# V.S.B.ENGINEERING COLLEGE, KARUR

**Department of Computer Science and Engineering IBM NALAIYA THIRAN**

# LITERATURE SURVEY

**TITLE** : **Personal assistance for seniors who are self-reliant**

**TECHNOLOGY** : Internet of Things

**DOMAIN NAME** : Health Care

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**MENTOR NAME** : Latha periasay

**ABSTRACT** : A flexible and extensive digital platform for Self-reliant person is presented, exploiting the most advanced technologies of the Internet of Things, such as Radio Frequency Identification, wearable electronics, Wireless Sensor Networks, and Artificial Intelligence. Thus, the main novelty of the paper is the system-level description of the platform flexibility allowing the interoperability of different smart devices. This research was developed within the framework of the operative project HABITAT (Home Assistance Based on the Internet of Things for the Autonomy of Everybody), aiming at developing smart devices to support elderly people both in their own houses and in retirement homes, and embedding them in everyday life objects, thus reducing the expenses for healthcare due to the lower need for personal assistance, and providing a better life quality to the elderly users.

**INTRODUCTION :** The Internet of Things (IoT) is helping society facilitate a major challenge of meeting the needs of an ageing population. The UK will see a massive 23% increase in those aged 65+ between 2010 and 2018. By 2035, numbers of people aged 65+ will rise by just under 7 million – from 11 to 16.9 million. In 1908 1% of the population was expected to reach their 100th birthday but since 2012, this has risen to 1 in 3. As people live longer, they will inevitably suffer from a greater number of health issues. Care homes are expensive – an average of £2000 a month – and many would prefer to stay independent in their own home. The main issue here is safety, and family members may have to stop working to provide care if they cannot afford home nurses. As technology improves, IoT can help eliminate these issues. Data collected from IoT devices formulates an individual’s daily story by monitoring their routine, picking up inconsistencies and alerting emergency services if necessary. Connected IoT devices in the home improve safety, with experts projecting sales of 50 million wireless consuming devices for monitoring health by 2017, the smart home is here to stay.

# LITERATURE SURVEY :

The author describes [1] Canadian Study of Health and Aging (CSHA) and the National Population Health Survey (NPHS) collected data on the prevalence of dementia in differing fashions. The CSHA used a two-stage method with objective testing and expert judgment, and the NPHS used self-report and proxy data. The present report compares estimates of prevalence and the methodology for ascertainment in the two surveys. The more detailed approach of the CSHA offers the more valid means of estimating prevalence and providing data on subtypes, and can be used in natural history studies. The NPHS measures, including a self/proxy report of diagnosed dementia and a derived cognitive measure, are not sufficiently valid for useful inferences to be made. However, the NPHS method can be improved through supplementation with data on functional disability, providing age group-specific point estimates closer to the CSHA's estimates of cognitive impairment and dementia from the community sample. Future waves of the NPHS may wish to include objective cognitive function measures as a cost-efficient and more accurate method of estimating the prevalence of the dementia syndrome without attempting to estimate the prevalence of particular causes of that syndrome.

This author describes [2] an ongoing challenge for smart homes research for aging-in-place is how to make sense of the large amounts of data from in-home sensors to facilitate real-time monitoring and develop reliable alerts. The objective of our study was to explore the usefulness of a routine-based approach for making sense of smart home data for the elderly. Maximum variation sampling was used to select three cases for an in-depth mixed methods exploration of the daily routines of three elderly participants in a smart home trial using 180 days of power use and motion sensor data and longitudinal interview data.Sensor data accurately matched self-reported routines. By comparing daily movement data with personal routines, it was possible to identify changes in routine that signaled illness, recovery from bereavement, and gradual deterioration of sleep quality and daily movement. Interview and sensor data also identified changes in routine with variations in temperature and daylight hours.

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The author describes [3] In the recent past, the significant development in medical science and diagnostic technology as well as the raising awareness about health, nutrition, and education , has led to a remarkable increase of life expectancy worldwide. According to the World Health Organization (WHO), the elderly population over 65 years of age would outnumber the children under the age of 14 by 2050 .This massive aging population would create a significant impact on the socio-economic structure of society in terms of social welfare and healthcare needs, becoming, de facto, a challenge for the current health care models . The concept of active aging or aging well was introduced by WHO, highlighting the importance of health promotion and illness prevention throughout the life span especially in old age as the only and successful strategy to cope with the aging population phenomenon.

**Reference**

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2. van Kasteren, Y.; Bradford, D.; Zhang, Q.; Karunanithi, M.; Ding, H. Understanding SmartHome Sensor Data for Ageing in Place Through Everyday Household Routines: A Mixed Method CaseStudy. JMIR Mhealth Uhealth 2017, 5, e52. [CrossRef] [PubMed]

3. Kalache, A.; Gatti, A. Active ageing: A policy framework. Adv. Gerontol. 2003, 11, 7–18. [PubMed]