

Kevin Boos

Systems/Mobile Researcher

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Current Work (since 2017): Project Lead/Creator of Theseus, an OS written from scratch in Rust. Rethinks state management and realizes safe, intralingual resource control for availability and evolvability.

Education

2016
2020

Ph.D. Computer Engineering, Rice University.

Advisor: Dr. Lin Zhong, *Rice Efficient Computing Group*

Dissertation: Theseus: Rethinking Operating Systems Structure and State Management

2012
2016

M.S. Computer Engineering, Rice University.

Thesis: *Immersive VR on Weak Mobile Devices via Rendering Memoization*

2007
2011

B.S. Computer Engineering, The University of Texas at Austin.

GPA: 3.91/4.00 Minor: Mandarin Chinese

Industry Experience

2020

Research Intern, Microsoft Research.

- Scalable, fault-tolerant Cloud 5G RAN and baseband processing in software.
- Mentors: Sanjeev Mehrotra, Anuj Kalia

2015

Research Intern, Microsoft Research.

- Immersive Virtual Reality for weak mobile devices.
- Mentors: David Chu, Eduardo Cuervo

2014

Advanced Technology Intern, ARRIS (formerly Motorola Mobility).

- Display sharing synchronization framework for multi-screen distributed systems.
- Mentors: Venu Vasudevan, Jehan Wickramasuriya

2012

Ph.D. Research Intern, Nokia Research Center.

- Novel I/O virtualization schemes for Linux kernel block devices.

2011

Software Developer, Emerson Process Management, I/O Services.

- Designed communication protocol to collect data from I/O devices for process control.
- Created Windows Forms app (C#) to log I/O data and generate graphical displays.

2009

Technical R&D Intern, Texas Instruments DLP.

- Developed analog circuit to power digital micromirror devices (DMD) used in pico-projectors.
- Programmed Perl test routines, lab-tested DMD functionality using probes/parametric analyzers.

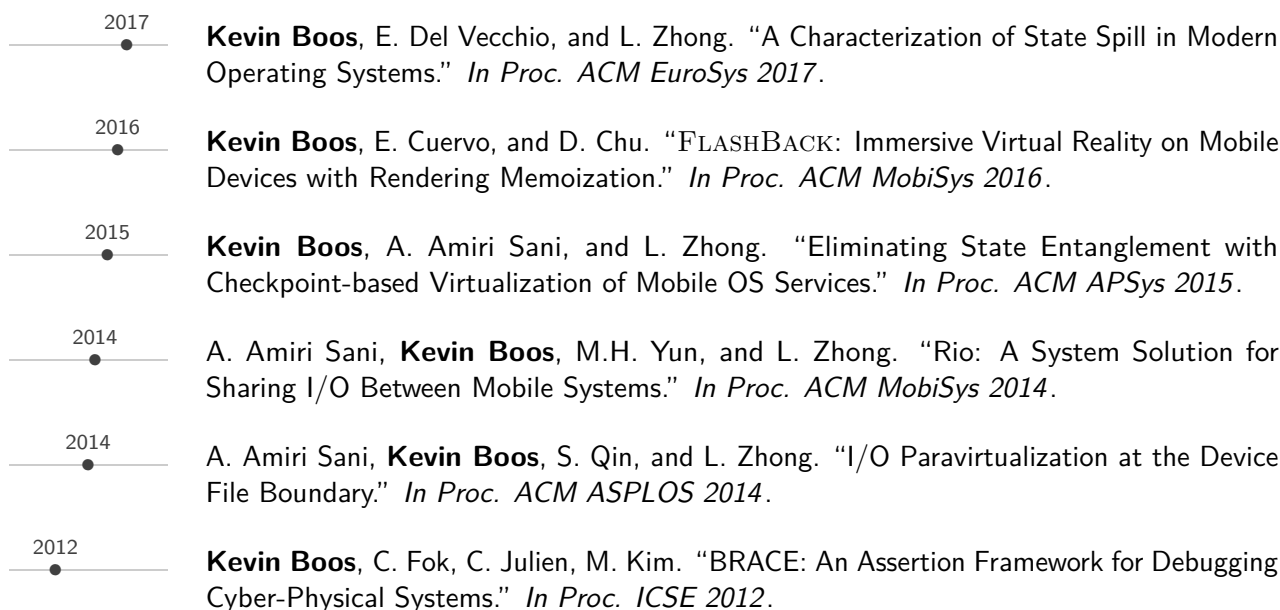
Publications

2020

Kevin Boos, N. Liyanage, R. Ijaz, and L. Zhong. "Theseus: Rethinking OS Structure and State Management." in *Proc. USENIX OSDI 2020*.

2017

Kevin Boos and L. Zhong. "Theseus: A State Spill-free Operating System." in *Proc. ACM PLOS 2017*.



Knowledge & Skills

Languages

- Rust
- C
- Java
- C++
- Shell

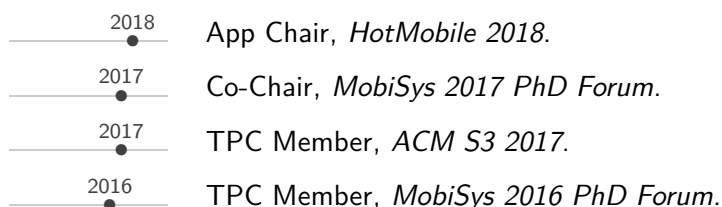
Environments/Platforms

- OS development, systems hacking
- x86 & ARM architecture
- Static analysis (Clang/LLVM, Soot)
- Android frameworks
- Linux kernel

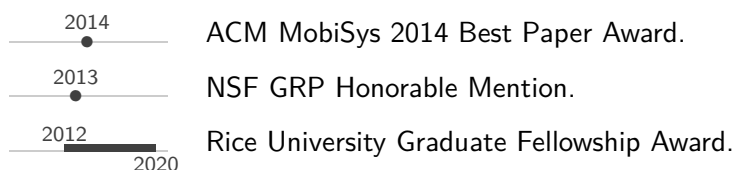
Tools

- Vim
- L^AT_EX
- Eclipse
- Git/SVN

Service



Awards



References

- Advisor **Lin Zhong, Ph.D.**, lin.zhong@yale.edu.
Professor, Yale University CS Department
- Mentor **Eduardo Cuervo, Ph.D.**, eacuervo@gmail.com.
Software Engineer, Facebook/Oculus VR
- Additional references available on request.**