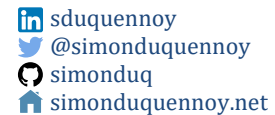


Simon Duquennoy

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I'm a computer systems builder and researcher. I work on reliability and security of distributed embedded systems. Interested in roles that involve technical challenges and with real-world impact.

Experience

- Oct 2011 – Now** Research Scientist, RISE SICS, Sweden
Research: distributed & secure embedded systems
Industry relation: technology transfer and consulting
Grant applications: national and international
- Jan 2016 – July 2017** Research Scientist, Inria, Lille, France
On a dual affiliation with SICS
- Oct 2010 – Sep 2011** PostDoc, SICS, Sweden
Recipient of an EU "Alain Bensoussan" grant

Education

- 2010** PhD in computer science, Univ. Lille 1, France. *Recipient of a 3 years PhD grant from the French Ministry of University & Research. Worked on Smart Card Web Servers. Best Paper Award (IMIS'09)*
- 2007** MSc in computer science, Univ. Lille 1, France. Ranked **1st among 128**
Distributed and embedded systems, image processing, and software engineering
- 2005** BSc in computer science, Univ. Lille 1, France. Ranked **1st among 125**

Track Record

- 30+ papers in peer-reviewed venues: **2200+ citations** ([google scholar](#))
- Open sourcing: **maintainer of 2700+ followers project**
- **Standardization** contributions at IETF (capturing community consensus, technical writing)
- Participation in 40+ conference Technical Program Committees ([details](#))
- **Public speaking** in 30+ scientific conferences and invited talks
- Co-mentored 4 PhD students and over 20 MSc students
- 200+ hours of University teaching, in Lille, KTH and Uppsala

Software Projects

Contiki, an Operating System for the Internet of Things

- Maintainer: code review and continuous integration experience (2700 followers, 160 contributors)
- Production-ready software used by our many industrial partners
- Contributed routing protocol for 99.999% end-to-end delivery in low-power IPv6 mesh (C, Python)

Applied Cryptography

- IPsec for MSP430 and ARM microcontrollers (C)
- Encrypted databases: Talos, Pilatus (advisor on system design)
- Decentralized authorization system: Droplet (advisor on system design)

Other

- SICStSense, an online platform for IoT data storage and processing (Java + Play 2.0)
- Smews, Web server for Smart Cards: from task scheduler to TCP/IP stack and HTTP services (C)
- MPPSoC, an emulator of a massively parallel processor on chip (SystemC / C++)

Skills

- *Areas:* Networking, Protocol Design, Distributed Systems, Embedded Systems, System Security
- *Programming languages:* Expert: C and Python; Familiar: C++, Java, Bash and more
- *Technologies/Frameworks:* Docker, Vagrant, Play 2.0, Jekyll, Git/GitHub/Travis
- *Other:* Public speaking, Technical writing, Funding acquisition
- *Languages:* French (native), English (fluent), Swedish (intermediate)

Project Funding & Management

I obtained a total of **22 MSEK in research funding**, for collaborative research projects, see below:

2018–2023 <i>SSF aSSIsT, 8.6 MSEK</i>	Software security and exploit mitigation in embedded OSes Fuzzing, dynamic software analysis <i>Role:</i> Co-principal investigator, management, technical work
2017–2019 <i>H2020 Vessedia, 296 k€</i>	Static software analysis and verification in Internet of Things Application to avionics <i>Role:</i> Principal investigator, management, technical work
2016 <i>CPSLTA, 139 k€</i>	Lifetime estimation of embedded software Led to the creation of startup <i>Wisebatt</i> <i>Role:</i> Principal investigator, management
2015–2019 <i>KKS Ecare@home, 5.3 MSEK</i>	E-health application for the elderly Low-power network scheduling <i>Role:</i> Principal investigator, management, technical work
2014–2015 <i>EIT Digital RICH, 275.5 k€</i>	Industrial wireless networks Application to bridge structure monitoring <i>Role:</i> Principal investigator, management, technical work

Selected Publications

Publications in flagship (ranked A*) conferences since 2015:

- *Secure Sharing of Partially Homomorphic Encrypted IoT Data*. H. Shafagh, A. Hithnawi, L. Burkhalter, P. Fischli, and S. Duquennoy. ACM SenSys 2017
- *Network-wide Consensus Utilizing the Capture Effect in Low-power Wireless Networks*. B. Al Nahas, S. Duquennoy, and O. Landsiedel. ACM SenSys 2017
- *CrossZig: Combating Cross-Technology Interference in Low-power Wireless Networks*. A. Hithnawi, H. Shafagh, S. Li, J. Gross, and S. Duquennoy. ACM/IEEE IPSN 2016
- *Orchestra: Robust Mesh Networks Through Autonomously Scheduled TSCH*. S. Duquennoy, B. Al Nahas, O. Landsiedel, and T. Watteyne. ACM SenSys 2015
- *Talos: Encrypted Query Processing for the Internet of Things*. H. Shafagh, A. Hithnawi, A. Dröscher, S. Duquennoy, and W. Hu. ACM SenSys 2015
- *TIIM: Technology-Independent Interference Mitigation for Low-power Wireless Network*. A. Hithnawi, H. Shafagh, and S. Duquennoy. ACM/IEEE IPSN 2015

Standardization

Past and ongoing standardization activity:

- *6TiSCH Minimal Scheduling Function (MSF)*. With co-authors. IETF 6TiSCH, 2018
- *Robust Scheduling Against Selective Jamming in 6TiSCH Networks*. With co-authors. IETF 6TiSCH, 2018
- *Neighbor Management Policy for 6LoWPAN*. With co-authors. IETF LWIG, 2018
- *Compression of IPsec AH and ESP Headers for 6LoWPAN Networks*. With co-authors. IETF 6lo, 2016