Yao Li

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GitHub	github.com/lastland

I am a 2nd-year Ph.D. student at the University of Pennsylvania. My research interests include functional programming, dependent types, and formal verification.

Current Projects

- **DeepSpec Web Server** (https://deepspec.org/entry/Project/DeepSpec+Web+Server)
  We are trying to build a formally verified HTTP server running on a formally verified operating system. We are particularly interested in:

  1. formalizing an HTTP specification in Coq proof assistant based on RFC documents and popular open source softwares,

  2. writing the specification in the form that would be both easy for testing and verification, and

  3. using Princeton VST to formally verify a web server written in C, and making an end-to-end connection with the specification of Yale CertiKOS, a formally verified operating system.

  The project is part of the NSF DeepSpec expedition (https://deepspec.org).

- **Haskell to Coq** (https://github.com/antalsz/hs-to-coq)
  We are trying to use the Coq proof assistant to mechanically verify properties of Haskell programs. In particular, I am now focused on verifying the containers library of GHC (the Glasgow Haskell Compiler). The project is also part of the NSF DeepSpec expedition.

Publications

- **AutoBench: Finding Workloads That You Need Using Pluggable Hybrid Analyses**
  by Yudi Zheng, Andrea Rosa, Luca Salucci, **Yao Li**, Haiyang Sun, Lubomir Bulej,
  Lydia Y. Chen, Zhengwei Qi, and Walter Binder
  23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering *(SANER)*
  ERA Track, 2016

- **ScalaHDL: Express and Test Hardware Designs in a Scala DSL**
  by **Yao Li**, Antonio R. Lopes, Zhouyun Xu, Zhengwei Qi, and Haibing Guan,
  32nd IEEE International Conference on Computer Design *(ICCD)*, 2014

Internship

July 2012 - **Sep 2012**	Microsoft, Shanghai, China *Software Development Engineer Intern*
	I developed and maintained softwares in the infrastructure team led by Zhiliang Xu in the Commerce Department.

Mar 2015 - **July 2015**	Universita della Svizzera italiana, Lugano, Switzerland *Research Assistant*
	I worked with Prof. Walter Binder and his dynamic analysis group on program analysis research.

Teaching Practicum

- SE 108: Programming and Data Structures II, Fall 2013, Shanghai Jiao Tong University
- CIS 552: Advanced Programming, Fall 2017, University of Pennsylvania
- CIS 511: Theory of Computation, Spring 2018, University of Pennsylvania

Honors & Awards

- Outstanding Graduate of Shanghai Jiao Tong University, 2016
- China National Scholarship, 2014
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- China National Scholarship, 2012
- 1st Prize in the 4th Intel Cup National Collegiate Software Innovation Contest in China, 2011
- 1st Prize in National Olympiad in Informatics in Provinces, 2008
- 1st Prize in National Olympiad in Informatics in Provinces, 2007