Septembre 2020

Student / Intern project

IoT platform to assist mobile users

Smart Cities are augmented environments capable of utilizing the Internet of Things (IoT) and multimodal sensors, in which computational intelligence is ubiquitous to provide contextual, proactive and personalized services to people. The ambient intelligence in these environments will provide ubiquitous information and services to promote well-being and enable supporting people's health and life conditions. These services are introduced into artificial intelligence processes for improving automated reactions in diverse situations.

Although mobile devices facilitate the interaction with ambient intelligence services, they present drawbacks for non-technological people such as seniors, mainly to maintain updated information about health and life conditions. Therefore, we need to explore wearable technologies to complement mobile devices.

Wearable devices are among the new emerging technologies that can be useful to assist users in in smart cities. Diverse wearable devices incorporate interesting sensors (e.g., heart rate monitor) that enable increasing the knowledge about the user. This information is required in the ambient intelligent services to personalize the support. For example, an emergency support system can have an opportune situation before arriving at the person.

Our team have developed a framework to help seniors lead an independent and purposeful life, through ambient assistive technologies. The framework includes software components to integrate context from diverse mobile and IoT devices. Nowadays, divers promising emerging wearable components can be investigated.

Keywords

Smart City, Internet of Things, wearable technology, REST API, Android, Swift Sensors & Beacons, Dynamic and adaptable systems, Context aware services, Real life deployment.

Required skills/background

- Strong motivation towards challenging project
- Ease in programming (C++, Java, etc.)
- Ease in programming in Android and/or Swift
- Recommended skills in Web services

Role of the student/Intern

The student/intern project mainly involves the design of software components that enable gather IoT/wearable device data. The design has to incorporate service-oriented architectures and artificial intelligence for the integration of services and reasoning about the situation respectively. The implementation of the prototype will include mobile and smart watch, as well as, Web services and an open source artificial intelligence library. The intern will be asked to integrate the solution in real setting (with real) devices in order to complete the implementation and performing tests.

Application

Interested applicants email a detailed CV, transcripts and motivation letter to the lab director. The successful candidate will be contacted shortly after processing the received applications.

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