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SMART APARTMENT BUILDING MANAGED BY ARTIFICIAL INTELLIGENCE, INCLUDING ADDITIONAL SAFETY FEATURES.

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Abstract: Recent years have witnessed rapid advancements in the field of artificial intelligence (AI), with practical applications in a wide range of areas, including but not limited to face recognition and image analysis. Artificial intelligence (AI)-based tactics may enhance digital security equipment for apartments while also assisting intruders in refining their own attack methods. Unfortunately, offensive performers are aware of the new opportunities as well, and they will most likely try to use them for malicious ends. This article intends to provide a schematic of how artificial intelligence may be used for offensive and defensive purposes in the context of home security. The overarching goal of the project is to create a home security system that makes use of ARDUINO MEGA, AI, and IoT.

Keywords: Apartment security; artificial intelligence; machine learning; deep learning; IOT; systems security Etc.

I. INTRODUCTION

The infrastructure for automating homes is becoming more commonplace, and it is already in use in a large number of homes throughout the globe. The elderly and the physically unable will benefit greatly from it since it will make using their household appliances much less of a hassle. A home automation system's connection might be hardwired or wireless, depending on the system's needs. The primary distinction between the two types is that with a remote home computerization system, all of the devices in the house are controlled by a single central hub. If the medium employs a wired communication technique, however, the devices are linked to a central controller. Discarding hardwired connections between domestic devices was made easier thanks to a well-known remote framework. Our homes will be roboticized with the help of Arduino and Bluetooth. Everyone these days is glued to their phones and can't live without them. Time magazine surveyed almost 5,000 individuals from the United States, the United Kingdom, South Korea, India, China, South Africa, Indonesia, and Brazil. Eighty-four percent said they couldn't live without their cellphones, proving how dependent most people are on them. Another report found that Android accounted for 75% of the market share and that 106,000,000 android mobile phones were shipped in the second half of 2012. The Android mobile phone operating system has quickly risen to the position of most popular OS in the world. To enhance our quality of life, widespread use of home computing is becoming the norm. Home automation provides ease and convenience while using household appliances. With home automation, one can switch on the TV, lock and unlock the doors, and adjust the temperature all from the convenience of his or her smartphone, while also saving money on utility bills. However, the high expense of having such a system installed and the difficulty of setting it up are two of the main reasons why home automation has not received more attention. If this is granted to

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people, then they will have it in their homes, offices, and schools. It would seem that a shift in the home automation framework is necessary to reduce the price tag of implementing it in individual homes. Similarly, mechanising one's house makes it easier for those with mobility impairments or who may be elderly to accomplish their goals with a single click. The infrastructure for automating homes is becoming more commonplace, and it is already in use in a large number of homes throughout the globe. The elderly and the physically unable will benefit greatly from it since it will make using their household appliances much less of a hassle. A home automation system's connection might be hardwired or wireless, depending on the system's needs. The primary distinction between the two types is that with a remote home computerization system, all of the devices in the house are controlled by a single central hub. If the medium employs a wired communication technique, however, the devices are linked to a central controller. Discarding hardwired connections between domestic devices was made easier thanks to a well-known remote framework. Our homes will be roboticized with the help of Arduino and Bluetooth. Everyone these days is glued to their phones and can't live without them. Time magazine surveyed almost 5,000 individuals from the United States, the United Kingdom, South Korea, India, China, South Africa, Indonesia, and Brazil. Eighty-four percent said they couldn't live without their cellphones, proving how dependent most people are on them. Another report found that Android accounted for 75% of the market share and that 106,000,000 android mobile phones were shipped in the second half of 2012. The Android mobile phone operating system has quickly risen to the position of most popular OS in the world. To enhance our quality of life, widespread use of home computing is becoming the norm. Home automation provides ease and convenience while using household appliances. With home automation, one can switch on the TV, lock and unlock the doors, and adjust the temperature all from the convenience of his or her smartphone, while also saving money on utility bills. However, the high expense of having such a system installed and the difficulty of setting it up are two of the main reasons why home automation has not received more attention. If this is granted to people, then they will have it in their homes, offices, and schools. It would seem that a shift in the home automation framework is necessary to reduce the price tag of implementing it in individual homes. Similarly, mechanising one's house makes it easier for those with mobility impairments or who may be elderly to accomplish their goals with a single click.

II. LITERATURE SURVY

In [1], Vamsi Krishna Patchava, Hari Babu Kandala, and P Ravi Babu used the Arduino and related camera and motion sensors to develop a web-user-interface (GUI) based house observation and robotization framework.

In [2], 2Sarthak Jain, Anant Vaibhav, and Lovely Goyal detailed the system that may be used to operate home computers by reading the commands the subject of an email received at the specially changed email address of the device. In [3], Rajeev Piyare and Seong Ro Lee presented an adaptive and little effort home control and checking framework that makes use of an implanted small scale server with an IP network for remote control of devices using an Android application. 4In [4], Ronnie D. Caytiles and Byungjoo Park leveraged the developments of mobile IP and integrated it with the smart home system. They used IPV6 standards to allow for mobility in the design and construction of MIP-based Smart homes.

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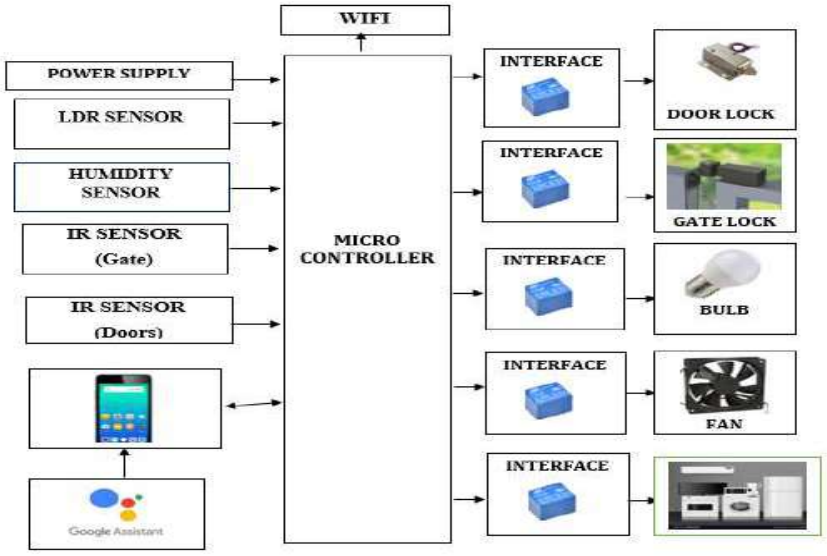
In [5], Ana Marie D. Celebre developed a system that employs Apple Inc.'s Siri technology to be operated using in-built voice instructions given to Siri. They went via an unofficial server to get Siri working.

III.PROPOSED METHODOLOGY



We used Web of Science, Scopus, IEEE Xplore, and the ACM digital library to acquire a thorough overview of the relationship between AI and cyber security. In close proximity to it, the Google Researcher web index was used. A lot of catchphrases linked with the issue have been employed in these databases. In order to enhance the query items, the developers improved several catchphrases and keyword combinations for each online index to get the highest inclusion possible. Further progress was made by using a channel based on the gathered results. The indexed lists were confined as it were to the current papers disseminated throughout the most recent four years, in light of the fact that the aim behind this study is to uncover the newest research trends of AI in home security. Then, the results were sorted by the total number of citations, and the originals with more than five citations were selected. However, in recent

Fig 1:Block Diagram

These articles were selected among those that were published and satisfied the criteria of having fewer than five references and an innovative approach. After that, resources that adhered to the preceding criteria were prohibited:

• Those papers whose names seemed to refer to things outside the scope of this investigation.

Books, patent files, technical papers, and citations.

Research that was conducted but not published in English.

Wire-free sensor technology lies at the heart of the proposed system.

Voice recognition is the foundation of it.

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• The proposed system includes a master control unit with a wireless wifi module and slaves functioning as sensor nodes.

•The sensor layer, logic layer, and development layer are all rolled into one in the proposed system.

The third phase included looking at the final products and any changes that were made. Here, the designers checked to see whether the collected papers adequately addressed the central issue of how AI may be used to the realm of home security. Thus, we only included studies that were particularly relevant to the task at hand.

IV.HARDWARE MODULES

1. GIANT ARDUINO (MICROCONTROLLER)

One such microcontroller board that uses the ATmega2560 is the Arduino Mega 2560. It contains a 16 MHz precious stone oscillator, USB connectivity, a force jack, an ICSP header, a reset button, and 54 advanced information/yield pins (of which 15 may be used as PWM yields).

2.Wi-Fi INTEGRATED MODULE

Any microcontroller may connect to your Wi-Fi system thanks to the ESP8266 Wi Fi Module, which is an autonomous SOC that has an integrated TCP/IP convention stack. The ESP8266 may either act as a helper for a certain programme or take over all Wi-Fi organisation duties from another application processor.

3 ELECTRICAL POWER SOURCE

The force-flexible zone is the section that supplies +5V to the components. In order to provide a constant +5V, the IC LM7805 is used. Typically, a transformer is connected to an air conditioner's 220V output in order to reduce the voltage to the level where the dc yield is maximised.

4.The RELY Component

Transfer Shield makes use of a high-quality handoff that includes four input channels and four output channels. It may be connected to a maximum 250V/10A AC or 24V/10A DC supply, allowing it to be used to operate lights, motors, and other high-current devices.

5 INFRARED SENSORS

Infrared sensors are electrical instruments used to detect aspects of their surroundings. It does this by emitting or detecting infrared light. Sensors that use infrared light may also be used to measure the amount of heat given off by an object or to detect the presence of human activity.

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6.BUZZER

Bell functions as a kind of electronic sound collector with built-in structure. It is widely used as a speech device in various electronic products such as computers, printers, photocopiers, alarm devices, electronic toys, auto electronic devices, phones, and so on.

7.LDR sensor, number 7.

The LDR sensing module is used to differentiate between light intensities. Connected to the board's AO and DO markings for the basic yield pin and the advanced yield pin, respectively, are the components necessary to produce both types of yield. Due to the force of light, the resistance of LDR devices is minimal in bright environments. The less of an impediment to LDR there is, the stronger the power of light. An adjustable potentiometer on the sensor's knob controls how sensitive the LDR is to light.

8. A TEMPERATURE SENSOR

The semiconductor LM35 temperature sensor is at the heart of our LM35D Analog Temperature Sensor Module. The LM35 Linear Temperature Sensor module provides accurate readings of ambient air temperatures. 10mV per degree Celsius is the affected temperature. This yield voltage

V.AI FOR DEVELOPMENT SERIES

In late spring of 1956, pioneers in artificial intelligence dreamed of creating complicated computers with comparable properties to human intellect. Amazing computers with all the human faculties and the ability to think and figure simply as humans do constitute the concept we call "General AI." Machines with general artificial intelligence have remained the stuff of science fiction. Thin AI refers to developments that can carry out certain tasks assigned by humans, and this is where the state of the art in computer-based intelligence now sits. Face recognition on Facebook and the ability to group similar photos together are examples of precise artificial intelligence. Some hallmarks of human intellect may be seen in these creations. Which part of your brain is responsible for this realisation? Artificial intelligence is the right move. AI is a solution to the problem of enabling AI. Data science, at its core, is the use of mathematical formulas to collect and analyse data in order to draw conclusions and make predictions. It heavily relies on computations that are heavily grounded in factual and scientific advancement in order to naturally exhibit and identify patterns in information. Finding the minimum and maximum values of a capability are common steps in the improvement process. Artificial intelligence (AI) entails the use of development techniques to automatically create a highly accurate prediction or classifier model or to unearth previously hidden instances in data. The following types of output often make use of AI calculations: Unsupervised clustering, supervised multi- and bi-class classification, univariate and multivariate regression, anomaly detection, and recommendation systems (otherwise known as suggestion motor). Using artificial neural

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networks, profound learning is a method for implementing artificial intelligence. These artificial neural networks feature well-defined layers, connections, and informational hierarchy. This paper encourages a variety of leaning techniques in light of these broad understandings of AI and AI. Important aspects of AI and AI are broken out in Figure 6. Artificial intelligence (AI) is the capacity of a computer to learn without being explicitly updated. AI, on the other hand, is the technology that allows machines to mimic intelligent human behaviour. It's normal to be concerned about 'examining' past and future events in a massive data space. With AI and system management, the stion of "follow up on" — that is, whatever action should I do — is of paramount importance.

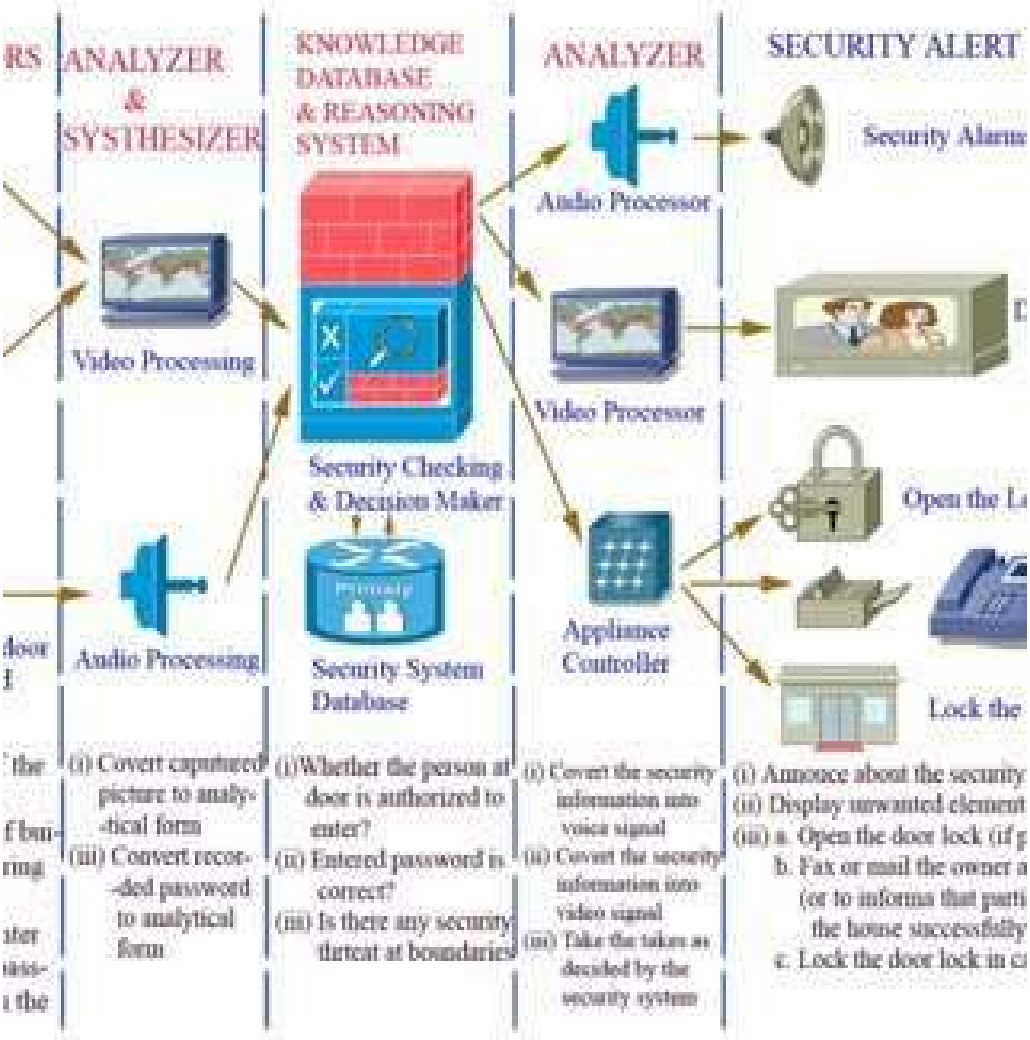

Fig 2: AI Diagram For Home Security

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VI. RESULT

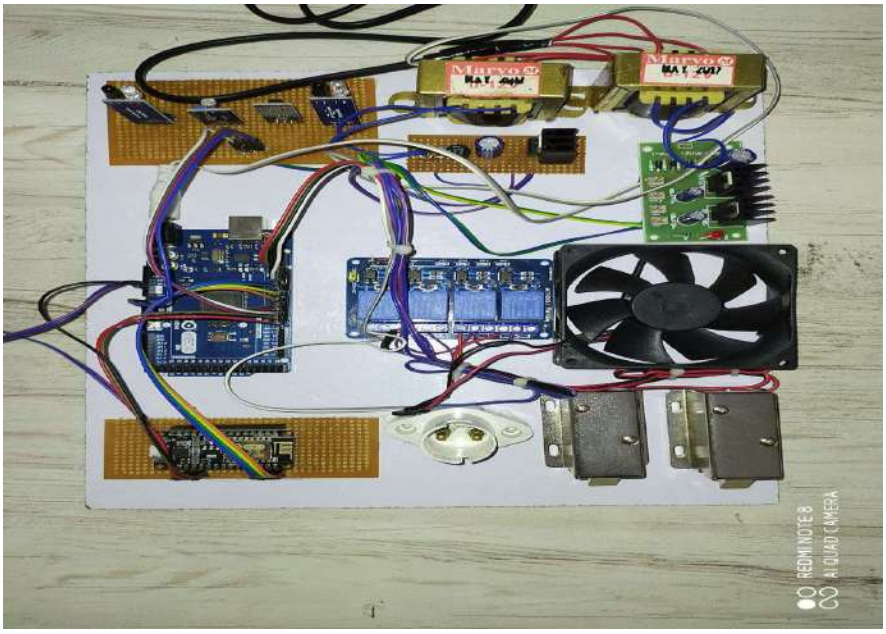

Fig 3: Working Model Of The Proposed System

Results from the effort put in are shown here "Modeled Intelligence-Controlled, Self-Propelled, and More Secure Condo Framework Sensors for measuring temperature, humidity, and infrared light intensity "executed successfully. The project's primary focus is on improving the apartment's entrance locking and security. The locking system for the doors and windows will be connected to the data transfers limited by the Ardinomega acting as a server, and we will be able to transmit control orders using mobile to regulate the locking and unlocking of the apartments' doors and windows. A prototype of an AI-operated, motorised loft framework including strengthened safety measures has been developed.

VII. CONCLUSION AND FUTURE SCOPE

This paper has presented a home administration system. This paper is for the most part centered around defeating ordinary issues looked by the individuals in world where customary power cut-off, unmanaged urbanization, absence of labor in agriculture and cultivating, and so forth are outrightly obvious. Our prototypical framework is material to continuous home security, automation, observing and controlling of remote systems. This usage gives a wise, comfortable and vitality effective home mechanization framework. It additionally helps the old and diversely abled people to control the apparatuses in their home in a superior and simpler manner.

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