

XIAO GUANG WANG

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RESEARCH INTERESTS

System Security, Operating System (Virtualization, ISA-Heterogeneous System), Compiler.

EDUCATION

PhD in Computer Science, Xi'an Jiaotong University, China 2010 – 2017

- *Thesis:* Enhancing System Software Security in Cloud Environment
- *Advisor:* Prof. Yong Qi

Visiting PhD student at Florida State University, Tallahassee, U.S. 2013 – 2015

- *Research topics:* System security; Operating system; Virtualization; Compiler.
- *Advisor:* Prof. Zhi Wang

B.Eng. in Software Engineering, Northwestern Polytechnic University, China 2006 – 2010

- *Thesis:* Design and implementation of a Guest OS communication module with shared memory. (Outstanding Bachelor's Thesis, NWPU)
- *GPA:* 85.8/100. (Rank: 16 out of 236)

WORK EXPERIENCES

Postdoc Associate, Virginia Tech, Blacksburg, VA Jun. 2018 - Now

- Secure Popcorn Linux, sponsored by US Office of Naval Research (ONR). (<http://popcornlinux.org>)

Software Engineer, Huawei Cloud BU, Xi'an, China Jun. 2017 – Jun. 2018

- Heterogeneous cloud computing product design, OpenStack development (making the GPU/FGPA cloud instances publicly available).

Research Intern, Samsung Research China (SRC), Xi'an, China Nov. 2016 – Feb. 2017

- Topic: Bare-metal operating system migration with on-demand virtualization.

SELECTED PUBLICATIONS

I published papers in major software system and security conferences and journals, including USENIX ATC, ACM CCS, IEEE TDSC, RAID, ESORICS, ACM VEE, etc.

- Robert Lyerly, **Xiaoguang Wang**, and Binoy Ravindran. "Dynamic and Secure Memory Transformation in Userspace", The 25th European Symposium on Research in Computer Security (ESORICS 2020), Guildford, United Kingdom, September 14-18, 2020.
- **Xiaoguang Wang**, SengMing Yeoh, Robert Lyerly, Pierre Olivier, Sang-Hoon Kim and Binoy Ravindran. "A Framework for Software Diversification with ISA Heterogeneity", The 23rd International Symposium on Research in Attacks, Intrusions and Defenses (RAID 2020), Donostia / San Sebastian, Spain, October 14-16, 2020.
- **Xiaoguang Wang**, SengMing Yeoh, Pierre Olivier, and Binoy Ravindran. "Secure and Efficient In-process Monitor (and Library) Protection with Intel MPK", The 13th European Workshop on Systems Security (EuroSec), co-located with EuroSys 2020, Heraklion, Crete, Greece, April 27, 2020.
- **Xiaoguang Wang**, SengMing Yeoh, Robert Lyerly, Sang-Hoon Kim, and Binoy Ravindran. "A Framework to Secure Applications with ISA Heterogeneity". The 9th Workshop on Systems for Multi-core and Heterogeneous Architectures (SFMA'19) held in conjunction with EuroSys'19, Dresden, Germany, March 25-28, 2019.
- **Xiaoguang Wang**, Yong Qi, Zhi Wang, Yue Chen, Yajin Zhou. "Design and Implementation of SecPod, A Framework for Virtualization-based Security Systems". IEEE Transactions on Dependable and Secure Computing (TDSC), Vol. 16, No. 1, 2019. (DOI: 10.1109/TDSC.2017.2675991)

- **Xiaoguang Wang**, Yong Qi. “Secure the Commodity Applications Against Address Exposure Attacks”. The 22nd IEEE Symposium on Computers and Communications (ISCC’17), pp. 450-456. IEEE, 2017.
- **Xiaoguang Wang**, Yong Qi, Chi Zhang, Saiyu Qi, Peijian Wang. “SecretSafe: A Lightweight Approach Against Heap Buffer Over-read Attack”. IEEE 41th Computer Software and Application Conference (COMPSAC’17), pp. 628-636. IEEE, 2017.
- **Xiaoguang Wang**, Yue Chen, Zhi Wang, Yong Qi, Yajin Zhou. “SecPod: A Framework for Virtualization-based Security Systems”. Proceedings of the 2015 USENIX Annual Technical Conference (USENIX ATC ’15).
- Yajin Zhou, **Xiaoguang Wang**, Yue Chen, Zhi Wang. “ARMlock: Hardware-based Fault Isolation for ARM”. Proceedings of the 2014 ACM SIGSAC Conference on Computer and Communications Security (CCS). ACM, 2014.
- **Xiaoguang Wang**, Yong Qi, Yuehua Dai, Jianbao Ren, and Zhang Hang. “Protecting Outsourced Data Privacy with Lifelong Policy Carrying.” In High Performance Computing and Communications (HPCC), 2013 IEEE 10th International Conference on, pp. 896-905. IEEE, 2013.
- **Xiaoguang Wang**, Yong Qi, Yuehua Dai, and Jianbao Ren. “Transparent Security-Sensitive Process Protection via VMM-Based Process Shadowing.” In Computer Software and Applications Conference Workshops (COMPSACW’13), 2013 IEEE 37th Annual, pp. 115-120. IEEE, 2013.
- **Xiaoguang Wang**, Yong Qi, Yuehua Dai, Yi Shi, Jianbao Ren, Yu Xuan. “TrustOSV: Building Trustworthy Executing Environment with Commodity Hardware for a Safe Cloud”, Journal of Computers, 9.10 (2014): 2303-2314.
- Jianbao Ren, Yong Qi, Yuehua Dai, **Xiaoguang Wang**, Yi Shi. “AppSec: A Safe Execution Environment for Security Sensitive Applications.” Proceedings of the 11th ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments (VEE). ACM, 2015.
- Yuehua Dai, Yong Qi, Jianbao Ren, Yi Shi, **Xiaoguang Wang**, and Xuan Yu. “A lightweight VMM on many core for high performance computing.” In ACM SIGPLAN/SIGOPS International conference on Virtual Execution Environment (VEE), pp. 111-120. ACM, 2013.

For the full list, please visit my google scholar page: <https://scholar.google.com/citations?user=Sy-oJuIAAAAJ&hl=en>.

SELECTED RESEARCH PROJECTS

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|---|------------------------|
| Secure Popcorn Linux | Jun. 2018 - Now |
| <ul style="list-style-type: none"> • US Office of Naval Research (ONR). | |
| Key technology and system for large-scale semi-structured data management | Oct. 2015 - Oct. 2016 |
| <ul style="list-style-type: none"> • National Key Research and Development Plan Project. | |
| Towards Trustworthy Operating Systems | Aug. 2014 - Aug. 2015 |
| <ul style="list-style-type: none"> • US National Science Foundation (NSF). | |
| A micro-kernel based virtualization framework for performance optimization | Sept. 2010 - Jun. 2013 |
| <ul style="list-style-type: none"> • National Science and Technology Major Project. | |

PROFESSIONAL ACTIVITIES

Journal Reviewer:

- Personal and Ubiquitous Computing (Springer), 2019

Conference Program Committee Member:

- Artifact Evaluation, ACM SOSP 2019; Web Information Systems and Applications, WISA’2019

External Reviewer:

- ACM SYSTOR 2020; IEEE ICCCN 2020
- IEEE MASCOTS 2019

AWARDS

- USENIX Annual Technical Conference (USENIX ATC 2015) Student travel grant Jul. 2015
- Department of Computer Science, Florida State University, CS Expo, Best poster award. Dec. 2013
- Excellent graduate student award at XJTU Oct. 2012, Oct. 2016
- Outstanding Bachelor's Thesis, NWPU May. 2010

SKILLS

Linux kernel driver development. Excellent in C/C++/Assembly/Shell languages.
Fluent in English writing, speaking. Native language Chinese.

HOBBIES

- Table tennis, Badminton, Hiking, Swimming, Harmonica, Traveling.