

Xinyang Ge

Microsoft Research
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Education

- **Ph.D., Computer Science and Engineering** 2012.08 – 2016.08
The Pennsylvania State University, University Park
Advisor: Dr. Trent Jaeger
- **B.Eng., Software Engineering** 2008.09 – 2012.06
Nanjing University

Professional Experience

Microsoft Research, Redmond, WA

Researcher 2018.11 – Present
Senior Research Software Development Engineer 2016.09 – 2018.11

- REPT: Developed a tool that enables reverse debugging for production failures reported back to Microsoft by combining efficient online hardware tracing with novel offline binary analysis.

The Pennsylvania State University, University Park, PA

Research Assistant 2012.08 – 2016.08

- GRIFFIN: Developed a hardware-assisted control-flow integrity enforcement mechanism for unmodified program binaries using Intel Processor Trace.
- BINTRAN: Implemented a static binary rewriting tool for ELF object files that allows instrument operating system kernels for control-flow integrity.
- SPROBES: Designed an ARM TrustZone-based system that enforces the kernel code integrity for conventional operating systems (e.g., Linux).

Microsoft Research, Redmond, WA

Research Intern 2015.05 – 2015.08

- Prototyped the support of Intel Processor Trace on Windows to enable tracing arbitrary applications.

Microsoft Research, Redmond, WA

Research Intern 2014.05 – 2014.08

- Prototyped an Azure cloud fuzz testing service based on SAGE for finding security critical bugs in Windows applications (a.k.a., Microsoft Security Risk Detection).

eBay, Shanghai, China

Technical Intern 2011.08 – 2012.05

- Developed a search engine specialized for SQL queries for enabling database administrators to find and reuse high-quality queries from each other.

Nanjing University, Nanjing, China

Undergraduate Assistant 2011.02 – 2011.06

- fryy: Developed a tiny operating system running on commodity hardware for educational purpose.

Publications

1. Weidong Cui, **Xinyang Ge***, Baris Kasikci, Ben Niu, Upamanyu Sharma, Ruoyu Wang, and Insu Yun. REPT: Reverse Debugging of Failures in Deployed Software. In *Proceedings of the 13th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, October, 2018. **Jay Lepreau Best Paper Award**. (* authors listed in alphabetic order)
2. Le Guan, Peng Liu, Xinyu Xing, **Xinyang Ge**, Shengzhi Zhang, Meng Yu, and Trent Jaeger. Building a Trustworthy Execution Environment to Defeat Exploits from both Cyber Space and Physical Space for ARM. In *IEEE Transactions on Dependable and Secure Computing (TDSC)*, 2018.
3. Baris Kasikci, Weidong Cui, **Xinyang Ge**, and Ben Niu. Lazy Diagnosis of In-Production Concurrency Bugs. In *Proceedings of the 26th Symposium on Operating Systems Principles (SOSP)*, October, 2017.
4. Le Guan, Peng Liu, Xinyu Xing, **Xinyang Ge**, Shengzhi Zhang, Meng Yu, and Trent Jaeger. Trust-Shadow: Secure Execution of Unmodified Applications with ARM TrustZone. In *Proceedings of the 15th International Conference on Mobile Systems, Applications and Services (MobiSys)*, June, 2017.
5. **Xinyang Ge**, Weidong Cui, and Trent Jaeger. GRIFFIN: Guarding Control Flows Using Intel Processor Trace. In *Proceedings of the 22nd ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, April, 2017.
6. **Xinyang Ge**, Mathias Payer, and Trent Jaeger. An Evil Copy: How the Loader Betrays You. In *Proceedings of the 21st Network and Distributed System Security Symposium (NDSS)*, February, 2017.
7. Yuqiong Sun, Giuseppe Petracca, **Xinyang Ge**, and Trent Jaeger. Pileus: Protecting User Resources from Vulnerable Cloud Services. In *Proceedings of the 32nd Annual Computer Security Applications Conference (ACSAC)*, December, 2016.
8. **Xinyang Ge**, Nirupama Talele, Mathias Payer, and Trent Jaeger. Fine-Grained Control-Flow Integrity for Kernel Software. In *Proceedings of the 1st IEEE European Symposium on Security and Privacy (Euro S&P)*, March, 2016.
9. Hayawardh Vijayakumar, **Xinyang Ge**, Mathias Payer, and Trent Jaeger. JIGSAW: Protecting Resource Access by Inferring Programmer Expectations. In *Proceedings of the 23rd USENIX Security Symposium (USENIX Security)*, August, 2014.
10. Hayawardh Vijayakumar, **Xinyang Ge**, and Trent Jaeger. Policy Models to Protect Resource Retrieval. In *Proceedings of the 19th ACM Symposium on Access Control Models and Technologies (SACMAT)*, June, 2014.
11. **Xinyang Ge**, Hayawardh Vijayakumar, and Trent Jaeger. SPROBES: Enforcing Kernel Code Integrity on the TrustZone Architecture. In *Proceedings of the 3rd IEEE Mobile Security Technologies Workshop (MoST)*, May, 2014.
12. **Xinyang Ge**, Jia Liu, Qi Qi, and Zhenyu Chen. A New Prediction Approach Based on Linear Regression for Collaborative Filtering. In *Proceedings of the 8th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD)*, June, 2011.

Professional Services

- **PC Member**, ACM Conference on Computer and Communications Security (CCS), 2019.
- **PC Member**, ACM Conference on Computer and Communications Security (CCS), 2018.
- **PC Member**, IEEE Conference on Dependable and Secure Computing (DSC), 2018.
- **Reviewer**, IEEE Transaction on Dependable and Secure Computing (TDSC), 2018.
- **Reviewer**, ACM Transaction on Privacy and Security (TOPS), 2018.
- **PC Member**, ACM Conference on Computer and Communications Security (CCS), 2017.
- **PC Member**, IEEE Conference on Dependable and Secure Computing (DSC), 2017.