

Jacques-Henri JOURDAN

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Research experiences

April 2016–...

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.

2012–2016

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* [5, 3, 6, 7, 10, 8, 11].

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

2011–2012

Internship in LMeASI, CEA Saclay (France), with Eric Goubault and Sylvie Putot. Inference of invariant inequalities for polynomial dynamical systems [9].

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 [13].

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.

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 speciality: computer science. Secondary speciality: 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] 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)*, April 2017.
- [2] Jacques-Henri Jourdan and François Pottier. A simple, possibly correct LR parser for C11. *Transactions on Programming Languages and Systems (TOPLAS)*, 2017. To appear.
- [3] Jacques-Henri Jourdan. Sparsity preserving algorithms for octagons. In *Numerical and Symbolic Abstract Domains Workshop (NSAD)*, pages 57–70. Elsevier, September 2016.
- [4] Jacques-Henri Jourdan. Statistically profiling memoy in OCaml. OCaml Workshop, September 2016.
- [5] Jacques-Henri Jourdan. *Verasco: a Formally Verified C Static Analyzer*. PhD thesis, Université Paris Diderot (Paris 7), May 2016.
- [6] 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, 2015.
- [7] 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, 2015.
- [8] 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, 2014.
- [9] Eric Goubault, Jacques-Henri Jourdan, Sylvie Putot, and Sriram Sankaranarayanan. Finding non-polynomial positive invariants and lyapunov functions for polynomial systems through darboux polynomials. In *American Control Conference (ACC)*, pages 3571–3578. IEEE, 2014.
- [10] 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, 2013.
- [11] Thomas Braibant, Jacques-Henri Jourdan, and David Monniaux. Implementing hash-consed structures in Coq. In *Interactive Theorem Proving (ITP)*, pages 477–483, 2013.
- [12] Sébastien Briaïs, Stéphane Caron, Jean-Michel Cioranescu, Jean-Luc Danger, Sylvain Guillely, Jacques-Henri Jourdan, Arthur Milchior, David Naccache, and Thibault Porteboeuf. 3D hardware canaries. In *Cryptographic Hardware and Embedded Systems (CHES)*, pages 1–22. Springer, 2012.
- [13] Jacques-Henri Jourdan, François Pottier, and Xavier Leroy. Validating LR(1) parsers. In *European Symposium on Programming (ESOP)*, pages 397–416. Springer, 2012.

Teaching and Science popularization experiences

2013–2015

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

2012–2015

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

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.

Skills

Programming languages and technologies:

Expert: Coq, C, OCaml

Experienced: C++, C#, JAVA, PHP, HTML, SQL...

Regular use of office softwares: L^AT_EX, Beamer, Office...

Languages:

French: native.

English: fluent.

Russian, German: beginner.