

Prof. Dr. Emmanuel Baccelli

Last update Jan. 2020
More details online at :
www.emmanuelbaccelli.com



Professional Experience

- 2019 - present : **Professor** affiliated with Freie Universität Berlin.
Einstein Center for Digital Future (ECDF) chair :
Open and Secure Internet of Things Ecosystem.
Institute website : www.fu-berlin.de
- 2007 - present : **Scientific Researcher** at INRIA, part of the project-team TRiBE. Focus on IoT communication and software, spontaneous wireless networking, Internet protocols. Co-founder and coordinator of the open source community developing RIOT. Contributions to standardization in several working groups in the IETF.
Institute website : www.inria.fr
- 2013 – 2014 : Guest Prof. at Freie Universität Berlin (DAAD Grant).
MSc lecture on Computer Networks. Seminars on IoT.
- 2003 - 2005 : Research Engineer at Hitachi Europe, Sophia-Antipolis (France) and at Hitachi Research Lab, Tokyo (Japan).
Focus on IETF standardization activities.
Company website : www.hitachi-eu.com
- 2001 - 2002 : Software Engineer at Metro-Optix, Santa Clara, CA, USA.
Development of IP router management agents (using CLI, SNMP). Implementation in C, C++ and Java.
- 2000 : Consultant at AT&T Research Labs (Shannon's Labs) in Florham Park, NJ, USA. Focus on policy-based networking with Raju Rajan, Albert Greenberg, Jennifer Rexford. Design and implementation of an OSPF monitoring tool using to display paths between routers in an Autonomous System such as AT&T's IP backbone (WorldNet).
Company website : research.att.com

Education

- 2012 : **Habilitation** from Université Pierre et Marie Curie, Paris, France. Defended in Dec. 2012. Thesis title: “IP-Disruptive Wireless Networking: Integration in the Internet”.
- 2006 : **PhD** in Computer Science from Ecole Polytechnique, Paris, France. Defended in Jan. 2006. Advised by Prof. Philippe Jacquet. Thesis title: “Routing and Mobility in Large Heterogeneous Packet Networks”.
- 2000 : **Masters** of Science (engineering degree) from Telecom SudParis, Evry, France. Field : Telecommunications and Computer Sciences. Defended in Sept. 2000. Thesis title: “Policy-based Network Management”.

Awards

- 2013 : 2013-2014 DAAD Guest Professorship Grant Awardee.
- 2007 : 2007 PhD Award from Ecole Polytechnique, Paris, France, for the thesis on “Routing and Mobility in Large Heterogeneous Packet Networks”.

Academic Publications Overview

Emmanuel Baccelli is the author or co-author of **3 books and 80+ journal or conference papers**, as well as book chapters in relevant venues. Full list available online: <http://scholar.google.com/citations?user=L4uE45oAAAAJ>

The conferences where his work was published include top conferences such as **IEEE INFOCOM, IEEE SECON, ACM ICN**.

The journals where his work was recently published include top journals such as the **IEEE Transactions on Information Theory, Transactions of IEEE, IEEE Internet of Things Journal**.

Standardization Activity Overview

Emmanuel Baccelli is an active participant in IETF since 2003. He is the co-author of **7 RFCs and 30+ Internet Drafts**. Member of the IoT Directorate & Routing Directorate. See : <http://www.emmanuelbaccelli.com/IETF.html>

Recent Invited Talks

- June 2019 *Towards Secure IoT with Open Source and RIOT on*
French MoD *Microcontroller-based Devices*, invited talk at the French Ministry of Defense (workshop on Sovereign OS)
- Nov. 2018 *The Internet of Things*, invited talk at the European
EPO Patent Office (EPO Roadshow 2018), Berlin, Germany.
- March 2017 *ICN for IoT : Energy Efficiency Opportunities &*
CiscoX Symposium *Challenges* invited talk at Cisco Systems, Paris, France.
- Oct. 2016 *Communication Protocols & Operating Systems for IoT*,
EclipseCon'16 invited talk at IoT Day, Ludwigsburg, Germany.
- Sept. 2015 *The Internet of Things, Decentralization & Open Source*,
GetD Invited talk at GetD workshop, Berlin, Germany.
- May 2014 *Pimp The Internet of Things !*
LinuxTag Invited talk at LinuxTag '14, Berlin, Germany.
- Sept. 2013 *On a Collision Course: Wireless, The Internet & your PhD*,
IEEE ICNP Keynote at ICNP PhD Forum, Göttingem, Germany.

Teaching Activity

- 2018-2019 Research seminars (MSc level) on *Internet of Things and Security* at Freie Universität Berlin, Germany.
- 2016-2019 Seminar on *Platforms & Protocols for the Internet of Things* (Formation PESTO). Institut Mines-Télécom, Paris, France.
- 2013-2014 Professor position at FU Berlin. MSc lecture on Computer Networks.

2011/2012 Winter semester lecture on *Mobile Wireless Networks*,
Course INF567 Lecturer & instructor at Ecole Polytechnique, France.

Contracts, Projects and Acquired External Funding

SPARTA (H2020) (2016-2018) Project focused on cybersecurity, aiming to develop a foundation for secure-by-design intelligent infrastructure and Internet of Things embedded software platform built on strong formal approaches, addressing the multiple facets of cybersecurity. Partners include: CEA, Fraunhofer, TU München, IMT, Thalès (& others). EU funding : 16M€

AGILE (H2020) (2016-2018) Project focused on the design and experimentation of open-source community-driven software and hardware for the interconnection of devices in Internet of Things with cloud services, preserving user privacy and data ownership. Partners include: Orange, Eclipse Foundation, Orange (& others). EU funding: 6M€

SAFEST (2012-2015) Project focused on the design of public spaces security and safety, leveraging Internet of Things paradigms and sensor networks. Partners: SAGEM, INRIA, Freie Universitaet Berlin, HAW (& others). Funded with more than 2M€ by ANR and BMBF.

SMARTMESH (2009-2013) Project focused on the design of intelligent wireless sensor mesh networking for video surveillance and intrusion alarm systems. Partners: SAGEM, INRIA, CEA, Telecom SudParis, Tunecharger, Ineo, Orelia, Prodomo. Funded with more than 1,9M€ by Ile-de-France region.

e-comp@gnon (2008-2011) Realization of a new type of multimedia terminal, enhanced with wireless ad hoc IP connectivity based on the OLSR protocol. Commercialization of this terminal is expected eventually. Partners: Archos, INRIA, SCNF, Telecom SudParis, DGE, Deveryware. Funded with more than 2,5M€ by the Ile-de-France region.

OPNEX (2007-2011) Systems and optimization theory used as the foundation for algorithms that achieve full transport capacity for multihop wireless systems. Partners:

Centre Of Research & Technology Hellas, INRIA, Politechnika Poznanska, Thomson Research, Freie Universitaet Berlin. EU funding :1,4M€

PhDs Advised (Completed)

1. Oliver Hahm, “*Enabling Energy Efficient Smart Object Networking at Internet-Scale.*” PhD from Paris-Saclay University. Thesis started in 2012, defended in 2016. Current position: IoT Architect at Zühlke, Frankfurt, Germany. **2017 Paris-Saclay PhD Prize Awardee.**
2. Juan Antonio Cordero “*Link-State Routing Optimization for Compound Autonomous Systems in the Internet.*” PhD from Ecole Polytechnique. Thesis started in 2007, defended in 2011. Current position: assistant professor at Ecole Polytechnique, Paris, France.

Related Professional Activities

Open Source Community: **Co-founder and co-leader of the RIOT community** developing the free, open source operating system and network stack for the Internet of Things devices and applications. More info online at: www.riot-os.org

Textbooks : **Co-author of three textbooks** on introductory Computer Science for high-school students in France.

Conferences : **Co-organizer of international conferences** such as ACM Mobihoc '11, OLSR Workshops '09, '05, '04. Co-Chair of ACM MobileHealth '14, '15, '16, MANIAC Challenge '13, ACM Sesp '12, RIOT Summit '16, '17, '18, '19.

Referee, TPC : **TPC/referee for IEEE & ACM conferences & journals** including IEEE SECON, IEEE Globecom PerGroup, ACM Transactions on Networking, ACM Mobihoc Mobile Health, IEEE IoT Journal, JSAC, ACM Transactions on IoT, IEEE Cloud Computing Transactions, Computer Networks Journal, Elsevier Computer Communication Journal, Performance Evaluation Journal, Elsevier Future Generation Computer Systems, IEEE ICC NovaEnEv,

PEMWN...