

Presentation of the project

Making use of the transition towards ubiquitous environments where embedded computing devices seamlessly integrate and cooperate to serve human needs, we can design systems specially fitted to provide care to the ageing population. At IPAL, the UbiSMART framework is being developed to help the elderly lead an independent and purposeful life, through ambient assistive technologies. Therefore, we build smart spaces where sensors are deployed and reasoning algorithms implemented to gather knowledge about users' context. This knowledge can then be used to provide real-time services, as well as lifestyle assessment and coaching. The project incorporates research thematic including nomadic service discovery at home and in urban environments. We are currently packaging our system as a "smart home in a box" kit where a home gateway (1) pushes sensor data to a cloud-based platform where it is processed by server-side applications, and (2) provides the necessary subscriptions and configuration tools to access the cloud services.

Expected deliverables

This internship will lead to the design and development of a REST version of UbiSMART running on the cloud. The framework will include services to enable the reception of data provided by multiple home gateways (probably using node.js). It will ensure its storage in a triplestore and enable its access through a dedicated API. Key processing applications will be implemented and integrate with the triplestore API as an example. Services will also be implemented for the configuration, integration and maintenance of a the remote home gateways.

Keywords

Ambient Assisted Living, Smart Home, Web Services, REST, Javascript, Semantic Web.

Applicant profile

- Master Degree or Engineer Student (last year of studies).
- Skills in programming, REST, Javascript, server-side applications.
- Familiarity with one or more of the following is appreciable: AWS, Heroku, node.js.
- Strong motivation towards this challenging project.
- Availability for 5 to 6 months starting in the first semester of 2014.

Gratification: About 800€ net per month



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