

CONTACT INFORMATION	Department of Computer Science Yale University 51 Prospect Street, New Haven, CT 06511-8937 Phone: +1 (203) 430-2840 Email: ronghui.gu@yale.edu, rg3123@columbia.edu Homepage: http://www.guronghui.com	
INTEREST	Programming languages and operating systems, with a focus on language-based support for safety and security, certified system software, certified programming and compilation, formal methods, and concurrency reasoning.	
EDUCATION	Yale University Ph.D. in Computer Science <ul style="list-style-type: none"> • Advisor: Prof. Zhong Shao • Thesis: An Extensible Architecture for Building Certified Sequential and Concurrent OS Kernels. • Distinction Dissertation of Yale Graduate School of Art and Science • Nomination for ACM Dissertation Award M.S. and M.Phil. in Computer Science	New Haven, CT 2011 - 2016 2011 - 2014
	Tsinghua University B.S. in Computer Science <ul style="list-style-type: none"> • Advisor: Prof. Yuan Dong and Prof. Shengyuan Wang • GPA: 91.2 / 100 Rank: 4 / 118 • Excellent Undergraduate of Tsinghua University, top 1.9% (67 among 3543) • Honors Undergraduate Thesis of Tsinghua University, top 4% (5 among 118) 	Beijing, China 2007 - 2011
PROFESSIONAL EXPERIENCE	Yale University <i>Research Assistant, Associate Research Scientist</i> Working on CertiKOS, an extensible architecture for building certified OS kernels. As the lead developer of the project, verified a series of sequential and concurrent OS kernels in Coq with my Yale colleagues. The most realistic one is written in 6,500 lines of C and x86 assembly and runs on stock x86 multicore machines.	New Haven, CT 2011 - present
	Tsinghua University <i>Research Assistant</i> Working on verifying the preemptive scheduling and nested interrupt handling of $\mu\text{C}/\text{OS-II}$ running on the PowerPC platform.	Beijing, China Spring 2011
INDUSTRIAL EXPERIENCE	Google Inc. <i>Software Engineer</i> Ecopia Tech Corporation <i>Research Intern</i>	Mountain View, CA 2016 - 2017 Ontario, Canada Summer 2015

SELECTED CONFERENCE PUBLICATIONS **An Auditing Language for Preventing Correlated Failures in the Cloud.**
(with Ennan Zhai, Ruzica Piskac, Xun Lao, and Xi Wang)
Proceedings of 32th ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA'17), 2017.
(Accept rate: **29%**)

CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels.

(with Z. Shao, H. Chen, X. Wu, J. Kim, V. Sjöberg, and D. Costanzo)
Proceedings of the 12th USENIX Symposium on Operating Systems Design and Implementation (OSDI'16), 2016.

(Accept rate: **18%**)

Media coverage: Yale News, International Business Times, Yale Daily News

Honor: Selected in the **Research Highlights** section of the CACM.

End-to-End Verification of Information-Flow Security for C and Assembly Programs.

(with D. Costanzo and Z. Shao)
Proceedings of the 37th annual ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI'16), 2016.

(Accept rate: **16%**)

Toward Compositional Verification of Interruptible OS Kernels and Device Drivers.

(with C. Hao, X. Wu, Z. Shao, and J. Lockerman)
Proceedings of the 37th annual ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI'16), 2016.

(Accept rate: **16%**)

Deep Specifications and Certified Abstraction Layers.

(with J. Koenig, T. Ramanandro, Z. Shao, X. Wu, S. Weng, H. Zhang, and Y. Guo)

Proceedings of the 42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'15), 2015.

(Accept rate: **23%**)

SELECTED PRESENTATIONS **Introduction to CertiKOS.**

• New England Systems Verification Day, MA Oct. 2017

Building Fully Trustworthy OS Kernels through Formal Verification.

- University of Washington, WA Aug. 2017
- Chicago University, IL Apr. 2017
- University of Minnesota Twin Cities, MN Mar. 2017
- Pennsylvania State University, PA Mar. 2017
- New York University, NY Mar. 2017
- Boston University, MA Mar. 2017
- University of Connecticut, CT Feb. 2017

- Columbia University, NY Feb. 2017

An Extensible Architecture for Building Certified Concurrent OS Kernels.

- University of California, Davis, CA Dec. 2016
- Columbia University, NY Dec. 2016
- University of Pennsylvania, PA Nov. 2016
- Princeton University, NJ Nov. 2016
- OSDI, GA Nov. 2016

Deep Specifications and Certified Abstraction Layers.

- Yale Programming Languages Day, CT Nov. 2015
- New England Programming Languages and Systems Symposium June 2015
- High Confidence Software and Systems Conference, Maryland May 2015
- POPL, Mumbai, India Jan. 2015

SELECTED HONORS	Distinction Dissertation, Yale University	Dec. 2016
	Nomination for ACM Dissertation Award, Yale University	Aug. 2016
	Robert Willets Carle Scholarship, Yale University	Feb. 2016
	Excellent Undergraduate (top 1.9%), Tsinghua University	Jul. 2011
	Excellent Undergraduate of Beijing City	Jul. 2011
	Honors Undergraduate Thesis (top 4%), Tsinghua University	Jul. 2011
	Sohu Scholarship, Tsinghua University	Oct. 2010
	Ticket Master Scholarship, Tsinghua University	Oct. 2009
	First Prize of National Mathematical Olympiad Competition, China	Oct. 2006

PROFESSIONAL ACTIVITIES	Member of External Review Committee, <i>39th annual ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI'18)</i> , 2018.
	Reviewer for <i>Transactions on Computers, IET Software, Science China Information Sciences, FMAT'17, TACAS'15</i> . 2015 - present.
	Member of CPS-VO. 2015 - present.

TEACHING EXPERIENCE	Teaching Assistant at Yale University	Fall 2012 - Fall 2015
	• CPSC 422/522 Operating System Design and Implementation (Fall 2015) Instructor: Prof. Zhong Shao	
	• CPSC 458/558 Automatic Decision Systems (Fall 2015) Instructor: Dr. Stephen Slade	
	• CPSC 439/539 Software Engineering (Spring 2015 and Spring 2014) Instructor: Prof. Ruzica Piskac	
	• CPSC 424/524 Parallel Programming Techniques (Fall 2014 and Fall 2013) Instructor: Dr. Andrew Sherman	
	• CPSC 112 Introduction to Programming Languages (Spring 2013 and Fall 2012) Instructor: Prof. Drew V. McDermott and Prof. Daniel Abadi	

CITIZENSHIP Peoples Republic of China