

Curriculum Vitæ

Jacques-Henri JOURDAN

LRI, Bat 650
Université Paris Sud 11
91405 Orsay Cedex
France

(+33)1.69.15.67.35

jacques-henri.jourdan@lri.fr
<http://jhjourdan.mketjh.fr>

Research experiences

October 2017–...

Full-time CNRS researcher. VALS team (Verified Algorithms, Languages and Systems) in LRI (Computer science laboratory), Université Paris-Sud.

April 2016–September 2017

Postdoctoral position at *Max Plank Institute for Software Systems, Sarrebruck (Germany)*. RustBelt project: study and formal proof in Coq of the type system of the Rust language by using the Iris concurrent separation logic [3, 6].

April 2012–March 2016

PhD of Computer Science of *Paris VII Diderot University (France)*, advised by Xavier Leroy, in *Gallium team, Inria Paris. Verasco: a Formally Verified C Static Analyzer* [9, 7, 10, 11, 15, 12, 14, 5].

2016 thesis prize of GdR GPL (french research group on programming and software engineering).

September 2011–March 2012

Internship in *LMeASI, CEA Saclay (France)*, with Eric Goubault and Sylvie Putot. Inference of invariant inequalities for polynomial dynamical systems [13].

April–July 2011

Internship in *Gallium team, Inria Rocquencourt (France)*, with François Pottier and Xavier Leroy. Implementation of a certified parser for Compcert, a formally verified C compiler [17].

April–August 2010

Internship in *Rise team, Microsoft Research Redmond (USA)*, with Francesco Logozzo. Design and implementation of abstract interpretation techniques in Spur, a powerful Javascript engine.

Performance improvements in Clousot, a static analyzer for .Net code, based on abstract interpretation.

July–August 2009

Internship in *ASAP team, INRIA Rennes (France)*, with Davide Frey and Anne-Marie Kermarrec. Design and implementation of Papeer, a P2P papers sharing system. Taking part of the Gossple project.

Education and Diplomas

2008–2013

École Normale Supérieure diploma. Main specialty: computer science. Secondary specialty: physics.

2009–2011

Master of Computer Science at *MPRI* (Paris Master of Research in Computer Science), delivered by *École Normale Supérieure*.

2008–2009

License of Computer Science, delivered by *Paris VII Diderot University*.

2008

Entered *École Normale Supérieure de Paris* by *concours d'entrée, option MPI* (Mathematics, Physics and Computer Science entrance contest).

2006–2008

Classes Préparatoires aux Grandes Écoles at *Lycée Louis le Grand* (Paris, France).

Publications

- [1] Glen Mével, Jacques-Henri Jourdan, and François Pottier. Time credits and time receipts in iris. In *European Symposium on Programming (ESOP)*. Springer, April 2019.
- [2] Robbert Krebbers, Jacques-Henri Jourdan, Ralf Jung, Joseph Tassarotti, Jan-Oliver Kaiser, Amin Timany, Arthur Charguéraud, and Derek Dreyer. MoSeL: a general, extensible modal framework for interactive proofs in separation logic. In *International Conference on Functional Programming (ICFP)*. ACM, September 2018.
- [3] Ralf Jung, Jacques-Henri Jourdan, Robbert Krebbers, and Derek Dreyer. RustBelt: Securing the foundations of the Rust programming language. In *Symposium on Principles of Programming Languages (POPL)*. ACM, January 2018.
- [4] Ralf Jung, Robbert Krebbers, Jacques-Henri Jourdan, Aleš Bizjak, Lars Birkedal, and Derek Dreyer. Iris from the ground up. *Journal of Functional Programming (JFP)*, 28(e20), 2018.
- [5] Jacques-Henri Jourdan and François Pottier. A simple, possibly correct LR parser for C11. *Transactions on Programming Languages and Systems (TOPLAS)*, 39(4), August 2017.
- [6] Robbert Krebbers, Ralf Jung, Aleš Bizjak, Jacques-Henri Jourdan, Derek Dreyer, and Lars Birkedal. The essence of higher-order concurrent separation logic. In *European Symposium on Programming (ESOP)*. Springer, April 2017.
- [7] Jacques-Henri Jourdan. Sparsity preserving algorithms for octagons. In *Numerical and Symbolic Abstract Domains Workshop (NSAD)*, pages 57–70. Elsevier, September 2016.
- [8] Jacques-Henri Jourdan. Statistically profiling memory in OCaml. OCaml Workshop, September 2016.
- [9] Jacques-Henri Jourdan. *Verasco: a Formally Verified C Static Analyzer*. PhD thesis, Université Paris Diderot (Paris 7), May 2016.
- [10] Sylvie Boldo, Jacques-Henri Jourdan, Xavier Leroy, and Guillaume Melquiond. Verified compilation of floating-point computations. *Journal of Automated Reasoning (JAR)*, 54(2):135–163, February 2015.
- [11] Jacques-Henri Jourdan, Vincent Laporte, Sandrine Blazy, Xavier Leroy, and David Pichardie. A formally-verified C static analyzer. In *Symposium on Principles of Programming Languages (POPL)*, pages 247–259. ACM, January 2015.
- [12] Thomas Braibant, Jacques-Henri Jourdan, and David Monniaux. Implementing and reasoning about hash-consed data structures in Coq. *Journal of Automated Reasoning (JAR)*, 53(3):271–304, October 2014.

- [13] Eric Goubault, Jacques-Henri Jourdan, Sylvie Putot, and Sriram Sankaranarayanan. Finding non-polynomial positive invariants and lyapunov functions for polynomial systems through darbox polynomials. In *American Control Conference (ACC)*, pages 3571–3578. IEEE, June 2014.
- [14] Thomas Braibant, Jacques-Henri Jourdan, and David Monniaux. Implementing hash-consed structures in Coq. In *Interactive Theorem Proving (ITP)*, pages 477–483, July 2013.
- [15] Sylvie Boldo, Jacques-Henri Jourdan, Xavier Leroy, and Guillaume Melquiond. A formally-verified C compiler supporting floating-point arithmetic. In *IEEE Symposium on Computer Arithmetic (ARITH)*, pages 107–115. IEEE, April 2013.
- [16] Sébastien Briaies, Stéphane Caron, Jean-Michel Cioranescu, Jean-Luc Danger, Sylvain Guilley, Jacques-Henri Jourdan, Arthur Milchior, David Naccache, and Thibault Porteboeuf. 3D hardware canaries. In *Cryptographic Hardware and Embedded Systems (CHES)*, pages 1–22. Springer, September 2012.
- [17] Jacques-Henri Jourdan, François Pottier, and Xavier Leroy. Validating LR(1) parsers. In *European Symposium on Programming (ESOP)*, pages 397–416. Springer, March 2012.

Teaching and Science popularization experiences

2013–2015

Teaching Assistant at *École Normale Supérieure*. Compilation and programming languages course with Jean-Christophe Filliâtre.

2006–...

Member of the *France-IOI* association, teaching algorithmics to French teenagers and coaching the French team for the International Olympiad in Informatics (IOI).

2011–2013

Member of the french *beaver* contest organization committee, allowing high school and junior high school students to discover computer science.

2017

Member of the jury of the SWERC contest. The SWERC is the West European branch of the ACM ICPC.

Collective responsibilities

Program committee member: ITP 2018, Coq Workshop 2018

Reviewer for the conférences: NASA Formal methods 2012, ICFP 2015, SAS 2016, POPL 2017, ESORICS 2017, POPL 2018

2012–2015

Coorganizer of the *Inria Paris-Rocquencourt junior seminar*. Scientific seminar by PhD students about the very diverse subjects studied at Inria.