

Edward Z. Yang

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Education

- 2012-now — **Stanford University**, PhD student
- 2008-2012 — **Massachusetts Institute of Technology**, Bachelors of Science in Computer Science. GPA 5.0/5.0
- 2010-2011 — **Cambridge University**, took the Part IB Computer Science Tripos and History and Philosophy of Science Tripos as part of the Cambridge-MIT Exchange.

Research Interests

I'm interested in applying operating system mechanisms (hardware isolation, dynamic resource limits) to the design and construction programming languages, and vice versa (type systems, formal verification, information flow control).

Research Experience

- PhD Student, **Stanford University**. 2012—now
- Collaborator, **Microsoft Research Cambridge** (w. Simon Peyton-Jones and Simon Marlow). Spring 2011
 - Worked on the new code generator backend for GHC, which included debugging existing compiler bugs, as well as designing and implementing a new single-use inlining optimization pass using the Hoopl dataflow analysis framework.
- Intern, **Galois, Inc.** Summer 2010
 - Worked on symbolic interpretation and formal verification as part of Cryptol (a compiler for cryptographic algorithms). Designed and implemented Haskell bindings for ABC, a system for sequential synthesis and verification, and integrated this with the Cryptol. Investigated interactive querying of the SAT solver to avoid nontermination problems in the compiler. See also Presentations.

Publications

Conference Papers

- Erik D. Demaine, Pavel Panchekha, David Wilson, Edward Z. Yang. **Blame Trees**. In *Proceedings of the 12th International Symposium on Algorithms and Data Structures (WADS 2013)*. To appear.
- Edward Z. Yang, Deian Stefan, John Mitchell, David Mazières, Petr Marchenko, Brad Karp.

Toward Principled Browser Security. In *Proceedings of The 14th Workshop on Hot Topics in Operating Systems (HotOS XIV), USENIX 2013*. To appear.

Awards

National Defense Science and Engineering Graduate Fellowship (2013)

Teaching

- Lecturer, “Scripts for Power Users / Evolution of a Shared Web Host”, MIT, as part of SIPB Cluedumps. Fall 2010
- Lecturer, “Haskell Type Classes”, MIT, as part of SIPB IAP classes. Winter 2010
- Teaching Assistant, Zombies drink caffeinated 6.001, MIT. Winter 2010.
- Lecturer, “Introduction to Web Application Security”, MIT SIPB IAP. Winter 2009.

Presentations

- Yang, Edward. “abcBridge: Functional Interfaces for AIGs and SAT solving.” Presented at Galois Tech Talks.
<http://blog.ezyang.com/2010/08/galois-tech-talk-abcbridge-functional-interfaces-for-aigs-and-sat-solving/>

Related Work Experience

- Tech Intern, **Jane Street**. Summer 2011.
 - Worked on fundamental asynchronous programming infrastructure used by Jane Street, including implementing and proving the performance properties a union-find optimization for avoiding space leaks of synchronizing variables. Also implemented Paxos in Ocaml for our internal systems and developed a novel algorithm for diskless crash recovery.

Other

- I maintain a technical blog at <http://blog.ezyang.com/> where I frequently discuss topics related to my research interests.