

Jean-Baptiste Tristan

PERSONAL INFORMATION

Web <http://jtristan.github.io>
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 Supérieure, 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 Supérieure, 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

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

TEACHING
EXPERIENCE

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 Transactions 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
Research Director
INRIA Paris
Office phone: +33 1 80 49 41 54
Email: xavier.leroy@inria.fr

Greg Morrisett
Dean of Computing and Information Sciences
Cornell University
Office phone: +1 (607) 255-9188
Email: greg.morrisett@cornell.edu

Guy L. Steele Jr.
Architect
Oracle Labs
Office phone: +1 (781) 442 2620
Email: guy.steele@oracle.com

Andrew McCallum
Professor of Computer Science
University of Massachusetts at Amherst
Office phone: +1 (413) 545-1323
Email: mccallum@cs.umass.edu