

Joseph Tassarotti

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Education

Carnegie Mellon University

Ph.D. in Computer Science

2013 – 2018

Advisor: Robert Harper

(Dissertation approved: Jan. 2019)

Harvard College

A.B. in Computer Science, Summa Cum Laude

2009 – 2013

Employment

Boston College

Assistant Professor

2019 –

Massachusetts Institute of Technology

Research Affiliate

2019 –

Massachusetts Institute of Technology

Postdoctoral Associate

2019

Advisor: M. Frans Kaashoek

Max Planck Institute for Software Systems

Intern

Summer 2014

Advisors: Derek Dreyer and Viktor Vafeiadis

Oracle Labs

Intern

Summer 2013

Advisors: Jean-Baptiste Tristan and Guy Steele

INRIA Paris-Rocquencourt

Intern

Summer 2012

Advisor: Xavier Leroy

Teaching Experience

Boston College

Instructor of Record

Courses: Randomness and Computation

Carnegie Mellon University

Course Assistant

Courses: Constructive Logic, Foundations of Programming Languages

Instructor: Karl Crary

Harvard University

Course Assistant

Course: Introduction to the Theory of Computation

Instructor: Harry R. Lewis

Publications

Verifying Concurrent Crash-Safe Systems with Perennial.

Tej Chajed, Joseph Tassarotti, M. Frans Kaashoek, and Nickolai Zeldovich.
In *Symposium on Operating System Principles (SOSP)*, 2019.

Argosy: Verifying Layered Storage Systems with Recovery Refinement.

Tej Chajed, Joseph Tassarotti, M. Frans Kaashoek, and Nickolai Zeldovich.
In *Programming Language Design and Implementation (PLDI)*, 2019.

Scaling Hierarchical Coreference with Homomorphic Compression.

Michael L. Wick, Swetasudha Panda, Joseph Tassarotti, and Jean-Baptiste Tristan.
In *Conference on Automated Knowledge Base Construction (AKBC)*, 2019.

Sketching for Latent Dirichlet-Categorical Models.

Joseph Tassarotti, Jean-Baptiste Tristan, and Michael Wick.
In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.

A Separation Logic for Concurrent Randomized Programs.

Joseph Tassarotti and Robert Harper.
In *Principles of Programming Languages (POPL)*, 2019.

MoSeL: A General, Extensible Modal Framework for Interactive Proofs in Separation Logic.

Robbert Krebbers, Jacques-Henri Jourdan, Ralf Jung, Joseph Tassarotti, Jan-Oliver Kaiser, Amin Timany, Arthur Charguéraud, and Derek Dreyer.
In *International Conference on Functional Programming (ICFP)*, 2018.

Verified Tail Bounds for Randomized Programs.

Joseph Tassarotti and Robert Harper.
In *International Conference on Interactive Theorem Proving (ITP)*, 2018.

A Higher-Order Logic for Concurrent Termination-Preserving Refinement.

Joseph Tassarotti, Ralf Jung, and Robert Harper.
In *European Symposium on Programming (ESOP)*, 2017.

Efficient Training of LDA on a GPU by Mean-for-Mode Estimation.

Jean-Baptiste Tristan, Joseph Tassarotti, and Guy L. Steele Jr.
In *International Conference on Machine Learning (ICML)*, 2015.

Verifying Read-Copy-Update in a Logic for Weak Memory.

Joseph Tassarotti, Derek Dreyer, and Viktor Vafeiadis.
In *Programming Language Design and Implementation (PLDI)*, 2015.

Augur: Data-Parallel Probabilistic Modeling.

Jean-Baptiste Tristan, Daniel Huang, Joseph Tassarotti, Adam Craig Pocock, Stephen J. Green, and Guy L. Steele Jr.

In *Neural Information Processing Systems (NIPS)*, 2014.

RockSalt: better, faster, stronger SFI for the x86.

Greg Morrisett, Gang Tan, Joseph Tassarotti, Jean-Baptiste Tristan, and Edward Gan.

In *Programming Language Design and Implementation (PLDI)*, 2012.

Honors and Awards

- Robert C. Byrd Honors Scholarship, 2009
- Detur Book Prize, 2010
- Harvard College Program for Research in Science and Engineering Fellow, 2011
- Herchel Smith-Harvard Undergraduate Science Research Program Fellow, 2012
- Member of Phi Beta Kappa, Alpha-Iota Chapter, 2013
- NSF Graduate Research Fellowship Program Honorable Mention, 2013 and 2014
- Achievement Rewards for College Scientists Foundation (ARCS) Scholar, 2013-2016
- National Defense Science and Engineering Graduate (NDSEG) Fellow, 2014-2017
- Invited to Dagstuhl Seminar on *Compositional Verification Methods for Next-Generation Concurrency*, 2015
- Carnegie Mellon University Presidential Fellowship, 2018

Academic Service

- Program Committee Member for International Workshop on Coq for Programming Languages (CoqPL) 2020.
- External reviews for Foundations of Software Science and Computation Structures (FoSSaCS), Logic in Computer Science (LICS), Interactive Theorem Proving (ITP), Principles of Programming Languages (POPL), International Conference on Functional Programming (ICFP), Certified Proofs and Programs (CPP), Journal of Automated Reasoning, Theoretical Computer Science.
- CMU CS Department Doctoral Review Committee Member, 2015-2017
 - Committee monitors courses and requirements of the Ph.D. program, and discusses problems faced by the student body.
- CMU CS Department Speaker's Club Evaluator, 2015-2017
 - Rated and provided feedback on talks given by Ph.D. students.
- CMU CS Department Open House Student Co-Organizer, 2015
 - Helped organize events to recruit prospective Ph.D. students.

Patents

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

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

Number 9767416, 2017.

Data-parallel probabilistic inference.

Jean-Baptiste Tristan, Guy L. Steele Jr., Daniel E. Huang, and Joseph Tassarotti.

Number 10496929, 2019.