Research Article

A Survey on Wrist Wearable Devices and Systems for Supporting Elderly Computer Learners

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Abstract:
Wearable technologies are networked devices that can collect data, track activities, and customize experiences to users’ needs and desires. These technologies are a subset of IoT, which comprises of networked smart devices equipped with microchips, sensors, and wireless communications capabilities. Wearable technologies are used for learning process. This paper describes the wearable technologies how: elderly people use computers and internet. This survey paper involves different learning technologies using wearable technologies like teeborad, brick layer and so on.

Keywords: Wearable technology, IoT, smart devices, teebard, brick layer

I. Introduction
Wearable technologies are networked devices that can collect data, track activities, and customize experiences to users’ needs and desires. These technologies are a subset of IoT, which comprises of networked smart devices equipped with microchips, sensors, and wireless communications capabilities. Wearable technology comprises of technical end devices in the form of clothing and accessories. The central function is the recording and processing of data related to its user.

Computers can improve the life quality of elderly people in many ways. Training older people to successfully perform basic computer operations is a good starting point especially at the beginning when frustration levels and computer anxiety are high. A structured training program with feedback and the adaptive guidance would be very helpful in educating older people. The first time learners use the mouse and keyboard with the help of wearable devices. This paper is organized as section 2 Related Work, section 3 conclusion as follows.

II. Literature Survey
There is an increase in number of elder people who wants to use computers and internet for communication and entertainment information so on. In this paper S. L. Gatto and S. H. Tak, et.al [1] proposed how and why elderly people use computers and internet and also describes what the benefits are. The benefits of using computer are connectedness, utility, satisfaction and positive learning experience. Connectedness is people who use email for contacting friends or family members. People can search some information on the internet. If the information is available they will learn and through learning they will get satisfaction. Example of utility is, people paying bills through internet. The older people attend the computer classes and learn basics of computer. The older people acquire their computer skills after retirement. The people perform the activities such as online financial services, shopping, and entertainment and so on. So computer and internet use was important in the lives of these seniors.

Miche Fishel proposed [2] that “computerophobia in adult learners” Computerophobia means computer anxiety. The growth of technology causes computerophobia. It affects adults and children. Computerophobia appears generally in the form of negative attitudes towards computer such as fear of physical contact with the computer, fear of touching the computer and so on. Some causes of computerophobia in adults are failure of their job on work when using new technology. One of the best ways to solve the computerophobia is to select some problem that student want to solve and solve using their own ideas.

The older adults face problems when learning new technologies. “Learning to use new technologies by older adults perceived difficulties experimentation behavior and usability” proposed by Yvonnen Barnard and Mike D Bardly [3]. This paper introduces two models of technology acceptance and rejection, one from an ease of learning perspective and one from a system and user perspective. In the first method it facilitates the conditions have for learning how to use digital technologies through a step by step guidance providing a friendly space to use trial and error methods. The older people have experiences with learning and ideas their own attitude. In the second method, factors influencing to overcome the difficulties of learning new technology. The characteristics of the system and its interface influence the ease of learning are affordance, transparency, and feedback and error recovery. Positive transfer from previous experiences makes the learning process easier. The attitude of older people when learning new technologies are most important.

Charlotte Travis and Pietro Murano introduced the concept of [6] “a comparative study of the usability of touch based and mouse based interaction”. Touch screen is most commonly used technology in daily life. Touch screen is in the form of human computer interaction. It interacts with the objects directly and there is no need for devices such as mouse or
keyboard. In mouse based interaction it performs drag and drop, point and click and contextualized. In drag and drop the user must drag the object and drop into the proper position. In point and click the user has to click particular action on the screen. Contextualized is the combination of these two. The mouse based interaction is more accurate and most of the people using. Touch based interaction is should not be adopted under every circumstance.

In this paper Grace Ngai et.al proposed that [8] “deploying a wearable computing platform for computing education”. The aim of the paper is to develop a framework for utilizing wearable computing education such as computer science and engineering education. It describes two approaches teelboard and brick layer. Teelboard is a flexible platform that allows students with different skills to build their own wearable computing and attaching electronic components to the garment. In this method the student should know the concept of C programming. So the student is a beginner he don’t know any programming language. To overcome this difficulty brick layer can be used. In this a hybrid graphical textual programming development system designed for beginners, who have little or no experience in programming language. Some of the programs code is embedded in the system. It is designed as a teaching tool.

Mara Balestrini et.al proposed that [5] “Technology supported orchestration matters: outperforming paper – based scripting in a jigsaw classroom”. Signal Orchestration System consists of different wearable devices. The jigsaw activity is performed as teamwork. Student individual performance is send to each member through signals. The signal can be received if the student has wearable devices. The orchestration module facilitates remote control of the devices and monitoring overall experience. The performance is evaluated on the basis of teamwork. So it requires less time to finish the activity.

“What is wearable technology” is introduced by D.G.Wadnere and G.A.Wadnere. It is leading technology and an advance platform for students. This paper describes how it is useful for people. It is a hybrid text graphical user interface platform. The technology is used for innovative task such as training, gaming and entertainment. And also used for monitoring Parkinson’s patients. The objective of technology is that the computer will work with you instead of you working with computer.

Shu Li sun and Zu Li Deng proposed the concept of [9] “multi sensor optimal information fusion Kalman filter”. This paper presents a new multisensory optimal information fusion criterion which determines the minimum variance in the matrices. The system consists of multiple sensors with correlated noises. It has a two layer fusion structure. The first fusion layer has a netted parallel structure to determine cross variance between every pair of sensors. The second is the fusion centre that fuses and estimates variance of all local subsystems from the first layer. It solves the problems of systems with multiple sensors and correlated noises.

### 3. Conclusion

From these papers the elder people who use computers and internet are increasing. They perform various activities using computers. The use of wearable computing devices helps students in their education. A jigsaw activity is performed which influence students for supporting group activity. The learning technologies play an important role in their activities. The system helps not only for students but also for elder peoples.

### References


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### BIOGRAPHIES

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