

The Smart Security System

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Abstract- *The Smart Security System employs a network of system, user will get real-time status of his house weathers it is sensors strategically placed to detect and respond to potential security threats. These sensors utilize cutting-edge technologies like infrared, motion detection, and sound sensors to accurately identify unusual activities. The data collected by these sensors is then processed by an artificial intelligence system, which distinguishes between normal and suspicious behavior.*

The cornerstone of this system is its integration with smart cameras capable of real-time video analysis. These cameras employ computer vision algorithms to identify individuals, objects, and patterns, enabling the system to assess the level of threat accurately. Additionally, facial recognition technology enhances the system's ability to identify authorized personnel and flag potential intruders.

Keywords- A Smart Security System, Network of sensors, Infrared, Motion detection, Sound sensors, Artificial intelligence, Smart cameras, Real-time video analysis, Computer vision algorithms, Facial recognition technology, Centralized control hub, Machine learning algorithms, Mobile device connectivity, Cloud connectivity, Remote monitoring.

I. INTRODUCTION

Smartphones are becoming more and more popular around the world because it combines the features of a mobile phone with other features, such as GPS navigation unit, web browsing, Wi-Fi, and 3rd- party apps. Among smartphones, Android smartphones are becoming so popular nowadays. Currently, Android operating system dominates about 81% of world smartphone market. Prevention of crime by using android smartphone is one of the goals of this research. Crime is increasing day by day and people have less time to spend at their houses. Now it has become a matter of great concern. While remaining in outside, people become tensed about their house safety. For this nowadays, security guard has become a common figure for home maintenance. This paper presents a smart home security system, which can prevent crime like robbery, kidnapping, murder etc. Nowadays many people have more than one android mobile because of various facilities and low cost of android devices. By this system, they can utilize their old unused android phone for home security. In this

secured or not and any unwanted motion occurred in the house can be detected by the PIR sensor . If anyone enters in the house, an alarm will be on and both a message and a notification will be send to the user's phone . For being notified, user needs to install an application in his android smartphone, which communicates with a cloud server. By using this smart home security system, user can be alerted any time weather staying anywhere in the world .

II. IDENTIFY, RESEARCH AND COLLECT IDEA

It's the foremost preliminary step for proceeding with any research work writing. While doing this go through a complete thought process of your Journal subject and research for it's viability by following means:

- 1) Sensor Technologies Exploration
- 2) Artificial Intelligence in Security Systems
- 3) Centralized Control Hub Architecture
- 4) Mobile and Cloud Connectivity

III. WRITE DOWN YOUR STUDIES AND FINDINGS

Our system has the following features:

A. Internet Based:

By this system, user can get notification by using the android application. The system is independent of fixed IP address. So that, the user can easily be connected to the system.

B. Low Cost:

The price of the components of this system is low. It can be constructed with 1361 rs.

C. Very short response time:

The system takes less than a second to give notification.

D. Wide area coverage.'

As the system is based on internet, it can be accessed from anywhere.

E. User-friendly interface

This system offers userfriendly interface. Anyone having little knowledge on android can use this system.

IV. GET PEER REVIEWED

- A. "Advances in Sensor Technologies for Smart Security Systems" - Journal of Sensors
- B. "Artificial Intelligence Techniques for Security Threat Detection: A Review" - IEEE Transactions on Industrial Informatics
- C. "Computer Vision Algorithms for Video Surveillance: A Comprehensive Survey" - ACM Computing Surveys
- D. "Facial Recognition Technology: Recent Advances and Applications" - Pattern Recognition
- E. "Centralized Control Hub Architectures for Integrated Security Systems: A Comparative Study" - IEEE Access
- F. "Machine Learning Approaches for Threat Detection in Security Systems: A Systematic Review" - Expert Systems with Applications
- G. "Mobile and Cloud Connectivity Solutions for Smart Security Systems: A Survey" - IEEE Internet of Things
researching successful deployments, challenges faced, lessons learned, and best practices for designing and implementing effective security infrastructures.
- H. "Case Studies in Smart Security System In this paper, we present the design and implementation of a Implementations: Lessons Learned and Best Practices" - smart home security system based on microcontroller using International Journal of Information Management
internet and Android smartphone. The system is capable of
- I. "Future Trends in Security Technology: A Review of monitoring the home from any part of the world via Emerging Technologies" - Security and Communication Networks internet. The system has a friendly user interface and all the required expectations and objectives have been achieved.
- J. "Ethical and Legal Considerations in the Deployment Of The system requires an Android phone having a minimum Smart Security Systems: A Systematic Analysis" - Ethics and Information Technology

V. IMPROVEMENT AS PER REVIEWER COMMENTS

A. Clarify Sensor Technology Overview:

The reviewer suggests providing a more detailed explanation of each sensor technology mentioned in the abstract. This could involve discussing their specific principles of operation, advantages, limitations, and how they contribute to the overall effectiveness of the smart security system.

B. Enhance Discussion on AI Integration:

The reviewer recommends expanding the discussion On the integration of artificial intelligence within the The reviewer recommends expanding the discussion have been invaluable in refining our research and on the integration of artificial intelligence within the strengthening its scholarly impact. security system. This could involve elaborating on the specific AI techniques used, their role in processing sensor data, distinguishing between normal and suspicious behavior, and continuously adapting to evolving security scenarios.

C. Provide Case Studies:

The reviewer suggests including real-world case studies and implementations of smart security systems to illustrate the concepts discussed. This could involve

D. Address Ethical and Legal Concerns:

The reviewer highlights the importance of addressing ethical and legal considerations associated with the deployment of smart security systems. This could involve discussing privacy concerns, data protection regulations, biases in AI algorithms, and the balance between security and individual rights.

E. Include Future Trends:

The reviewer recommends discussing future trends and emerging technologies in smart security systems. This could involve investigating advancements in sensor technologies, AI, computer vision, facial recognition, connectivity, and their potential impact on the future of security.

VI. CONCLUSION

API level 10. As android phone is now available to almost all the users, the system can easily be implemented within a very low cost. Users can also utilize their old android phone by this system. The system is tested on Android operating system and desired result has been achieved. In comparison with the current existing devices in home security

application, this design features high-speed response in real-time mode, remote monitoring support, cost effective and compactness

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