Jean-Baptiste Tristan

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INFORMATION Phone (617) 997-1404

Citizenship French, permanent resident of the United States

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)
- "License" in computer science (University of Paris 7)
- "Magistere" in mathematics and computer science (Ecole Normale Superieure of Paris)

AWARDS/HONORS

Keynote speaker at the first international conference on Probabilistic Programming.

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.

Senior member of the ACM.

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

Research
EXPERIENCE

Oracle labs, Burlington, Massachusetts USA

Research team lead, Machine Learning group 10/2017-present

Oracle labs, Burlington, Massachusetts USA

Principal Member of Technical Staff
Oracle labs, Burlington, Massachusetts USA

Senior Member of Technical Staff

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 Harvard University, Cambridge, Massachusetts USA

Fall 2015

11/2011-10/2015

Teaching fellow, CS51: Introduction to computer science II Harvard University, Cambridge, Massachusetts USA Teaching fellow, CS50: Introduction to computer science I

Spring 2011

Fall 2010

Thesis & Journal Adding Approximate Counters

PUBLICATIONS

Guy L. Steele Jr., Jean-Baptiste Tristan

In **TOPC'17**: ACM Transaction on Parallel Computing, 2017.

Formal Verification of Translation Validators

Jean-Baptiste Tristan Ph.D. dissertation

Conference **PUBLICATIONS** Gradient-based Inference for Networks with Output Constraints

Jay-Yoon Lee, Sanket Mehta, Michael L. Wick, Jean-Baptiste Tristan, Jaime Carbonell.

In AAAI'19: Thirty-Third AAAI Conference on Artificial Intelligence, 2019.

Flexible Compilation of Probabilistic Programs

Daniel Huang, Jean-Baptiste Tristan, Greg Morrisett.

In PLDI'17: ACM SIGPLAN Conference on Programming Language Design and Implementation, 2017.

Using Butterfly-Patterned Partial Sums to Optimize GPU Memory Accesses for Drawing from Dis $crete\ Distributions$

Guy Steele, Jean-Baptiste Tristan.

In PPOPP'17: ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, 2017.

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.

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

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.

Workshop **Publications**

Enforcing Output Constraints via SGD: A Step Towards Neural Lagrangian Relaxation Jay-Yoon Lee, Michael L. Wick, Jean-Baptiste Tristan, Jaime Carbonell In AKBC'17: Workshop on Automated Knowledge Base Construction, 2017.

Sketchy LDA: Towards Streaming Inference Jean-Baptiste Tristan, Michael L. Wick, Joseph Tassarotti In ML Systems'17: Workshop on ML Systems, 2017.

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.

ACADEMIC SERVICE Program Committee: HOPL 4 PC member, PLDI'18 PC member, PPS'18 PC member, IBM PL day 2016 PC member, SNAPL 2017 PC Member, PAPI 2016 PC Member, PPOPP 2016 PC Member, POPL 2012 External Reviewing Committee, Coq Workshop 2012 PC Member.

> Referee: ACM Transactions On Parallel Computing, 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: AISTATS, SOCC, NIPS, ICML, POPL, PLDI, PPOPP, DISC, PPDP, SSV, CAV.

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

PATENTS

Sparse and data-parallel inference method and system for the latent Dirichlet allocation model

Jean-Baptiste Tristan, Joseph Tassarotti, Guy L. Steele Jr.