

## EDUCATION AND DEGREES

- 2018 **Qualification** to the duties of University Professor.
- 2017 **Habilitation to Supervize Research**, [Paris Diderot U.](#), *Complétude en logiques*. Jury : D. Kesner, D. Miller and S. Negri (examiners); G. Dowek, C. Dubois, A. Guglielmi, P. Jouvelot and [A. Leitsch](#).
- 2005 **PhD**, [Paris Diderot U.](#), *Méthodes sémantiques en déduction modulo*. Jury : G. Dowek (advisor); T. Coquand et M. Okada (examiners); J. Goubault-Larrecq, D. Kesner, [T. Hardin](#) and J. Lipton.
- 2002 **Engineer**, [ENSTA ParisTech](#), France and [Politecnico di Milano](#), Italy.

## PROFESSIONAL EXPERIENCE

- 2018 – present** **Full Professor**, [MINES ParisTech](#). 160h annual teaching, 3-years curriculum :  
— (1Y) *Introduction to programming in Java* : lectures, practical sessions, project;  
— (1Y) *Algorithmics* : lectures on signal processing, compression, hashing, cryptogtaphy, SAT;  
— (2Y) *Computer Science Foundations* : logic,  $\lambda$ -calculus, operational semantics, complexity;  
— (2Y-3Y) *CS Major* : functional program, formal methods, field trip, projects, graduation works;  
— others : Executive Master MSIT, mentoring; ISEP, *Formal Methods*;  
— duties : “CS Foundations” course head, CS Major vice-chair, pedagogical committee.
- 2012 – 2018 **Tenured Associate Researcher**, [MINES ParisTech](#). 120h annual teaching (see above).
- 2015 – 2016 **Invited Professor**, [Wesleyan U.](#), USA. 120h annual teaching :  
— (BSc) *CS 112 : Introduction to programming (Python)* : organization, lectures, practical and help sessions, project;  
— (MSc and BSc) *Automated theorem proving* : organization, lectures, practical sessions.
- 2008 – 2012 **Tenured Associate Professor**, [ISEP](#). 280h annual teaching, 3-years curriculum :  
— (1Y) *Introduction to Programming (C then java)* : organization, lectures, practical sessions, project;  
— (1Y) *Project-Based Learning* : HTML, Javascript, PHP, MySQL, UML, mentoring, evaluation;  
— (2Y) *Object-oriented programming* : Java, practical sessions;  
— (2Y-3Y) *Formal methods (english)* : logic,  $\lambda$ -calculus, model-checking, Coq, Frama-C;  
— (3Y) *Programming contest* : lectures and practical sessions;  
— (3Y) *Algorithmic (english)* : operations research and complexity;  
— (MPRI MSc, 2Y) *Semantic Methods of Cut Elimination (english)* : lecture;  
— Duties : CS major, internal committees, elected member at the board of director.
- 2007 – 2008 **Post-doctoral Fellow**, [Comlutense de Madrid U.](#), Spain. MSc lecture, 4h, *The Tableaux Method*.
- 2006 – 2007 **Assistant Professor**, [Paris Diderot U.](#). 192h annual teaching :  
— (BSc, 1Y) *Introduction to Programming in Java* : practical sessions;  
— (BSc, 1Y) *Introduction to Operating Systems* : shell and scripts, lectures and practical sessions;  
— (BSc, 1Y) *Object-Oriented Programming in Java* : practical sessions;  
— (BSc, 3Y) *Logic* : practical sessions;  
— (MSc, 1Y) *System Programming* : IPC in C, POSIX, practical sessions.
- 2005 – 2006 **Assistant Professor**, [Pierre et Marie Curie U.](#). 192h annual teaching :  
— (BSc, 1Y) *Introduction to programming in Scheme* : practical sessions;  
— (BSc, 2Y) *Mathematical Structures for CS* : orders, graphs, induction. . . practical sessions;  
— (BSc, 2Y) *Project* : first-order theorem prover in OCaml, lectures and practical sessions;  
— (BSc, 3Y) *Computer Science Foundations* : typing, semantics, practical sessions.
- 2005 **Assistant**, [École polytechnique](#). *Principles of Programming Langanges* : Java, practical sessions (48h).
- 2002 – 2005 **PhD student**, Inria & [École polytechnique](#).
- 2003 – 2004 **Oral examiner**, [Louis-le-Grand High School](#). *Mathematics*, preparatory classes (50h).
- 2001 – 2002 **Part-time Developer**, [Observing](#), Italy. Databases and internet protocols.

## PUBLICATIONS

- **6 articles**, of which : 1 book chapter, 4 international journals and 1 national journal.
- **30 communications**, of which : 17 in international conferences with committee and acts, 5 in international workshops with committee and acts, 7 in international conferences and workshops with committee.
- **1 submitted work** in a journal.
- Many oral communications during seminars, including popularization talks and dissemination outside the community.

## INVOLVMENT IN THE COMMUNITY

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|-----------|---|
| 2019      | Organization of the <i>International School on Rewriting (ISR 2019)</i> at MINES ParisTech.   |
| 2018      | Program Committee (PC) of the <i>3rd International Workshop on Sets and Tools (SETS)</i> .  |
| 2017      | PC of the <i>Workshop on Proof eXchange for Theorem Provers (PxTP)</i> .  |
| 2016      | PC of the workshop <i>Logical Frameworks and Meta-Languages : Theory and Practice (LFMTP)</i> .   |
| 2016–2019 | Scientific Committee of the Research Group <i>Génie de la programmation et du logiciel (GDR GPL, CNRS)</i> .  |
| 2015–2016 | Reviewer and pre-reviewer, ANR 2015 and 2016 campaigns.   |
| 2015      | PSL-ITI PhD grant selection committee.  |
| 2014      | PC of the joint <i>Rewriting Techniques and Application–Typed Lambda-Calculi and Applications (RTA–TLCA)</i> , within the <i>Vienna Summer of Logic</i> federation of conferences.<br>Co-organization of the conference <i>High Performance Computing and Communications (HPCC)</i> at MINES ParisTech. |
| 2012–2015 | <a href="#">Deducteam seminar</a> organizer.  |
| —         | Reviews for workshops (PxTP, LFMTP...), conferences (LICS, CSL, RTA, TLCA...) and journals (TCS, Information and Computation...).   |

## PHD AND POST-DOCTORAL SUPERVISION

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| since 2021 | <b>Yoan Gérard, PhD student</b> (advisor, co-supervision G. Dowek 50%). Proof sharing among systems with <a href="#">Dedukti</a> , and reverse mathematics.  |
| since 2020 | <b>El Mehdi Cherradi, PhD student</b> (Referent on behalf of MINES ParisTech – advisor P.-A. Melliès). Computational and interactive interpretation of homotopy type theory and higher-order toposes.  |
| 2017–2021  | <b>Guillaume Genestier, PhD</b> (co-supervision 50%, advisor F. Blanqui). Termination criterion for the $\lambda\Pi$ -calcul modulo theory, implementation in <a href="#">Dedukti</a> .  |
| 2014–2015  | <b>Arnaud Spiwack, post-doctoral fellow</b> . Type reconstruction and basic tactic language for <a href="#">Dedukti</a> .  |
| 2013–2016  | <b>Pierre Halmagrand, PhD</b> (co-supervision 50%, advisor D. Delahaye), <i>Automated Deduction and Proof Certification for the B Method</i> . Automated theorem proving for the set theory of the B method, using rewriting and the tools Zenon and <a href="#">Dedukti</a> .                                 |
| 2012–2015  | <b>Ronan Saillard, PhD</b> (co-supervision 80%, advisor P. Jouvelot), <i>Type Checking in the <math>\lambda\Pi</math>-Calculus Modulo : Theory and Practice</i> . Theoretical framework and implementation of <a href="#">Dedukti</a> , the associated proof checker.  |
| 2012–2015  | <b>Vivien Maisonneuve, PhD</b> (co-supervision 60%, advisor F. Irigoien), <i>Static Analysis of Control-Command Systems : Floating-Point and Integer Invariants</i> . Stability proofs for floating-point-number control-command systems, and automatic invariant computation through abstract interpretation. |
| 2010–2013  | <b>Truong Giang Le, PhD</b> (co-supervision 30%, advisor R. Rioboo), <i>Using Event-Based and Rule-Based Paradigms to Develop Context-Aware Reactive Applications</i> . Developpment of the INI programming language, syntax, typing, semantics and model-checking.  |
| 2009–2017  | <b>Around 25 students</b> , of which : 6 2nd-year MSc, 3 1st-year MSc, research engineer projects, visiting students.  |