance tasks. If there is any movement in front of the camera then the motion sensor detects the movement and starts to click a picture or video.

INTRODUCTION:

The main objective of this project is to develop a Smart Security camera system. With increasing crime rates many people rely upon smart security systems.

As technology is increasing day-by-day people are looking up to additional security systems. A Smart Security system is a great way to provide extra protection for your house or business. To overcome the insecurities and protect your home in your absence.

This will track each and every movement in our house. Smart security cameras will automatically click pictures or videos with the help of smartphones. A PIR sensor allows you to sense motion, almost always used to detect whether a human has moved in or out of sensor range.

1.2 BLOCK DIAGRAM :



Figure 1.Block Diagram

1.2.1 PIR SENSOR :

PIR sensors allow you to sense motion, almost always used to detect whether a human has moved in or out of the sensor's range. They are small, inexpensive, low-power, easy to use and don't wear out. For that reason they are commonly found in appliances and gadgets used in homes or businesses. They are often referred to as PIR, "Passive Infrared", "Pyroelectric", or "IR motion" sensors. In this project we use the PIR sensor as the input device to know whether there is any motion in the sensor range. **1.2.2 ARDUINO :**

Arduino UNO is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support

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the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. In this project we used Arduino for processing the input signal provided by the PIR sensor and the output by capturing the image.

1.2.3 RELAY:

A Relay is a simple electromechanical switch. While we use normal switches to close or open a circuit manually, a Relay is also a switch that connects or disconnects two circuits. But instead of a manual operation, a relay uses an electrical signal to control an electromagnet, which in turn connects or disconnects another circuit. We used a relay to automatically click pictures and videos when there is a movement in front of the sensor and turns off if there is no movement.

CIRCUIT DIAGRAM AND RESULT 2.1 Circuit diagram of Project



Fig.2 circuit diagram

2.2 Result of the project



Fig 3.Result of the project

2.2.1 Project without Power Supply



Fig 4. Project without power supply

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Fig 5 Project with power supply

2.3 Applications

• Real time alerts: There are two types of alerts that can be generated by smart security cameras, user defined alerts and automatic unusual activity alerts.

• User defined alerts: Here the system is required to recognize a variety of user defined events that occur in the monitored space and notify the user in real time, thus providing the user with an opportunity to evaluate the situation and take prevention action if necessary.

- Theft identification.
- Visual Sensor Networks.
- Increases overall safety.
- Improve safeguard.
- Non-contact measurements.
- Automated inspection for quality assurance.
- It can be used in different places for security purpose.

2.4 Advantages

- Protect Your Belongings With Security Cameras.
- Smart security camera System Offers Protection.
- High value video capture.
- Help us to gather evidence.
- Help us to proceed legally against someone in respect to a criminal charge.
- These Smart Security cameras can connect to computers, laptops, or smartphones.
- Anything recorded on the camera can be considered as the evidence.
- Improve safe guards.
- Detects the crime.
- It is low price and high quality.
- Allows remote access to your home.
- System will provide accurate information with great efficiency.
- Prosecute the thief by going legal.
- Less vulnerable.

2.5 Disadvantages

• The Smart security camera is also used to spy on people. This can lead to the theft of personal information with sensitive data and also many people around do not like that someone is interfering with their privacy.

- A large storage medium is required to store videos, images, etc.
- We also need to take regular backups to avoid any complications.
- This system can be easily manipulated.
- Privacy is an issue.
- Can't stop theft.
- They can be vulnerable.

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CONCLUSION AND FUTURE SCOPE

3.1 Conclusion

This project work "Smart Security Camera" is successfully designed, tested and a demo unit is fabricated. We have developed a completely automatic security system using the PIR sensor which can be utilized in museums, banks and wherever the security is required. In this project a low cost, flexible, solution to the automation of the security system is designed using a PIR sensor. The system automatically detects the presence of intruders using PIR sensors and automatically clicks pictures and videos.

Museums, banks, jewelry shops, etc will benefit from having this system which will provide at most security to the valuables and hence very less cost effective. This system can be implemented not only for domestic or commercial applications but wherever the security is required, for all such applications. This system has the advantage of having zero human interference. It automatically resets itself to its initial state once there is no movement within the range of the PIR sensor. The process repeats when detection again occurs.

Smart security cameras have the potential to exponentially increase our ability to detect, investigate and prosecute criminal activity. This system can monitor without any human need with a low.

So we have designed a smart surveillance system that can capture video / image in smart phones. It is beneficial as it provides honesty and confidentiality on both sides. It is authenticated and encrypted on the receiver side hence it offers only the person concerned to view the details. This action can be taken for a short span of time in the case of emergency conditions such as elderly person falling sick, military areas, smart homes, offices, industries, jewellery shops etc. The task of the future is to determine the number of people found in the area and their positions in order to obtain accurate information on the part of the recipients.

3.2 Future Scope

Security has become one of the most important factors governing everyday life. If you are working in an office, there are guards present 24/7, by monitoring by CCTV cameras. Even in your very own home, a security system is needed to prevent any kind of theft, robbery etc.

Security cameras give you peace of mind and allow you to monitor your property with ease. If you don't want to rely on a wifi connection to record and access your security footage, look for wireless alternatives like our smart security camera.

The future of video surveillance continually changes and has surprising uses. Traffic monitoring, industrial processes, and even sporting events- all benefit and use video surveillance in some way.

Automation systems for intelligent application in fields like manufacturing, access control, transportation, fire and police services, and many other fields so that surveillance cameras become a part of the Internet of Things. In the future, surveillance will become more

A smart security camera system is an excellent tool for protection, and it can work both as a deterrent and a recovery tool. Burgers are wary of properties with visible security cameras. Plus, if a crime does occur, security cameras can help gather evidence.

If the worst were to happen and someone broke into your home or committed a crime on your property, you'd want to find out who did it as soon as possible. Security cameras can help you and the police determine who, what, and when of a crime.

Video surveillance systems are widely used today and will continue to develop into more intricate systems. Our society revolves around surveillance to prevent injuries and to keep people safe from crime and traffic incidents.

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