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# Smart Caregiver using Artificial Intelligence

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**Abstract:** Healthcare may be a field that's speedily developing in technology and services. A recent development during this space is caregiver observance of patients that is several benefits in a very quick aging world population with increasing health complications. With comparatively straightforward applications to watch patients within hospital rooms, the technology has developed to the extent that the patient will be allowed traditional daily activities reception whereas still being monitored with the employment of recent communication technologies. These new technologies will monitor patients supported the sickness or supported the case. The caregiver observance system victimization for AI. The mounted by hospital in patient rooms in aspect, when observance and speak instruction in delivery in patients. Then victimization spy cam the when patients activities observance in rooms. of these varieties of patients have conditions that square measure higher to monitored incessantly. The doctors will monitor the deterioration or maintenance of the patient whereas additionally advising the paramedics United Nations agency square measure physically with the patients as necessary.

**Keywords:** Raspberry pi 0, Radiofrequency, spycam, voice recognition.

## I. INTRODUCTION

AI Robots are the unreal agents acting within the real-world setting. computing mechanism is geared toward manipulating the objects by perceiving, picking, moving, destroying it. There are those folks WHO clean once every week, and there are those folks WHO clean once the in-laws come back to go to. The attractiveness of the robotic vacuum reaches each camps. Either way, the home is a small amount additional speckless with least human input. Today's computing robotic vacuums are a so much cry from the primary models. that you simply had to trace down, stranded somewhere in your house, by their melancholy, "I'm out of power" beeping. the newest product clean your house, keep in mind the layout to extend potency. Also, dump their own dirt during a receptacle and notice their method back to the charging station in order that they will rejoice. typically speaking, robots are mechanical devices that manipulate the physical world by performing arts easy tasks. Robots are equipped with sensors to understand their setting and effectors to physically assert force on the setting. we will consider robots because the hardware sort of a pc and therefore the AI is that the software system just like the software system. Robots are geared toward manipulating the objects by perceiving, picking, moving, modifying the physical properties of object, destroying it, or to own a control thereby liberating work force from doing repetitive functions while not losing interest, distracted, or exhausted. {this is|this is often|this will be} a technology of AI with that the robots can see. the pc vision plays very important role within the domains of safety, security, health, access, and recreation. pc vision mechanically extracts, analyzes, And comprehends helpful info from one image or an array of pictures. This method involves development of algorithms to accomplish automatic visual comprehension.

## II. LITERATURE SURVEY

SaeidMottaghi et al [1] Remote health observance of senior through wearable thanks to a quickly increasing aging population and its associated challenges in health and social care, close helpful Living has become the put concentration for each researchers and trade alike. the necessity to manage or perhaps scale back care prices whereas rising the standard of service is high government agendas. Although, technology features a major role to play in achieving these aspirations, any answer should be designed, enforced and valid victimisation applicable domain data. [2] Patients' views of wearable devices and AI in care wearable biometric observance devices (BMDs) and AI (AI) modify the remote activity and analysis of patient knowledge in real time. These technologies have generated loads of "hype," however their real-world effectiveness can depend upon patients' uptake. Our objective was to explain patients' perceptions of the utilization of BMDs and AI in care. [3] A Health observance System for senior individuals Living Alone we've developed a health observance system for senior individuals living alone. we tend to monitored the in-house movements of eight subjects by putting infrared sensors in every area of their homes. as a result of their movements were unrestricted, observance might last longer than alternative kinds of observance. Continuous observance was performed for eighty months in total. we tend to found that every subject had a particular pattern of movements. we tend to calculable their health condition by comparison the length of stays in specific rooms, like the rest room, with antecedently recorded knowledge.

If when associate analysis an uncommon state was detected, we tend to knowing the family of the incident. Final choices ought to be created by the relations, not mechanically by laptop computer code. S. Xie et al [4] a wise patient health observance system victimisation IOT. The care observance systems has emerged jointly of the foremost important system and have become technology destined from the past decade. Humans face a drag of surprising death thanks to varied ill health that is attributable to lack of medical aid to the patients at right time.

Effulgence et al [5] the first goal was to develop a reliable patient observance system victimisation IoT in order that the care professionals will monitor their patients, World Health Organization or either hospitalized or reception victimisation associate IoT primarily based integrated care system with the read of guaranteeing patients are cared for higher. A mobile device primarily based wireless care observance system was developed which may offer real time on-line info concerning physiological conditions of a patient in the main consists of sensors, the information acquisition unit, microcontroller (i.e., Arduino), and programmed with a computer code (i.e., JAVA). The patient's temperature, heart beat rate, graphical record knowledge are monitored, displayed and hold on by the system and sent to the doctor's mobile containing the appliance.

J. Wang [6] web of Things (IoT) and cloud computing plays a significant role in today's Tele-monitoring health system. this technique keeps track of patient's physiological parameters through assortment of body sensors' knowledge victimisation Raspberry Pi board. The patient's health card are developed by the doctors and displayed on a webpage wherever doctors and patients will access and communicate one another while not physical presence [1]. victimisation cloud computing, the information will be hold on, updated and accessed from anyplace within the world. it's terribly appropriate for rural areas wherever medical facilities aren't on the market. R. Jangra et al [7] In Remote health observance system victimisation IoT, Body wireless device Network (BWSN) is employed to transmit the patients' health parameters collected through Raspberry Pi microcontroller to the physicians and caretaker wirelessly. Being long vary wireless technology, emergency scenario of the patient's health is quickly detected and timely intervention results in save the lifetime of the patient. Z. principle et al [8] due to costlier care and long waiting time in hospitals, the conception of in-home patient observance system are rising within the recent years. this technique collects knowledge of assorted body parameters through Biosensors, wearable devices and good textiles and it transmits the information to central node server firmly through Cipher text Policy Attribute primarily based coding (CP-ABE) methodology. In turn, the server shares the collected knowledge to the hospitals for more treatment. The server rings alarm to the auto X. bird genus et al [9] throughout emergency scenario. it's terribly helpful for elders and chronic patients World Health Organization need continuous observance. The specialized care observance system for senior individuals could be a growing want within the aging population world. this technique performs basic health checkups by activity the body parameters frequently and report the information to the doctors. The result knowledge are then displayed as statements in an exceedingly net application wherever doctors and patients will move with one another. Y. Sun et al [10] IoT primarily based good care with the assistance of good devices and objects improves the care observance system effectively, therefore by reducing the inefficiencies of existing care system. good devices with new and upgraded technologies enhances the information accuracy to be collected, period accessibility of patient's condition, intelligent integration of information collected, maintaining the integrated knowledge well through cloud service, etc. L. Ming dynasty et al [11] It facilitates finish to finish observance screen through 3 steps. Firstly, the \$64000 time health parameters are measured through wearable sensors and transmitted to a wise phone that shows the patient health standing in graphical interface. Secondly, this technique provides a knowledge to loved one and doctor through net interface for more observance. Thirdly, I provides real time alarm if the patient is at emergency scenario like heart failure, etc. Despite observance, there are quite few challenges in victimisation the wearable trailing devices for a protracted time. Firstly, the daily use of wearable trailing devices relies in the main on little size, rough use and low energy consumption. X. Liu et al [12] second, the most important challenge is of the accuracy, validity and integrity of activity knowledge with alternative devices. Thirdly, the usability and also the experiences of the user with the device and its friendly supporting computer code play important role in continued regular and long amount use of wearable trailing devices. X. bird [13] Temperature In this paper, we have shown a design of a new remote heart rate and body temperature monitoring device. The final results of our approach could be a remote health condition activity system with a exile design which will be adopted in many numerous application elds. The system has been tested and valid for some biosignals such as heart rate and body temperature. The bio signals are measured in a real time with a better correctness however additional price effective than the stager measuring system. X. Liu et al [14] Technology plays the major role in health care not only for sensory devices but also in announcement, recording and display device. It is very important to monitor anumber of medical parameters and post operational days. thence the most recent trend in care communication methodology victimization IOT is adapted. Internet of things serves as a compound for the health care and plays prominent role in wide vary of care applications.



T. Jayachandran et al [15] conferred the state of AI primarily based AI. They planned a wise caregiver victimisation AI and its applications its Wi-Fi and RF position and agglomeration {based|based mostly|primarily primarily based} finding the shortest path and real time implementation of Raspberry pi zero based wireless device specification with the Wi-Fi module. Finally, analyze the principles of Location-based automaton has moving patient rooms the when observance employed by spy cam then speak alert within the system victimisation oftenness managing system.

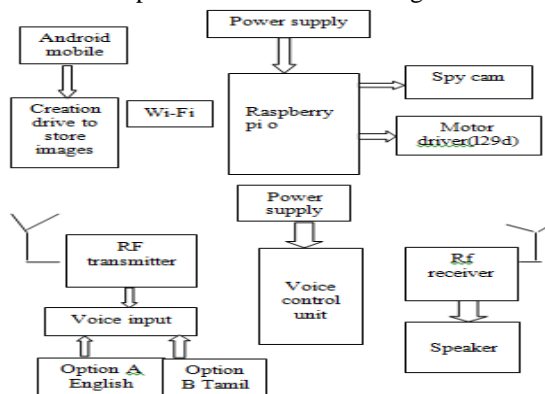
### III. BACKGROUND METHODOLOGY

Smart caregiver victimization AI that comprise of AN raspberry pi controller, Wi-Fi module, spy cam , speaker used RF ,LDR motor driver, robot mobile and MCU area unit employed in the project. once the patient is in threat, the device watching the patient activities and directions employed by sound speaker. For a Zero and a standard keyboard and mouse, a one Amp provide is ample. If you may be victimization power hungry USB peripherals while not a hopped-up USB hub then a a pair of Amp provide is sensible. should have - a small South Dakota card with AN software and a high-quality 5V power provide to power your board All merchandise area unit foreign from the USA. All electronic merchandise should be used with a step down/up convertor for Indian voltage compatibility At the guts of the Raspberry Pi Zero W could be a 1GHz BCM2835 single-core processor, identical because the B+ and A+, with 512MB RAM. The existing system monitors solely the record of patients WHO area unit admitted within the hospitals. however we have a tendency to area unit developing the system which may be helpful for a person. The system unendingly monitors the guts beat rate and temperature of a user. The patient watching system might embrace a sensing system positioned beneath a patient and separated from the patient by a minimum of one layer of fabric, the sensing system comprising a plurality of device cells, the device cells mechanically grouping device knowledge associated with the patient parameters. The patient watching system might additional embrace AN interface for receiving the collected device knowledge from the sensing system and a watching engine receiving the collected device knowledge from the interface. The oftenness victimization transmit within the signal then once receiver the information then alert within the speak signal in patient rooms in hospital.

### IV. PROPOSED –SMART –CARGIVER USING SYSTEM

Internationally, as anticipation continues to rise, several countries face a severe shortage of direct care employees. The health hands is aging, and replacement remains a challenge. computer science health observation technologies might play a unique and vital role in filling the human resource gaps in caring for older adults by complementing current care provision, reducing the burden on family caregivers, and rising the standard of care. still, opportunities brought on by these rising technologies raise moral queries that has got to be self-addressed to confirm that these machine-controlled systems will really enhance care and health outcomes for older adults. several industrial devices and systems, as well as those who ar designed into good phones that ar promptly accessible to mass customers, already collect eudaemonia information (e.g., physical activities, dietary information) which will offer a snap of AN older adult’s general life style. These recreational merchandise ar typically not subjected to identical regulative management as medical devices or applications that specifically collect health information . AI-powered health observation technologies build on these capabilities however transcend collection and pursuit varied indicators. A “smart sock” detector or a detector equipped shoe innersole to delineate phases of individual steps unceasingly collect and method raw info, store them regionally, and send them to the non-public server .Minimal Weight of the Sensors Low-power operation to allow prolonged continuous observation Patient-specific standardization, calibration and customization.

Proposed Model – Block Diagram



## V. RESULT



The sensing element can record the movement of in a very septic direction which can lead to the movement of the mechanism within the various direction. Android, AN software package developed by Google for sensible phones, tablets and such variety of bit screen phones. With comparatively straightforward applications to observe patients within hospital rooms. These new technologies will monitor patients supported the health problem or supported the case. The caregiver observance system exploitation for AI. The fastened by hospital in patient rooms in aspect , anytime observance and speak instruction in delivery in patients.

## VI. CONCLUSION AND FUTURE WORK

As the technological demands ar increasing, the medical systems are updated with the new advanced technologies ( sensible medical systems); but, there ar still many challenges, like to hold the mobile set info and therefore the mobile property problems, primarily gift within the aid systems. aboard with this, the price is additionally a giant issue, raising whereas change the prevailing systems with the new developments. Therefore, the cloud computing platform is one among the most effective solutions within the current age to fight against the problems. during this study, supported the medical structure specifications and necessities for communication, together with the protection necessities, non-public cloud computing setting is meant and shapely wherever the medical info of heart patients UN agency beneath registered or resided within the hospital, within the medical ward and out of doors of the medical ward within the premises of the hospital, is accessed and monitored in period manners. Through this presentation we've given a summary of the assorted works worn out mobile health and a few variations between them. there's a high penetration within the health sector with the arrival of recent vary of sensible phones and higher customizable OS. Mobile health watching system is here to remain for the longer term. Mobile health isn't simply watching, it'll and will grow as a user community to assist one another and serve with efficiency throughout emergency things.

## REFERENCES

- [1] Chang SI, Ou CS, Ku CY, principle M (2008). A study of RFID application impacts on medical safety". *Int J negatron Healthc.*;4(1):1-23.
- [2] Sagahyroon A, Raddy H, Ghazy A, Suleman U ( 2009). "Design and implementation of a wearable care observance system". *Int J negatron Healthc.*;5(1):68-86.
- [3] Stafford TB, Myers MA, Young A, Foster JG, Huber JT (2008)." operating in associate eICU unit: life within the box". *Crit Care Nurs Clin North Am.*;20(4):441-450.X. Chen, "Artificial Intelligence-Empowered Path Selection: A Survey of hymenopteran Colony optimisation for Static and Mobile detector Networks," in *IEEE Access*, vol. 8, pp. 7149771511,2020,doi:10.1109/ACCESS.2020.29843.
- [4] Mahoney CA, Ware JE, Lu JFR, Sherburne CD (1994). The MOS 36-Item Short-Form Survey (SF-36). " Tests of information quality, scaling assumptions, and responsibility across various patient teams Master of Education Care" ;32: 40–66.2.
- [5] Brazier JE, Harper R, Jones NMB, (1992) et al. "Validating the SF-36 health survey questionnaire: new outcome live for medical aid.BMJ" ;305: 160–164.
- [6] Harwood RH, Gompertz P, Ebrahim S. (1994) Handicap one year when a stroke: validity of a brand new scale.*J Neurol brain surgeon Psychiatry" ;57: 825–829.4.*
- [7] Hunt SM, McKenna SP, McEwen J, (1981)et al. The "Nottingham Health Profile: subjective health standing and medical consultations Soc Master of Education ;15A: 221–229.5.
- [8] Kapa S, Pierce T, Hayes DL, Holmes DR Junior,Asirvatham SJ (2011)."Electromagnetic interference of flux based mostly motorcar identification technologies in care settings".;4110:314–32.
- [9] Carranza N, Febles V, Hernandez JA, Bardasano JL, Monteagudo JL, Fernandez Diamond State Aldecoa JC, et al (2011 ) "Patient safety and magnetism protection": a review. *Health Phys.*
- [10] Calcagnini G, Mattei E, Censi F, Triventi M, Lo SR, Marchetta E, et al (2011)"Electromagnetic compatibility of WLAN adapters with life-supporting medical devices". *Health Phys.*
- [11] Gibson HM.( 2006) Managing your wireless spectrum... "Making wireless technology add your hospital. *Biomed Instrum Techno*"l. Suppl:30–36.
- [12] obtaining the message: results of our survey oncellphone/smartphonepolicies.*HealthDevices.2013;42(4):126–132.*Sagahyroon A, Raddy H, Ghazy A, Suleman U ( 2009). "Design and implementation of a wearable healthcare monitoring system". *Int J Electron Healthc.*;5(1):68-86.





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