Master Thesis Subjects

Title: Design and development of an Internet of Things (IoT) Smart Meeting application based on Android

Location: University of Surrey

Home Department: Centre for Communication Systems Research

Contacts: Professor Klaus Moessner (k.moessner@surrey.ac.uk)

Targeted training: Master

Duration: 6 months

Context:

The term Internet of Things is used to describe the notion of a world in which various devices (such as sensors, actuators, mobile phones, etc) and physical objects can be connected anytime, anyplace, with anything and anyone ideally using any path/network and any service. "Things" (i.e. devices and objects) make themselves recognizable and obtain intelligence thanks to the fact that they can communicate information about themselves and they can access information that is provided aggregated by other things/entities. The interaction with such "smart things" is enabled over the Internet, allowing querying and changing their state and any information associated with them, taking into account security and privacy issues. This allows the development of enhanced situation aware applications and services that can provide solutions for automating and improving processes in the business sector as well as assisting in addressing societal challenges, by reducing costs and increasing productivity.

Objectives:

In this context, the aim of the proposed thesis is to design and develop an IoT Smart Meeting Application based on Android. The concept is to facilitate users visiting a company's/ organization's premises (such as CCSR) by providing them information and access to the company's/organization's infrastructure. For example, this may include navigation through the company/organization building, seamless and faster configuration of a user's wireless devices facilitating their connection to the network "visited", etc. A report describing the design and development of the application will be delivered, including evaluation results. Moreover, in the scope of carrying out this thesis at least one research paper should be submitted for publication.

References:

- The Internet of Things Council, http://www.theinternetofthings.eu/what-is-the-internet-of-things

- European Research Cluster on the Internet of Things, http://www.internet-of-things-research.eu/
  http://www.internet-of-things-research.eu/pdf/IERC_Cluster_Book_2012_WEB.pdf\
- Internet of Things comic book, http://www.e-pages.dk/alexandra/10/
- Android developers, http://developer.android.com/index.html

Expected competencies:

- Autonomy in programming and computing lab experimentation
- Previous experience in programming skills with tools/languages, in particular Java, Android, SQL

Για περισσότερες πληροφορίες παρακαλώ επικοινωνήστε με την κ. Βέρα Αλεξάνδρα Σταυρουλάκη (veras@unipi.gr).

Title: Design and development of learning mechanism for situational awareness in the Internet of Things

Location: University of Surrey

Home Department: Centre for Communication Systems Research

Contacts: Professor Klaus Moessner (k.moessner@surrey.ac.uk)

Targeted training: Master

Duration: 6 months

Context:

The term Internet of Things is used to describe the notion of a world in which various devices (such as sensors, actuators, mobile phones, etc) and physical objects can be connected anytime, anyplace, with anything and anyone ideally using any path/network and any service. "Things" (i.e. devices and objects) make themselves recognizable and obtain intelligence thanks to the fact that they can communicate information about themselves and they can access information that is provided aggregated by other things/entities. The interaction with such "smart things" is enabled over the Internet, allowing querying and changing their state and any information associated with them, taking into account security and privacy issues. This allows the development of enhanced situation aware applications and services that can provide solutions for automating and improving processes in the business sector as well as assisting in addressing societal challenges, by reducing costs and increasing productivity.

Objectives:

The aim of the proposed thesis is to design and develop a mechanism for acquiring and learning information on the situation of users/objects/services in the scope of a particular application, so as to allow the dynamic adaptation of IoT applications based on encountered or expected situations. A report describing the design and development of the mechanism will be delivered, including evaluation results. Moreover, in the scope of carrying out this thesis at least one research paper should be submitted for publication.

Expected competencies:

- Autonomy in programming and computing lab experimentation
- Machine learning, artificial intelligence techniques
- Previous experience in programming skills with tools/languages, in particular Java, RESTful Web Services

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