PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

TEAM DETAILS:

Team Leader:

- Thirupura Sundhari.K , Department of ECE

Team Members:

- Srilalitha.R , Department of ECE
- Sathana.R , Department of ECE
- Sneka.S , Department of ECE

PROJECT INFO:

System Required:

- RAM-Minimum 4GB Processor-Min. Configuration OS-Windows/Linux/MAC

Description:

- The Medicine Reminder System is built to remind the elderly people who often forget to take medicine at proper intervals. This App makes the caretaker stress free and thus helps to maintain the health of elderly by providing prompt voice commands at the correct time.

LITERATURE SURVEY

- **Seema S Kanagond - Dept. of E & C, KLEIT, Hubballi India, Smart assistive device, 2020 IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER), 30-31 October 2020**
  - ➔ There have been attempts to use the new technology to enhance many aspects of human life as technology has advanced. With the development of technology, the healthcare industry has undergone a paradigm shift. The primary goal of the work outlined in this paper is to create an aid for elderly people with speech and mobility impairments. Senior citizens can be helped with a touch-screen operated smart assistive device. Arduino Uno, a 433MHz RF transmitter and receiver, a 2.4-inch TFT LCD touch shield, a 16*2 LCD module, and an I2C module make up the system. For their basic requirements, elderly individuals can converse with family members using a TFT touch shield. This will enable the caregiver to react appropriately. This technique is beneficial in that it.

- **P.Ranjana - Department of Computer Science and Engineering, Hindustan Institute of Technology and Science, Chennai India and Elizabeth Alexander - Department of Computer Science and Engineering, Hindustan Institute of Technology and Science, Chennai India,**

Automatic Medicine Reminder System, 2018 IEEE International Conference on Computational Intelligence and Computing Research (ICCIC), 2018

- ➔ Humans struggle to remember the medications they need to take in today's world. This essay suggests a design for an automated pharmacy and medication reminder system. This system can eliminate irregularities in taking recommended dosages of pills at the times that the doctor has prescribed and can change from methods that are primarily dependent on human memory and insignificant regulations. As a result, people are liberated from making mistakes due to human error, such as taking pills at different times with the wrong dosage. Medicine boxes come in a variety of shapes and sizes. The suggested medicine box would make it easier for anyone taking medication, particularly elderly individuals, to remember to take their pills on time. Additionally, by continuous health monitoring, such as blood pressure and electrocardiograms.

- ❖ **Maresova, Petra; Tomsone, Signe; Lameski, Petre; Madureira, Joana; Mendes, Ana; Zdravevski, Eftim; Chorbev, Ivan; Trajkovik, Vladimir; Ellen, Moriah; Rodile, Kasper, Wearable devices, Current Alzheimer Research, Volume 15, Number 10, 2018, pp. 975-983(9), 2018**
  - ➔ Numerous studies started to draw attention to the issue of the rising incidence of Alzheimer's disease in industrialized nations in the 1990s, particularly in light of demographic change. The 21st century is also typical for the advancement of cutting-edge technology that have permeated many facets of human life. Seniors can benefit from things like digital gadgets, sensors, and intelligent software that improve communication and provide caretakers more control. The purpose of the paper is to present a current overview of how technological solutions are used to enhance the health and safety of people with Alzheimer's disease. The issues and requirements of elderly people with Alzheimer's disease (AD) and their caretakers are first described. Second, a scoping review of the recommended technology solutions is conducted to help this particular patient population. In this scoping review, materials from the libraries Web of Science, PubMed, Springer, ACM, and IEEE Xplore were utilized. Four impartial reviewers looked through the identified records and chose pertinent articles that were released between 2007 and 2018. 6,705 publications in total were chosen. 128 complete papers were screened in total. According to the kind and application of technologies, the results from the pertinent research were further classified into the following categories: devices, processing, and activity recognition. The top technological advancement in the gadget category is ambient noninvasive sensors and wearables. However, the introduction and use of these technologies present problems with respect to acceptability, longevity, usability, communication, and power requirements.

- ❖ **Naveen Kumar Chitkara University, Surya Narayan Panda Chitkara University, Preethi Pradhan Chitkara University, Rajesh Kumar KaushalChitkara University, Monitoring via remote, 2018**
  - ➔ Much research has been done recently to convey critical patient parameters utilising IOT (Internet of Things). WBAN (Wireless Body Area Network) and sensors are used to

transmit patient information to the medical database. This has demonstrated a significant potential for transmitting the patient's vital signs to a distant site. Particularly when a patient is in transit, remote patient monitoring, including vital signs, sound, and video, is to be transmitted. The ideal time for initiating treatment is reduced by communicating the patient's crucial parameters to a professional, which also enables the emergency crew to be better prepared. This will make it easier for a doctor to reach a diagnosis.

- **Hayley Robinson, Bruce MacDonald & Elizabeth Broadbent, Assistance through robots, International Journal of Social Robotics volume 6, pages575–591, 2014**
  - ➔ The goal of this review was to pinpoint the needs elderly adults have and the accessible fixes. Particularly, the robotic solutions are examined, criticized, and prospective development areas are noted. We looked through the literature for technology solutions to these issues as well as factors that affect nursing home admission. Physical decline, cognitive decline, health management, and psychosocial challenges are the main problems older adults face. There are robots that could address some of the concerns that have been highlighted, but there are still some areas where they could be developed robots with many functions, interventions to stop physical deterioration from happening, a variety of cognitive stimuli, and health education. Robots made to help with physical assistance and medical care should look serious to lower acceptance hurdles.

- **E. Broadbent, R. Stafford & B. MacDonald, Guidance through robot, International Journal of Social Robotics volume 1, Article number: 319, 2009**
  - ➔ The demand on healthcare services is rising as the population is becoming older more quickly. It has been suggested that using robots could help individuals stay secure and healthy in their own homes. Nevertheless, other robots have received a bad reception despite the demand for such assistance gadgets and the success of other healthcare robots. This article summarizes the factors that have been identified as influencing responses and evaluates the literature on how people react to healthcare robots. By carefully evaluating the demands of the human user and then tailoring the role, look, and behaviour of the robot to these needs, it would be possible to boost the adoption of healthcare robots. Because robots can only do so much, changing consumers' expectations might be another method to improve acceptance.

- **Divya Ganesh - Department of Electronics and Communication Engineering, Sri Sairam Engineering College Chennai India, Gayathri Seshadri - Department of Electronics and Communication Engineering, Sri Sairam Engineering College Chennai India, Sensors with Artificial Intelligence, 2019 International Conference on contemporary Computing and Informatics (IC3I), 12-14 December 2019**

- ➔ The lifespan of people has grown as a result of advances in medical research and technology, and as a result, the mortality rate of the elderly has significantly dropped. Elderly people frequently experience cognitive decline and need immediate medical attention. If this is not done, deadly repercussions may result. The necessity to develop affordable assistive healthcare technological solutions to take care of the elderly and provide them with the greatest tech-friendly experience emerges from the absence of social care support for older seniors. The ideal answer for ongoing and remote monitoring of a person's health can be found in intelligent homes, an environment of sensors with artificial intelligence connected with home appliances. This allows seniors to control multiple devices and receive immediate assistance from family members and healthcare providers and/or visit hospitals frequently. In essence, an intelligent bed can assist seniors in avoiding bedsores and slipping out of bed by keeping an eye on their position while they are sleeping. In order to reply to the commands given by the individual, the most recent Google Duplex artificial intelligence (AI) will be employed as a voice-controlled speech recognition system and personal assistant. We establish connectivity between the devices, the user, and his or her network via the Internet of Things (IoT). The main component of this system is a Raspberry Pi, which gathers data from the sensors and analyses it to control home appliances including lights, fans, doors, alarms (for emergencies), televisions, and other equipment. Additionally, there is an emergency module that has sensors attached to the user's body and lets caregivers, family members, or friends know how the user is doing. It continuously checks the individual's physical state and notifies his or her network in case of emergency.

- ❖ **Akhilesh Agrawal - Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Science Wardha India and Vedant Yede - Dept. of E and TC Engineering, Y. C. College of Engineering, Nagpur India, Pill reminder, 2021 Fifth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC), 2021**
  - ➔ Humans make an effort to always maintain the health and fitness of their loved ones. What if they neglect to take their medication and end up getting sick as a result? As a result, the medical facility sees a lot of patients who need medication, making it challenging for us to remember each patient to take their prescription at a certain time. The patient must be reminded to take their medication frequently using the traditional method. However, in this digital age, humans use machines to perform some tasks. Pill leftovers can be used in a variety of contexts, including by patients at home, medical professionals in hospitals, and others. This study demonstrates how an advance pill leftover configuration can eliminate asymmetry in reminding the patient to take their medications at the appropriate times and in the recommended dosages. With this method, users move from manual supervision to automatic memory.

- ❖ **Adriana Alexandru; Dora Coardos; Eleonora Tudora – auth, IOT based remote monitoring, 2019 22nd International Conference on Control Systems and Computer Science (CSCS), 28-30 May 2019**

- ➔ The widespread use of Internet of Things (IoT)-based smart applications can lessen the social burden caused by an ageing population and its rising healthcare and assistance needs. A sizable amount of data about the elders and their everyday activities is generated by connected sensors and gadgets inside their homes. IoT and Big Data Analytics (BDA) are crucial tools for gaining information and support for enhancing the quality of life for older individuals by enhancing the role of information and communication technology (ICT). IoT analytics can help to personalize apps for both older persons and the rapidly expanding IoT data was gathered from elderly people's smart homes. To handle the complexity and supply of the necessary resources for online and offline data processing, storage, and analysis, a solution based on the utilization of fog nodes and cloud systems is proposed. The platform architecture's requirements and design are highlighted. We provide an architecture for a platform based on fog computing nodes paired with cloud computing that delivers effective near real-time processing of the large data produced by IoT systems that offer insights and data processing and analysis tools into the cloud. By solving cloud latency challenges, this integrated architecture has a significant influence on time-sensitive applications.

- ❖ **P.A. Harsha Vardhini; M.Shiva Harsha; P.Naga Sai; P. Srikanth, Smart medicine box, 2020 12th International Conference on Computational Intelligence and Communication Networks (CICN), 25- 26 September 2020**
  - ➔ The consumption of medications has dramatically expanded and has spread to all people. Many terrible diseases are being healed thanks to the rapid advancement of medical technology. The development of IoT offers a number of answers for the significant difficulties facing health systems. The development of smart cities and houses combined with e-medicine health services boosted the idea of an IoT-based health ecosystem that is patient-centric. It's important to remind oneself to take medications as directed. Amnesia, or memory impairment, is the medical term for memory loss or extraordinary forgetfulness. The suggested medication assistance system keeps track of the prescription schedule and prompts older people who have trouble remembering to take their medications on time. Cost-effective smart medicine boxes have been created and put into use so that even the old, the poor, and uneducated can afford and use them.