Ronghui Gu

Contact Information

Department of Computer Science
Yale University
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Interests

Programming languages, operating systems, and certified system software.

Education

Yale University, New Haven, CT
Ph.D. in Computer Science — Aug. 2011 - Aug. 2016
- Advisor: Prof. Zhong Shao
- Nominated for the **ACM Doctoral Dissertation Award**.

M.S. in Computer Science — Aug. 2011 - May 2014
M.Phil. in Computer Science — Aug. 2011 - May 2014

Tsinghua University, Beijing, China
B.S. in Computer Science — Aug. 2007 - Jul. 2011
- GPA: 91.2 / 100 • Rank: 4 / 118
- Graduation with Distinction (top 2 %)

Professional Experience

Research Assistant at Yale University — Aug. 2011 - Aug. 2016
- Key developer of CertiKOS, an extensible architecture for building certified OS kernels.
- Verified a series of sequential and concurrent OS kernels in Coq with my Yale colleagues. The most realistic hypervisor consists of 6,000 lines of code and can boot Linux as a guest. The concurrent kernel supports fine-grained locking and can boot on a quad-core machine.

Research Assistant at Tsinghua University — Sept. 2010 - May 2011
- Verified the preemptive scheduling of μC/OS-II.

Selected Publications

R. Gu, Z. Shao, H. Chen, X. Wu, J. Kim, V. Sjöberg, and D. Costanzo. CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels. *Proceedings of the 12th USENIX Symposium on Operating Systems Design and Implementation (**OSDI'16**), 2016 (to appear).*

D. Costanzo, Z. Shao, **R. Gu**. End-to-End Verification of Information-Flow Security for C and Assembly Programs. *Proceedings of the 37th annual ACM SIGPLAN conference on Programming Language Design and Implementation (**PLDI'16**), 2016.*

C. Hao, X. Wu, Z. Shao, J. Lockerman, **R. Gu**. Toward Compositional Verification of Interruptible OS Kernels and Device Drivers. *Proceedings of the 37th annual ACM SIGPLAN conference on Programming Language Design and Implementation (**PLDI'16**), 2016.*

R. Gu, J. Koenig, T. Ramananandro, Z. Shao, X. Wu, S. Weng, H. Zhang, and Y. Guo. Deep Specifications and Certified Abstraction Layers. *Proceedings of the 42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (**POPL'15**), 2015.*

Selected Awards

Robert Willets Carle Scholarship, Yale University	Feb. 2016
Outstanding Graduate, Tsinghua University	Jul. 2011
Outstanding Graduate, Beijing City	Jul. 2011
Outstanding Undergraduate Thesis Award, Tsinghua University	Jul. 2011
Sohu Scholarship, Tsinghua University	Oct. 2010
Ticket Master Scholarship, Tsinghua University	Oct. 2009
First Prize of National Olympic Mathematics Competition, China	Oct. 2006

Teaching Experience

Teaching Assistant at Yale University — Fall 2012 - Fall 2015
- CPSC 458/558 Automatic Decision Systems (Fall 2015)
- CPSC 439/539 Software Engineering (Spring 2015 and Spring 2014)
- CPSC 424/524 Parallel Programming Techniques (Fall 2014 and Fall 2013)
- CPSC 112 Introduction to Programming Languages (Spring 2013 and Fall 2012)