



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 10, Special Issue 2, December 2021

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.569

Exploring the Application of Smart IOT Devices Specific to Senior Citizen Care

Ms. R.Smeeta Mary¹, Ms. B.Usha², Ms.P.Nancy Vincentina Mary³

Asst. Professors, Dept. of MCA, Fatima College, Madurai, Tamilnadu, India^{1,2&3}

ABSTRACT : The population of elderly people had grown and the number of people living in solitude has also been on rise. As in every other application, technology could play a major role in contributing towards the day to day living of the elderly people. With the momentous availability of internet connection, Wi-Fi technologies and smart wearable devices, senior citizen care could be made more comfortable. Smart IoT devices are extensively used to support elderly people and embedding them in everyday life thus reduce the issues and expenses for their healthcare and living and provide a better life quality to them. This paper aims at exploring the availability of variety of smart IoT devices that are specific to the senior citizens.

I. INTRODUCTION

The world is being changed in many ways with Internet of Things. With the ease of availability of Internet connections, Wi-Fi technologies and sensors, the usage of wearable devices are escalating. All these components have cleared a direction for the IoT within the ordinary lives of humans and in several sectors of the economy, inclusive of senior citizens care. Caretakers were held responsible of manually monitoring the senior citizens. With the advent of IoT devices, such as wearables, telemedicine and smart home devices, processes and tasks to support senior citizens could be automated. Caregivers, health care professionals and family members can better support the well-being of seniors and their ability to comfortably and more manageably live alone through the use of IoT technology. IoT for senior care applications typically revolve around health monitoring, safety and home security monitoring, and interaction with the outside world. Healthcare smart devices in particular are one of the fastest growing sectors of IoT, showing tremendous potential to help older adults care for themselves more easily. IoT devices can make life easier for seniors. One of the biggest ways they can help is by making everyday tasks easier. IoT devices can help make independent senior living safer. IoT devices are used to ensure safety by monitoring the movement, tracking changes in air quality, temperature, humidity, or carbon monoxide, notifying the caregiver if levels fall below an acceptable level.

Best Iot Devices For Senior Citizens

Aging in place is very essential to many elders. After years of independence, the prospect of losing a way of life as getting older is difficult to contemplate. To spend the golden years in as much comfort as possible some upfront planning is necessary. Strong financial and economic strategies should be in place, but the technical preparations will be too hard. Aging affects everyone, regardless of how healthy or how well to take care of health. Technology must assist in dealing with some seemingly unavoidable physical, mental, and emotional changes. For example, the trouble remembering what prescriptions to take or when to take them.

II. RELATED WORK

Smart Pill Dispensers

Medications can be lifelines to good health for people of all ages. When it comes to taking a medication exactly as prescribed, making a mistake can have disastrous consequences. Many people wish to take their prescriptions appropriately, but obstacles often get in the way. It can be difficult to read small labels and distinguish between different tablets when your vision deteriorates. Another problem is that it's all too simple to forget to take medications or to take them at the wrong time. Smart pillboxes, which are part of the Internet of Things (IoT), use digital technology to ensure that medication regimens are followed. The GMS Med-e-lert Automatic Pill Dispenser, for example, is an automated pill dispenser with 28 separate trays. The dispenser can hold up to six doses per day, with

each dose containing 18 aspirin-sized pills. The dispenser places the required dose in a delivery slot and activates an alert and flashing light when it's time to release medication. The user has 30 minutes to take the medication after it is delivered.

Smart Medical Alert Devices

The smart device discussed will be a smart watch, according to HelpCloud's review, one of the best-selling medical alert devices. Instead of a medical alert device worn around your neck, a medical alert smart watch is both convenient and stylish. The Freedom Guardian emergency response system was recently released by Medical Guardian. The watch shows the current time, date, and weekday in large, easy-to-read displays. Because it's a GPS watch, it can also be used to contact a loved one or emergency services in the event of an accident.

Smart TVs

Smart televisions may connect to the internet. A smart television can stream web-based TV shows and movies from providers like Netflix, HBO, and YouTube using WiFi or Ethernet. Even while all smart TVs allow to access material to watch, they each offer their own set of benefits and drawbacks. The TCL S405 is one system that has proven to be beneficial to senior citizens. The S405 from TCL is a Roku TV with excellent picture quality. A Roku TV is a self-contained smart TV with a simple, user-friendly interface.

Roku's built-in TV display makes it simple to install the apps you want to watch the most. On the Roku, it is possible to view free video from PBS, YouTube, and other sources.

Smart Beds

It's simple to alter the hardness, position, temperature, and other features of a smart bed. If all of the customizing options weren't enough, some smart beds also let to share control with a companion.

Despite the fact that there is a lot of smart bed technology on the market, SleepIQ has a lot of hype, and for good reason. SleepIQ is Sleep Number's patented technology that tracks the heart rate, breathing, motion, bed exits and overall sleep quality. SleepIQ also to create a sleep goal, which is essentially the number of hours of sleep every night.

Smart Fridges

While specific capabilities vary by refrigerator, most smart fridges can assist with tasks such as keeping track of expiration dates, playing music while cooking, and producing grocery lists. Although the moniker "Family Hub" may dissuade some seniors from purchasing a refrigerator, this should not be the case. Plan meals, schedule days, and shop from the fridge with Samsung's Family Hub refrigerator. It can make shopping lists on the refrigerator and then purchase food using the touchscreen. S Voice helps to read step-by-step instructions and record voice. When ready to utilize the display, it will be met by a large, user-friendly menu. The LCD may also be utilized to reflect a TV, allowing to keep up with favorite media while preparing meals. A built-in camera within the fridge allows to see everything in the spacious, four-door compartment. The camera comes in handy when shopping and attempting to recall exactly what you need to buy. After coming home, the fridge can assess all new items and propose meals that use the ingredients have on hand.

Smart Home Assistants

When it comes to smart devices, one of the first things is the type of smart hub. It is a hub of some sort to have multiple smart devices but be able to operate them all from one location. What devices are classified as hubs is a point of contention in the technological community. Some people argue that smart home assistants such as the Amazon Echo or Alexa are unsuitable for use as hubs. A smart home assistant, on the other hand, may be the ideal addition to your technological armory, depending on your demands. Speaking with a tech support business like My Fast PC will help you figure out exactly what type of hub is required. When it is needed to speak with a skilled employee that can assist in determining exactly what is required and ensuring that proper assistance that is required is received and to keep the system functioning properly. Because of its digital assistant, Alexa, the Amazon Echo is a popular item among adults. To enlist Alexa's assistance, say, "Alexa, remind me that I have a doctor's appointment tomorrow at 9 a.m." Alexa can also answer almost any query you have, from "Alexa, what time is it?" to "Alexa, how is the weather outside?" Echo

may be used to control your gadgets with Alexa as your hub. You could say to Alexa, "Alexa, turn off the lights in the living room and turn on the lights in the bedroom," as you walk from one area to the next. You can tell Alexa what temperature you want your house to be without ever touching a control panel if you use a smart thermostat. Alexa also offers a feature called "Ask My Buddy," which allows you to contact multiple individuals when you need assistance. So, if you ever fall or find yourself in a difficult situation, you can have Alexa text or phone a loved one to warn them.

Smart Lights

Philips Hue is one of the better starter packages, which includes white, colored, or a combination of the two lights. Philips Hue also offers a wide range of table lamps, light strips, and candle bulbs at various price points. Use Alexa or another voice assistant to operate your Philips lights once they've been installed. Philips also has a smartphone app that allows you to use your phone as a light remote. There's also a Hue Motion Sensor that regulates lights automatically if no other controls appeal. The Hue sensor will turn on the lights when you enter a room, which is ideal for a bathroom, cellar, or laundry room. The Hue sensor turns off the lights when motion is no longer detected.

III. CONCLUSION

Naturally, seniors have the same concerns about privacy and security as other customers when it comes to the internet of things. Corporate data gathering and use, the risk of hacking, and simple technological faults can all be frightening aspects, and both technology businesses and users must consider them. For a large percentage of seniors, however, the prospect of freedom and "ageing in place" rather than in nursing facilities alleviates these fears. In the CTA poll, 64 percent of seniors indicated they would utilize monitoring and safety technology, and 61 percent said they would use technology that supports active ageing and increased independence. As the population ages and families become more dispersed, technology becomes one of the most important tools for keeping elderly people active, healthy, and connected to the outside world.

REFERENCES

- [1] Majumder, S.; Aghayi, E.; Noferesti, M.; Memarzadeh-Tehran, H.; Mondal, T.; Pang, Z.; Deen, M.J. Smart Homes for Elderly Healthcare-Recent Advances and Research Challenges. *Sensors*, 2017
- [2] Van Hoof, J.; Demiris, G.; Wouters, E. (Eds.) *Handbook of Smart Homes, Health Care and Well-Being*; Springer:Cham, Switzerland, 2017
- [3] Blackman, S.; Matlo, C.; Bobrovitskiy, C.; Waldoch, A.; Fang, M.L.; Jackson, P.; Mihailidis, A.; Nygård, L.; Astell, A.; Sixsmith, A. Ambient Assisted Living Technologies for Aging Well: A Scoping Review. *J. Intell. Syst.* 2015
- [4] Deen, M.J. Information and communications technologies for elderly ubiquitous healthcare in a smart home. *Pers. Ubiquit. Comput.* 2015
- [5] He, W.; Goodkind, D.; Kowal, P. *An Aging World: 2015*; US Census Bureau: Washington, DC, USA, 2016.
- [6] Healthy Aging Begins at Home. Available online: <https://bipartisanpolicy.org/library/recommendationsfor-healthy-aging/> (accessed on 17 July 2017).
- [7] Health Spending. Available online: <https://data.oecd.org/healthres/health-spending.htm> (accessed on 17 July 2017).
- [8] Mynatt, E.D.; Melenhorst, A.-S.; Fisk, A.D.; Rogers, W.A. Aware Technologies for Aging in Place: Understanding User Needs and Attitudes. *IEEE Pervasive Comput.* 2004, 3, 36–41. [CrossRef]
- [9] Atzori, L.; Iera, A.; Morabito, G. The Internet of Things: A survey. *Comput. Net.* 2010, 54, 2787–2805.



**Impact Factor:
7.569**



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 **9940 572 462**  **6381 907 438**  **ijirset@gmail.com**



www.ijirset.com

Scan to save the contact details