

Making Sense of Environmental Data in Real Time to Improve the Service Delivery in Assistive Technology

Joaquim Bellmunt – joaquim.bellmunt@ipal.cnrs.fr

Context:

Image and Pervasive Access Laboratory is a reference laboratory on Assistive technology for aging people in Singapore and nowadays we are enrolled in 2 European projects. We target several goals in our research. The first goal is to develop and deploy continuous and unobtrusive Ambient Assistive Living platforms in real scenarios. The aim is to recognize aging Activities of the Daily Living through semantic and rule-based reasoning with various level of abstraction. The second goal is to move towards distant and large-scale deployments of AAL platforms. Therefore, we built UBISmart, an agile framework that has the advantages of using a web platform to manage a large-scale deployment; the versatility and rapidity that this solution offers in a plug & play approach; and facilitates the active participation of end-users. UBISmart is a generic, scalable and intuitive cloud Web-Based AAL framework, which gathers sensitive information from the spaces through simple devices and sensors. This AAL platform converts any environment into a smart space in five (5) minutes to assess dependent people at their homes. Finally, we are now moving from controlled spaces to wide and open spaces in a SmartCity vision.

Description:

In the frame of SmartHomes, we need to make sense of the collected data within a given a human context to improve the interaction with end-users. The proposed approach processes the collected data in real time and computes the human condition values to personalize the service delivery.

We propose a computer science subject with the following description:

- The intern will study the computation of human behaviours from ambient and unobtrusive data
- The intern will be in charge of developing algorithms to clean heterogeneous raw data
- The intern will be in charge of developing algorithms to compute and quantify human behaviours
- The intern will integrate the proposed algorithm in a cloud based web application
- The intern will work the inner functionalities of our web platform

Keywords:

Ambient Assisted Living, REST, Javascript, Semantic Web, Data Mining.

Applicant profile

- Knowledge of Data mining algorithms (classification is a plus but is not required) – Python, Java, ...
- Experience in Data processing - SQL, R, Weka, ...
- Knowledge in web development server side – NodeJS, REST, JSON, ...
- Knowledge of SSH, Git, and shell (good practices)
- Knowledge of web applications and web services
- Awareness in software architecture and design patterns
- Ability for driving himself his own duty with proactivity and independence
- Excellent English skills
- We are based in Singapore, so be motivated to enjoy multicultural society and living style

Duration:

The internship has a duration of 6 months starting is from mid February onwards.
(Note that the Student Visa application may take time and then delay the starting date).

Gratification: 1500 SGD per month