PERSONAL ASSISTANTANCE FOR SENIORS WHO ARE SELF-RELIANT

Ideation Phase – Literature Survey

Abstract— People typically undergo a health decline as they age, including becoming weaker, more susceptible to sickness, having less eyesight ability, etc. As a result, elderly persons require extra medical attention, particularly from family members or their own doctors and nurses. On the other hand, as the world's old population grows quickly, more people will require special care. Therefore, the goal of this research is to create a mobile phone application that will assist senior individuals and their family members in keeping an eye on and monitoring the health of the elderly.

KEYWORD – MONITORING ,INTERNET OF THINGS (IoT), MEDICINE/DRUGS, REMAINDERS, ELDERLY, HEALTH

1. INTRODUCTION:

The development of the Internet of Things (IoT) has made it possible to realize the dream of a personal assistant for independent elders. They can readily determine their medication/drugs based on their comfort level, including the dosage they should be taking. For additional processing, this data is transmitted back to the cloud. The elderly or patients who are essentially forgetting their usual schedule for taking the medication or drugs that they must take. Therefore, our project is more beneficial for them and all at-risk individuals in order to prevent this kind of activity.

2. LITERATURE REVIEW:

[1]. "Elderly Health Assistance Application using mobile phones" - 2017

The goal of their research is to create a mobile phone application that will assist older individuals and their family members in keeping an eye on and monitoring the health of the elderly. This app contains features to track the whereabouts of the elderly, remind them to take their medications, remind them of their doctor appointments, record their medical history, and connect them to a family member or personal doctor in an emergency. 94% of respondents agreed that the application is extremely beneficial and has the potential to function well based on the experimental findings of the application to the participant and the test with the questionnaire on the potential users. A capability that uses GPS and Google Map API to locate an older mobile phone is also available. When an elderly person gets lost and cannot remember how to go back, they can use this tool. The user's location can be used in this application's feature to find nearby hospitals and pharmacies using a Google Map. To increase elder health information, particularly on harmful conditions, this application may be combined with hardware such as heat sensors, blood pressure sensors, glucose sensors, etc. in the future.

[2]. “Health monitoring and voice assistance featured autonomous elderly care serviced robot”

In this study, a mobile service and assistant robot that is being created for the world's and our nation's burgeoning older population will aid the user in meeting everyday demands and supporting living alone. The mobile robot will be able to respond to voice instructions and act as the user's personal assistant thanks to voice communication assisted by artificial intelligence. Additionally, because to its autonomous mobility, the robot will go to the places that the user specifies and will stand close to them. By offering interface assistance with the screen that will be mounted on the robot, it aims to promote human-robot engagement.
Evarobot is a platform for moving robots. With Evarobot, a mobile robot platform powered by the ROS (Robot Operating System), users may experience autonomous movement by having the robot follow them around their homes. Additionally, speech responses are supplied to the user in response to voice commands that are recognised by the Google Speech API. Yaver and the user might communicate through an interface and voice control. Yaver has been given the ability to carry out the user's positioning requests. The Google speech recognition API was used to correctly recognise speeches and carry out supplied commands. With the aid of task management, Yaver was able to carry out the directives and transition into the new work standby state. Yaver uses a fuzzy-based health anomaly detection system to examine the wristband's health data. It aims to give the user physical support with the aid of a robotic arm that will be included in later experiments.

[3]. “Monitoring and detecting outliners for Elder’s Life activities in smart home:A case study ”-2017

In order to enable an old person remain safely in his or her home for a longer period of time without visiting hospitals, they have thought up a technique for monitoring and diagnosing abnormal behaviour of health data collected from a smart home. We go about it by employing statistical methods. A network of wireless sensors is built in an intelligent environment where the proposed technique is used. They make use of actual sensor data that was taken from a smart home where a senior citizen lived alone for a year. The findings of the experiment demonstrate the effectiveness of the statistical test Modified Thompson tau in identifying both typical and aberrant behavioural patterns. The statistical test known as the modified Thompson tau is used. Data that was retrieved from a wireless sensor network was intended to be examined for potential outliers and anomalies. Finding some extremely long stays by older people in a specific location is the goal of identifying these outliers (unusual in normal days). In order to prevent the elderly person from developing chronic diseases, the care system can use the study's data to anticipate and track the elder's health status over time.

[4]. “Personal Health Assistance for Elderly People via Smartwatch Based Motion Analysis”-2017

A novel method for a personal health aide for senior citizens using smartwatches is given. An app for the smartwatch that uses an artificial neural net (ANN) analyses the wearer's movement patterns. The ANN highlights daily actions and events that are pertinent to health (EDLs, ADL). The app's system architecture, the method for gathering data, the choice and creation of appropriate data models, and the benefits of ANNs over other identification engines are all explained. The features of the acknowledged ADLs will be used to continually calculate the wearer's wellness, ensuring a self-determined lifestyle in the familiar environment until very old age. In the event of a determined emergency, these smartwatches enable the establishment of an autonomous speech link to clarify the situation immediately. The wearer's actual steps taken and/or heart rate and pulse are the only things that modern smartwatches can directly measure. Condensed sensor data and appropriate comparisons with data gathered, as well as lessons learned from the past, must be used to draw all other conclusions on the wearer of a smartwatch's welfare and potential health risks. On current commercial smartwatches, EDL and ADL identification based on an ANN provides the essential input for determining the wearer's wellbeing.

The most modern wristwatch operating systems will only now be able to enable smartwatches' durable background operations, which are necessary for the continuous, reliable detection of the EDL and the ADLs outlined (OSs). Even in circumstances of a change in smartwatch models or even a significant OS upgrade, the sensitivity of the particular model will demand a significant retraining.