

# Guillaume Habault

PH.D. · TELECOMMUNICATION AND INTERNET OF THINGS

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*“Participate in Telecommunications leading innovations.”*

## Education

### IMT Atlantique (ex. Télécom Bretagne)

*Brest & Rennes, FRANCE*

PH.D. IN COMPUTER SCIENCE & TELECOMMUNICATION

*Oct. 2010 - Oct. 2014*

MASTER OF SCIENCE IN MICROELECTRONICS, ARCHITECTURES, NETWORKS AND COMMUNICATION SYSTEMS

*Sep. 2009 - Aug. 2010*

MASTER WITH SPECIALIZATION IN SOFTWARE, SYSTEMS AND NETWORKS

*Sep. 2005 - Aug. 2009*

## Experience

### Keio University

*Yokohama, JAPAN*

POST-DOCTORAL FELLOW ON AUTONOMOUS DRIVING

*Nov. 2017 - present*

- **Study how machine-learning can benefit to Autonomous Driving.**
- Develop an Android application to collect, transform and send vehicles information to a Management System.
- Implement a simulation platform to study different services.

### Institut Mines-Télécom

*Paris, FRANCE*

EDITOR FOR IMT MASSIVE OPEN ONLINE COURSE (MOOC) ON DIGITAL FABRICATION

*Feb. 2017 - Aug. 2017*

- **Review and enhance contents of existing MOOCs.**
- Set up “hands-on” lab works to complete online courses.
- Develop a MOOC focusing on understanding energy principles via Digital Fabrication.

ICT ARCHITECT FOR THE EUROPEAN PROJECT “SMART ENERGY AWARE SYSTEMS (SEAS)”

*Mar. 2015 - Jan. 2017*

- **Study the best way to integrate domestic energy productions within main energy networks/markets.**
- Design an innovative ICT Architecture compliant with IoT technology, other standards and existing platforms.
- Implement a Proof-of-Concept to demonstrate its benefits and evaluate it with real scenarios.

### CISCO & Télécom Bretagne

*Rennes, FRANCE*

RESEARCH & DEVELOPMENT ENGINEER

*Mar. 2010 - Aug. 2010*

- **Adapt Universal Plug and Play (UPnP) standard to IPv6.**
- Enhance an existing UPnP stack with IPv6 capabilities.
- Implement a security patent to prevent corrupted devices from interfering.

### HTC Europe Co. Ltd

*Slough, UNITED-KINGDOM*

COMMERCIALIZATION PRODUCT MANAGER & TECHNICAL MANAGER

*Aug. 2007 - Jun. 2008*

- **Manage Smartphones roadmap and projects delivery for UK and East-Europe.**
- Set up and manage a full project for East-Europe market.
- Manage technical projects – Resolving issues and satisfying customers requirements.

## Extracurricular Activity

### Manager and vice-president of Swedish Fit Rennes

*Rennes, FRANCE*

MANAGE AND COORDINATE A TEAM IN ORDER TO DEVELOP SWEDISH FIT

*2014 - 2017*

- Gained expertise in promoting an activity in front of different organizations and audiences.
- Gained expertise in managing people from different backgrounds and domains.

### President of ADER (Télécom Bretagne young researchers association)

*Rennes, FRANCE*

STIMULATE EXCHANGE BETWEEN RESEARCHERS & PROMOTE PHD TRAINING

*2012 - 2014*

- Proposed various activities on the campus (scientific, cultural and sport).
- Presented PhD assets to different audiences.
- Participated in the organization of a PhD workshop in 2012.

## Research and Teaching Activities

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### PH.D. THESIS

Title **Service-based Networking applied to Machine-to-Machine Communications**

Director **Prof. Jean-Marie BONNIN**, Dr. Laurent TOUTAIN and Dr. Philippe BERTIN

#### SUMMARY

The network ecosystem offers a diversity of Access Networks (ANs) for devices to connect to. Currently, devices select the AN based on its physical characteristics. However, the best AN satisfying this selection may not be the most suitable one for all services. In addition, the arrival of new constrained devices with the Internet of Things requires that the connection process should be specified for them to benefit from this AN diversity. We proposed a generic, lightweight and service-based announcement mechanism, allowing any device to efficiently select, and so, connect to the best AN for each service. Our mechanism helps Service Providers announce their services on existing networks and helps devices filter ANs based on service availability. Both the impact and effectiveness of this mechanism has been studied on a Machine-to-Machine scenario using simulations and mathematical models.

### RESEARCH

#### INTEREST

- Internet of Things – Architecture, Protocols, Applications and Implementations.
- Smart Grid – Energy management, production and consumption coordination as well as interconnection of “energy actors”.
- Intelligent Transport System – Vehicle-to-Vehicle and Vehicle-to-Infrastructure (Grid, Road, etc.) communications as well as different services (Efficient charging, traffic management, etc.).
- Wireless Mobility and Multihoming – Handover management, Network selection.

#### ACHIEVEMENTS

- Set up a complete “nanogrid” at Télécom Bretagne – Photovoltaic panels and batteries interacting with a custom management system and an Electric Vehicle. It includes tools and algorithms to automate and visualize both electricity consumption and production, as well as, manage and optimize them.
- Contributed to the enhancement of Wi2Me – an android research application collecting Wi-Fi statistics.

### TEACHING

#### EXPERIENCE

- Participated in the development of a Python teaching application which supports network courses.
- Prepared and supervised practical lab works and graduate courses for a total of 250 hours of service.
- Supervised final year students projects and interns.
- Organized a research seminar with Keio University.
- Prepared, organized and gave UPnP lectures for professional training.

## Qualifications and Languages

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**Competences** Experienced in group work and group management, as well as leading projects.  
Goods organizational skills.

**Programming experience** Python, Matlab, PHP, C, C++, Java, XML

**Knowledge of** Web Semantic (RDF, JSON, JSON-LD)

**Simulation** NS2, NS3

**Telecommunication knowledge** OSI and Network Architectures (Cellular, wired & wireless, M2M, IoT, REST)  
Protocols (IP, UPnP, Mobile IP, CoAP, RIP, BGP, etc.)

**Operating Systems** GNU/Linux, Windows XP/7/10, Mac OSX, Android, Arduino, Raspberry

**Languages** French (Mother Tongue), English (Excellent), Japanese (Beginner), Spanish (Basic)

**Others** LaTeX, Microsoft Office, Open Office, Photoshop, Gimp, HTML

## Hobbies

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Sports **Surf**, Swedish Fit (Fitness Coach with a Certificate of Professional Qualification) and Aikido.

Others **Crafting**, Drawing, Positive gaming, Board games and Create wood objects.