

# Christopher Henard

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🌐 [henard.net](http://henard.net)

🇫🇷 French, single



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## Education

### PhD in Computer Science

*October 2011 - May 2015*

UNIVERSITY OF LUXEMBOURG  
Luxembourg, Luxembourg

MAJOR: Software Engineering, Software Testing

THESIS: Enabling Testing of Large Scale Highly Configurable Systems with Search-based Software Engineering: the Case of Model-based Software Product Lines

GRADE: Excellent / outstanding

### Dipl.-Ing. / M.Sc. in Computer Science

*Sept 2008 - Sept 2011*

ESIAL - TELECOM NANCY  
UNIVERSITY OF LORRAINE  
Nancy, France

MAJOR: Computer Networking, Telecommunications, Services

THESIS: Integration of a Mobile Communication Network over IP

GRADE: First class honours

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## Work Experience

### Chief Technology Officer

*June 2016 - Present*

QUANOX  
Luxembourg, Luxembourg

DESCRIPTION: Development of recommendation systems

MAIN TASKS: Product development (C++, scripts), data analysis, machine learning, recruitment and team management.

### Postdoctoral Researcher

*May 2015 - May 2016*

SECURITY & TRUST LAB (SNT)  
UNIVERSITY OF LUXEMBOURG  
Luxembourg, Luxembourg

DESCRIPTION: Research on testing, search-based software engineering, optimization

MAIN TASKS: Papers and projects writing, review of scientific work, prototypes development (C, C++, JAVA, scripts) experimentations, workshop organization, collaborative work with UK, Ireland, dissemination, teaching.

### PhD Candidate

*Oct 2011 - May 2015*

SECURITY & TRUST LAB (SNT)  
UNIVERSITY OF LUXEMBOURG  
Luxembourg, Luxembourg

DESCRIPTION: Research on techniques for testing highly configurable systems, application to an industrial case with CETREL

MAIN TASKS: Literature review, experimentations and automation, collaborative work with universities (UK, Belgium) and industrial partners (CETREL), papers writing and reviewing, dissemination, prototypes (C, C++, JAVA, R, scripts), teaching.

### Intern (Graduation Internship)

*Apr 2011 - Sept 2011*

LUXEMBOURG ONLINE SA  
Luxembourg, Luxembourg

DESCRIPTION: Study and integration of a mobile communication network over IP

MAIN TASKS: Study of the GSM / UMTS / SS7 / SIGTRAN protocols & specifications, development of a prototype SIGTRAN stack in C.

### Intern (Master 1 Internship)

*Jul 2010 - Aug 2010*

INRIA  
Nancy, France

DESCRIPTION: Identification of attackers on the KAD (eMule) peer-to-peer network

MAIN TASKS: Development of a crawler in JAVA and C, data analysis, attack pattern identification, integration of countermeasures in the eMule client (C++), collaboration with the University of Troyes (France).

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## Computer Science Skills

Proficiency

Software Testing and Validation, Constraint Solving, FinTech, Data Mining and Analytics, Machine Learning, Optimization, Statistics, Evolutionary Algorithms

Programming & IDEs  
Technologies & Design

JAVA, C, C++11, Shell scripting, R, PHP, NETBEANS, ECLIPSE, VISUAL C++  
JUNIT, JAVA EE, OPENGL, MVC, UML, Design Patterns

Databases & Web	POSTGRESQL, XML, Web Services
Networking & Telecoms	TCP/IP and OSI layers (addressing, routing, VLAN, ...), VoIP, P2P, CISCO IOS, network management (SNMP, NAGIOS), GSM, UMTS, SS7, SIGTRAN
Operating Systems	UNIX, WINDOWS, ANDROID

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## Computer Science Projects and Tools

- 2011-2016 **Research prototypes & experimentation tools**, C, C++, JAVA, SHELL SCRIPTS, R.
- 2014 **Logic formulas mutation tool**, JAVA.
- 2014 **Reverse-engineering tool for product lines**, JAVA.
- 2013 **Test configuration generator for product lines**, JAVA, C.
- 2011 **Dye penetration measurement system using image processing techniques on hair cross-sections**, JAVA, *Industrial project with L'Oréal*.
- 2010 **Compiler**, C++, FLEX, BISON.
- 2010 **Website copier**, JAVA.
- 2009 **Bomberman-like game**, C, SDL.
- 2008 **Didactic RISC-style processor simulator**, JAVA.
- 2008 **Regular expression-based search engine**, C SHELL & Unix tools grep, sed, cut.

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## Communication Skills

- French **Native speaker**
- English **Advanced (C1-C2)** *Over 4 years team working, writing, reading and presenting scientific work in English.*

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## Selected Research Publications (15+ Papers Published)

- 2016 C. Henard *et al.*, *Comparing White-box and Black-box Test Prioritization*, 38th International Conference on Software Engineering.
- 2015 C. Henard *et al.*, *Combining Multi-Objective Search and Constraint Solving for Configuring Large Software Product Lines*, 37th International Conference on Software Engineering.
- 2014 C. Henard *et al.*, *Bypassing the Combinatorial Explosion: Using Similarity to Generate and Prioritize T-wise Test Configurations for Software Product Lines*, IEEE Transactions on Software Engineering.

*More publications can be seen on my Google Scholar profile.*

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## Teaching Activities

- 2014 - 2016 **COURSE: Big Data & Machine Learning** (Bachelor 3); **DESCRIPTION:** Supervised learning, unsupervised learning, clustering, data analysis, feature identification and pre-processing, statistics
- 2011 - 2016 **COURSE: Software Testing and Validation** (Master 2); **DESCRIPTION:** Fault localization, spectrum-based analysis, diagnosis, search-based testing, mutation testing
- 2014 - 2015 **COURSE: Discrete Mathematics** (Bachelor 1); **DESCRIPTION:** Logic, Boolean Algebra, Arithmetic, Graphs, Enumerative Combinatorics, Set Theory, Finitary relation

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## Other Information

- Driving License Class A and B, personal vehicle
- Interests Swimming, fitness, piano, game programming, motorcycle riding