

Ronghui Gu

CONTACT INFORMATION	Department of Computer Science Yale University 51 Prospect Street, New Haven, CT 06511 Phone: +1 (203) 430-2840 Email: ronghui.gu@yale.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.
EDUCATION	<div><div>Yale UniversityNew Haven, CT Ph.D. in Computer Science2011 - 2016<ul style="list-style-type: none">• Advisor: Prof. Zhong Shao• Thesis: An Extensible Architecture for Building Certified Sequential and Concurrent OS Kernels.• Nomination for ACM Dissertation AwardM.S. and M.Phil. in Computer Science2011 - 2014<ul style="list-style-type: none">• GPA: 3.9 / 4</div><div>Tsinghua UniversityBeijing, China B.S. in Computer Science2007 - 2011<ul style="list-style-type: none">• Advisor: Prof. Yuan Dong and Prof. Shengyuan Wang• GPA: 91.2 / 100 Rank: 4 / 118• Graduation with Distinction (top 2 %)</div></div>
PROFESSIONAL EXPERIENCE	<div><div>Yale UniversityNew Haven, CT <i>Research Associate</i>2016 - present <i>Research Assistant</i>2011 - 2016<p>Working on CertiKOS, an extensible architecture for building certified OS kernels. As the key 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.</p></div><div>Tsinghua UniversityBeijing, China <i>Research Assistant</i>Spring 2011<p>Working on verifying the preemptive scheduling and nested interrupt handling of $\mu\text{C}/\text{OS-II}$.</p></div></div>
CONFERENCE PUBLICATIONS	CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels. (with Z. Shao, H. Chen, X. Wu, J. Kim, V. Sjöberg, and D. Costanzo) <i>Proceedings of the 12th USENIX Symposium on Operating Systems Design and Implementation (OSDI'16), 2016.</i> (Accept rate: 18%)

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. Ramanananandro, 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
MANUSCRIPTS

Language and Compiler Support for Building Certified Concurrent Abstraction Layers.

(with Z. Shao, X. Wu, J. Kim, J. Koenig, T. Ramanananandro, V. Sjöberg, H. Chen, and D. Costanzo)

Submitted to *the 38th annual ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI'17), 2017.*

Safety and Liveness of MCS LockLayer by Layer.

(with V. Sjöberg, J. Kim, and Z. Shao)

Submitted to *the 6th ACM SIGPLAN Conference on Certified Programs and Proofs (CPP'17), 2017.*

TEACHING
EXPERIENCE

Teaching Assistant at Yale University

Fall 2012 - Fall 2015

- 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

SELECTED
PRESENTATIONS

An Extensible Architecture for Building Certified Concurrent OS Kernels.

- OSDI, GA Nov. 2016
- University of Pennsylvania, PA Nov. 2016
- Princeton University, NJ Nov. 2016

Deep Specifications and Certified Abstraction Layers.

	<ul style="list-style-type: none">• Yale Programming Languages Day, CT• New England Programming Languages and Systems Symposium• High Confidence Software and Systems Conference, Maryland• POPL, Mumbai, India	<div>Nov. 2015</div> <div>June 2015</div> <div>May 2015</div> <div>Jan. 2015</div>
SELECTED HONORS	Nomination for ACM Dissertation Award, Yale University Robert Willets Carle Scholarship, Yale University Travel Grant for POPL15, NSF Doctoral Fellowship, Yale University Graduation with Distinction (top 2%), Tsinghua University Outstanding Graduate, Beijing City Outstanding Undergraduate Thesis Award, Tsinghua University Sohu Scholarship, Tsinghua University Ticket Master Scholarship, Tsinghua University Tsinghua Outstanding Social Work Scholarship Elite Youth League Member of Jiangsu Province, China First Prize of National Mathematical Olympiad Competition, China First Prize of National Chemistry Olympiad Competition, China	<div>Aug. 2011</div> <div>Feb. 2016</div> <div>Jan. 2015</div> <div>Aug. 2011</div> <div>Jul. 2011</div> <div>Jul. 2011</div> <div>Jul. 2011</div> <div>Oct. 2010</div> <div>Oct. 2009</div> <div>Oct. 2008</div> <div>Apr. 2007</div> <div>Oct. 2006</div> <div>Oct. 2006</div>
MEDIA COVERAGE	Yale Daily News International Business Times Yale News	<div>Nov. 2016</div> <div>Nov. 2016</div> <div>Nov.2016</div>
INDUSTRIAL EXPERIENCE	Google Inc. <i>Software Engineer</i> Ecopia Tech Corporation <i>Research Intern</i>	<div>Mountain View, CA</div> <div>2016 - present</div> <div>Ontario, Canada</div> <div>Summer 2015</div>
PROFESSIONAL ACTIVITIES	Member: CPS-VO Reviewer: TACAS'15	