

Towards Developing of a Wellness Assistant (WA) for Healthcare Using Pervasive Computing

The number of people over age 65 will almost double by 2030 and as they age, they generally prefer to remain in their home or go to a nursing home [<http://www.mobiquitous.org/2005/challenges.html>]. There are a variety of reasons for their decision, such as convenience or a need for security or privacy. It is time to break through the physical boundaries of hospitals, and bring the hospital information to the homes of the elderly rather than bringing elderly folks to the hospital. Despite growing requests by people to be able to take a more active part in managing their own health, wireless or internet-based healthcare devices have not been accepted for use in this area. This is probably due to the reluctance of this age group to make use of new technology, as well as the lack of reliable, individualized, or user friendly interfaces.

The goal of the project is to develop a set of middleware solutions (i.e., Application Programmable Interface (API)) and a WA application using the developed APIs so that others can develop applications on mobile devices (PDAs, smart phones). Motes and sensors not only provide healthcare to millions of people at an affordable cost in their home but also prepare next generation mobile device software developers. Software companies will be able to use those APIs to develop medical applications on handheld devices (e.g., cell phones, PDAs). The availability of communication devices such as cell phones has increased dramatically in this decade. People often need to travel to see doctors for routine checkups. With WA people can easily get the advantage of health care without traveling to doctors for routine monitoring. In this project, WA and middleware solution will be developed at Marquette University and will be validated at Medical College of Wisconsin (MCW).