Shu-yu Guo

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Education

B.S. Computer Science, **University of Chicago**, 2008

B.A. Linguistics, **University of Chicago**, 2008

Ph.D. Computer Science, **UCLA**, 2013-2014 (expected)

Undergraduate GPA: 3.9; Current GPA: 4.0

Select Technical Skills

Programming Languages

- Functional (**Haskell, Standard ML, Scheme**)   **7 years**
- Object-Oriented (**Java, C++**)   **6 years**
- Dynamic (**Ruby, JavaScript, PHP**)   **6 years**
- C   **6 years**
- SQL

Web Development and Design

- (X)HTML/CSS
- 2.0 technologies; AJAX with frameworks such as jQuery and Prototype
- Development of HTTP servers and application frameworks

Unix (Linux, FreeBSD, some SysV)

Mac OS X

Window (XP, Vista, 7)

Industry Experience

Research Intern   Summer 2010
Mozilla   **Mountain View, CA**
Designed and implemented a one-pass parse-time SSA construction algorithm for JavaScript.

Systems Administrator   2006–2008
NSIT   **University of Chicago**
Administration of various systems, including Linux (RHEL) systems and Cyclades console servers.
Designed and implemented a suite of automation scripts for RHEL systems in the bash shell.

Computing Assistant   2005–2006
Residential Computing   **University of Chicago**
On-site diagnostic and resolution of computing issues with residents in University housing.

Research Experience

Ph.D. Student   2008–Present
Jens Palsberg   **UCLA**
Programming language semantics. Investigating proof techniques for correctness of dynamic compilation techniques, specifically, proving correctness for trace compilation.

Research Assistant   2006–2008
Robby Findler   **University of Chicago**
Modeling of software contracts on immutable data structures. Analysis of complexity and optimization of software contract implementation in PLT Scheme.

Open Source

Solanin   http://syg.github.com/solanin/
A web music streamer written in Haskell that transcodes various formats to mp3 on the fly. Has an AJAX interface and supports searching and incremental music database rebuilding.

Notable Projects

May-happen-in-parallel analysis tool for a subset of X10.	*Parallel Language*, UCLA
Constraint-based pointer aliasing analysis tool.	*Static Analysis*, UCLA
Small operating system for the Lego RCX.	*Operating Systems*, UChicago
Compiler for a subset of ML.	*Implementation of Computer Languages*, UChicago

Teaching Experience

Introduction to Computer Science I	Fall 2009, UCLA
Introduction to Computer Science II	Winter 2010, UCLA
Introduction to Computer Science I	Spring 2010, UCLA

Papers

Shu-yu Guo and Jens Palsberg. *The Essence of Compiling with Traces.* Submitted to POPL 2011.
Robby Findler, Shu-yu Guo, and Anne Rogers. *Lazy Contract Checking for Immutable Data Structures.* IFL 2007.

Talks

"Lazy Contract Checking for Immutable Data Structures". Visit. Tohoku University. Summer 2007.

"Lazy Contract Checking for Immutable Data Structures". Conference, IFL 2007. Freiburg, Germany. September, 2007.

Awards and Honors

Sigma Xi Research Society

Phi Beta Kappa Honor Society

Dean's List at University of Chicago 2004–2008