# Jean-Baptiste Tristan

| Personal information | Web | http://jtristan.github.io |
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| | Email | jean.baptiste.tristan@gmail.com |
| | Citizenship | French, permanent resident of the United States |

**Research Interests**

- Probabilistic programming and inference compilation
- Scalable, distributed, parallel machine learning algorithms and systems
- Application of machine learning to program analysis and formal proofs
- Formal verification of compilers

**Education**

**Ph.D. Computer Science**, 2009
*University of Paris 7, Paris, France*
- Title: Formal Verification of Translation Validators
- Performed at INRIA (French Institute for Research in Computer Science and Automation)

**M.Sc. Computer Science**, 2006
*Ecole Normale Superieure, Paris, France*

**Undergraduate Studies**
I obtained several French diplomas that do not correspond well to US diplomas.
- "DEUG" in mathematics and computer science (*University of Paris 7, Paris, France*)
- "License" in computer science (*University of Paris 7, Paris, France*)
- "Magistere" in mathematics and computer science (*Ecole Normale Superieure, Paris, France*)

**Awards**

Recipient of the **2011 La Recherche award in Information Sciences** along with Sandrine Blazy, Zaynah Dargaye, and Xavier Leroy for our work on the CompCert verified C compiler.

Invited to the IFIP working group on Functional Programming and the IFIP working group on programming languages.

**Research Experience**

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| **Oracle labs**, Burlington, Massachusetts USA | |
| *Principal Member of Technical Staff* | **10/2015-present** |
| **Oracle labs**, Burlington, Massachusetts USA | |
| *Senior Member of Technical Staff* | **11/2011-10/2015** |
| **Harvard University**, Cambridge, Massachusetts USA | |
| *Postdoctoral fellow* | **11/2009 - 11/2011** |
| **Microsoft research-INRIA joint center**, Saclay, France | |
| *Intern* | **Fall 2009** |
| **Harvard University**, Cambridge, Massachusetts USA | |
| *Intern* | **Summer 2005** |
| **Exalead R&D**, Paris, France | |
| *Intern* | **Summer 2004** |
| **University of Paris, 7**, Paris, France | |
| *Intern* | **Summer 2003** |

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| TEACHING EXPERIENCE | **Harvard University**, Cambridge, Massachusetts, USA |

**Harvard University**, Cambridge, Massachusetts, USA
*Visiting Lecturer, CS 153: Compiler Construction* — **Fall 2015**
**MIT**, Cambridge, Massachusetts, USA
*Guest Lecturer, 6.892: Interactive Computer Theorem Proving* — **Fall 2011**
**Harvard University**, Cambridge, Massachusetts, USA
*Teaching fellow, CS51: Introduction to computer science II* — **Spring 2011**
**Harvard University**, Cambridge, Massachusetts, USA
*Teaching fellow, CS50: Introduction to computer science I* — **Fall 2010**

PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL CONFERENCES

*Exponential Stochastic Cellular Automata for Massively Parallel Inference*
Manzil Zaheer, Michael Wick, Jean-Baptiste Tristan, Alex Smola, Guy Steele.
In **AISTATS'16**: International Conference on Artificial Intelligence and Statistics, 2016.

*Adding approximate counters*
Guy Steele, Jean-Baptiste Tristan.
In **PPOPP'16**: ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, 2016. **Selected to appear in the Transaction On Parallel Computing journal (TOPC)**.

*Efficient Training of LDA on a GPU by Mean-for-Mode Estimation*
Jean-Baptiste Tristan, Joseph Tassarotti, Guy Steele.
In **ICML'15**: International Conference on Machine Learning, 2015.

*Augur: Data-Parallel Probabilistic Modeling*
Jean-Baptiste Tristan, Daniel Huang, Joseph Tassarotti, Adam Pocock, Stephen J. Green, Guy Steele.
In **NIPS'14**: Annual Conference on Neural Information Processing Systems, 2014. **Spotlight**.

*Parallel programming with big operators*
Changhee Park, Guy Steele, Jean-Baptiste Tristan.
In **PPOPP'13**: ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, 2013.

*RockSalt: Better, Faster, Stronger SFI for the x86*
Greg Morrisett, Gang Tan, Joseph Tassarotti, Jean-Baptiste Tristan, Edward Gan.
In **PLDI '12**: ACM SIGPLAN Conference on Programming Language Design and Implementation, 2012.

*Evaluating Value-Graph Translation Validation for LLVM*
Jean-Baptiste Tristan, Paul Govereau, Greg Morrisett.
In **PLDI '11**: ACM SIGPLAN Conference on Programming Language Design and Implementation, 2011.

*A simple, verified validator for software pipelining*
Jean-Baptiste Tristan, Xavier Leroy.
In **POPL '10**: ACM SIGACT-SIGPLAN Symposium on Principles of Programming Languages, 2010.

*Verified Validation of Lazy Code Motion*
Jean-Baptiste Tristan, Xavier Leroy.
In **PLDI '09**: ACM SIGPLAN Conference on Programming Language Design and Implementation, 2009.

*Formal verification of translation validators: A case study on instruction scheduling optimizations*
Jean-Baptiste Tristan, Xavier Leroy.
In **POPL '08**: ACM SIGACT-SIGPLAN Symposium on Principles of Programming Languages, 2008.

PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL WORKSHOPS

*Comparing Gibbs, EM and SEM for MAP Inference in Mixture Models*
Manzil Zaheer, Michael Wick, Satwik Kottur, Jean-Baptiste Tristan.
In **OPT'15**: Optimization for Machine Learning, 2015.

*Exponential Stochastic Cellular Automata for Massively Parallel Inference*
Manzil Zaheer, Michael Wick, Jean-Baptiste Tristan, Alex Smola, Guy Steele.
In **LearningSys'15**: Workshop on Machine Learning Systems, 2015. **Spotlight**.

OTHER PUBLICATIONS (CURRENTLY UNDER REVIEW)

*Using Butterfly-Patterned Partial Sums to Optimize GPU Memory Accesses for Drawing from Discrete Distributions*
Guy Steele, Jean-Baptiste Tristan.
In **ArXiv**: CoRR, 2015.

ACADEMIC SERVICE

*Program Committee:* AISTATS 2017 PC Member, SNAPL 2017 PC Member, IBM PL day 2016 PC Member, PAPI 2016 PC Member, PPOPP 2016 PC Member, POPL 2012 External Reviewing Committee, Coq Workshop 2012 PC Member.

*Referee:* Communication of the ACM, ACM Transations On Programming Languages and Systems, ACM Transaction on Architecture and Code Optimization, Software Practice & Experience, Information Processing Letters, Higher-Order and Symbolic Computation.

*Reviewer:* ASPLOS, SOCC, NIPS, ICML, POPL, PLDI, PPOPP, DISC, PPDP, SSV, CAV.

*Other:* **National Science Foundation panelist in 2013, 2014, 2015**. Treasurer for ICFP 2013.

References

**Xavier Leroy**
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**Greg Morrisett**
Dean of Computing and Information Sciences
Cornell University
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Email: greg.morrisett@cornell.edu

**Guy L. Steele Jr.**
Architect
Oracle Labs
Office phone:
Email: guy.steele@oracle.com

**Andrew McCallum**
Professor of Computer Science
University of Massachusetts at Amherst
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