

➡ Education

Ph.D. **North Carolina State University** Raleigh, NC
Department of Computer Science Aug 2008-Aug 2012
Dissertation: **Securing Virtualization: Techniques and Applications**
Research Area: Systems Security, Virtualization, Mobile Security Adviser: Dr. Xuxian Jiang

M.S. & B.S. **Xi'an Jiaotong University** Xi'an, China
Department of Computer Science Sep 1995-Mar 2002

➡ Appointments

Aug 2012 - Current Assistant Professor, Department of Computer Science, Florida State University
Aug 2008 - Jul 2012 Research Assistant, Department of Computer Science, North Carolina State University
Jul 2004 - Jul 2007 Senior Software Engineer, Intel Asia-Pacific R&D Center

➡ Refereed Publications

(Underline marks my students or the students I advised for the project.)

RAID '17

Secure In-cache Execution

Yue Chen, Mustakimur Khandaker, **Zhi Wang**

Proceedings of the 20th International Symposium on Research in Attacks, Intrusions and Defenses
Atlanta, Georgia, September 2017 (Acceptance Rate: **20%**)

USENIX Sec '17

Adaptive Android Kernel Live Patching

Yue Chen, Yulong Zhang, **Zhi Wang**, Liangzhao Xia, Chenfu Bao, Tao Wei

Proceedings of the 26th USENIX Security Symposium
Vancouver, BC, Canada, August 2017 (Acceptance Rate: **16%**)

TDSC

(Journal)

Design and Implementation of SecPod, A Framework for Virtualization-based Security Systems

Xiaoguang Wang, Yong Qi, **Zhi Wang**, Yue Chen, Yajin Zhou

IEEE Transactions on Dependable and Secure Computing (TDSC)
doi: 10.1109/TDSC.2017.2675991

ASIACCS '17

Pinpointing Vulnerabilities

Yue Chen, Mustakimur Khandaker, **Zhi Wang**

Proceedings of the 13th ACM Symposium on Information, Computer and Communications Security
Abu Dhabi, UAE, April 2017 (Acceptance Rate: **19%**)

CODASPY '16

Remix: On-demand Live Randomization

Yue Chen, **Zhi Wang**, David Whalley, Long Lu

Proceedings of the 6th ACM Conference on Data and Application Security and Privacy
New Orleans, LA, March 2016 (Acceptance Rate: **19%**)

RAID '15

Xede: Practical Exploit Early Detection

Meining Nie, Purui Su, Qi Li, **Zhi Wang**, Lingyun Ying, Jinlong Hu, Dengguo Feng

Proceedings of the 18th International Symposium on Research in Attacks, Intrusions and Defenses
Kyoto, Japan, November 2015 (Acceptance Rate: **23%**)

USENIX

ATC '15

SecPod: A Framework for Virtualization-based Security Systems

Xiaoguang Wang, Yue Chen, **Zhi Wang**, Yajin Zhou, Yong Qi

Proceedings of the 2015 USENIX Annual Technical Conference
Santa Clara, CA, USA (Acceptance Rate: **16%**)

ACM WiSec '15

Harvesting Developer Credentials in Android Apps

Yajin Zhou, Lei Wu, **Zhi Wang**, Xuxian Jiang

Proceedings of the 8th ACM Conference on Security and Privacy in Wireless and Mobile Networks

New York City, USA (Acceptance Rate: **19%**)

ASIACCS '15

Hybrid User-level Sandboxing of Third-party Android Apps

Yajin Zhou, Kunal Patel, Lei Wu, **Zhi Wang**, Xuxian Jiang

Proceedings of the 10th ACM Symposium on Information, Computer and Communications Security
Singapore (Acceptance Rate: **18%**)

CCS '14

ARMlock: Hardware-based Fault Isolation for ARM

Yajin Zhou, Xiaoguang Wang, Yue Chen, **Zhi Wang**

Proceedings of the 21st ACM Conference on Computer and Communications Security
Scottsdale, Arizona, USA (Acceptance Rate: **19%**)

CODASPY '14

Systematic Audit of Third-Party Android Phones

Michael Mitchell, Guanyu Tian, **Zhi Wang**

Proceedings of the 4th ACM Conference on Data and Application Security and Privacy
San Antonio, TX, March 2014 (Acceptance Rate: **16%**)

CODASPY '14

DIVILAR: Diversifying Intermediate Language for Anti-Repackaging on Android Platform

Wu Zhou, **Zhi Wang**, Yajin Zhou, Xuxian Jiang

Proceedings of the 4th ACM Conference on Data and Application Security and Privacy
San Antonio, TX, March 2014 (Acceptance Rate: **16%**)

NDSS '13

Taming Hosted Hypervisors with (Mostly) Deprivileged Execution

Chiachih Wu, **Zhi Wang**, Xuxian Jiang

Proceedings of the 20th Network and Distributed System Security Symposium
San Diego, CA, February 2013 (Acceptance Rate: **19%**)

2012 and Before:

EuroSys '12

Isolating Commodity Hosted Hypervisors with HyperLock

Zhi Wang, Chiachih Wu, Michael Grace, Xuxian Jiang

Proceedings of the 7th ACM SIGOPS/EuroSys European Conference on Computer Systems
Bern, Switzerland, April 2012 (Acceptance Rate: **15%**)

NDSS '12

Hey, You, Get off of My Market: Detecting Malicious Apps in Official and Alternative Android Markets

Yajin Zhou, **Zhi Wang**, Wu Zhou, Xuxian Jiang

Proceedings of the 19th Network and Distributed System Security Symposium
San Diego, CA, February 2012 (Acceptance Rate: **18%**)

NDSS '12

Systematic Detection of Capability Leaks in Stock Android Smartphones

Michael Grace, Yajin Zhou, **Zhi Wang**, Xuxian Jiang

Proceedings of the 19th Network and Distributed System Security Symposium
San Diego, CA, February 2012 (Acceptance Rate: **18%**)

CCS '11

Process Out-Grafting: An Efficient 'Out-of-VM' Approach for Fine-Grained Process Execution Monitoring

Deepa Srinivasan, **Zhi Wang**, Xuxian Jiang, Dongyan Xu

Proceedings of the 18th ACM Conference on Computer and Communications Security
Chicago, IL, October 2011 (Acceptance Rate: **14%**)

TIFS

(Journal)

Comprehensive and Efficient Protection of Kernel Control Data

Jinku Li, **Zhi Wang**, Tyler Bletsch, Deepa Srinivasan, Michael Grace, Xuxian Jiang

IEEE Transactions on Information Forensics and Security, 6(2), June 2011

IEEE S&P '10

HyperSafe: A Lightweight Approach to Provide Lifetime Hypervisor Control-Flow Integrity

Zhi Wang, Xuxian Jiang

Proceedings of the 31st IEEE Symposium on Security & Privacy
Oakland, CA, May 2010 (Acceptance Rate: **11%**)

Media Coverage: [Slashdot](#), [iNews](#), [Zdnet UK](#), [Computer World UK](#), [TechWorld](#), [Network World](#), [PC World](#), [Reuters](#), [Dark Reading](#), [ACM TechNews](#), [Threatpost](#), [Government Technology](#), [NSF News From the Field](#), [Science Daily](#)...

EuroSys '10

Defeating Return-Oriented Rootkits with 'Return-less' Kernels

Jinku Li*, **Zhi Wang***, Xuxian Jiang, Mike Grace, Sina Bahram

Proceedings of the 5th ACM SIGOPS/EuroSys European Conference on Computer Systems

France, April 2010 (Acceptance Rate: **19%**) [*alphabetical order]

CCS '10 **HyperSentry: Enabling Stealthy In-context Measurement of Hypervisor Integrity**
Ahmed M. Azab, Peng Ning, **Zhi Wang**, Xuxian Jiang, Xiaolan Zhang, Nathan C. Skalsky
Proceedings of the 17th ACM Conference on Computer and Communications Security
Chicago, IL, Oct 2010 (Acceptance Rate: **17%**)

SRDS '10 **DKSM: Subverting Virtual Machine Introspection for Fun and Profit**
Sina Bahram, Xuxian Jiang, **Zhi Wang**, Mike Grace, Jinku Li, Deepa Srinivasan, Junghwan Rhee, Dongyan Xu
Proceedings of the 29th IEEE International Symposium on Reliable Distributed Systems
New Delhi, India, October 2010 (Acceptance Rate: **23%**)

SecureComm '10 **Transparent Protection of Commodity OS Kernels using Hardware Virtualization**
Michael Grace, **Zhi Wang**, Deepa Srinivasan, Jinku Li, Xuxian Jiang, Zhengkai Liang, Siarhei Liakh
Proceedings of the 6th International Conference on Security and Privacy in Communication Networks
Singapore, September 2010 (Acceptance Rate: **25%**)

CCS '09 **Countering Kernel Rootkits with Lightweight Hook Protection**
Zhi Wang, Xuxian Jiang, Weidong Cui, Peng Ning
Proceedings of the 16th ACM Conference on Computer and Communications Security
Chicago, IL, November 2009 (Acceptance Rate: **18%**)

Media Coverage: [Linux Magazine](#), [Slashdot](#), [The Register](#), [Schneier on Security](#), [IEEE Computing Now](#), [The Inquirer](#), [Ars Technica](#), [ACM TechNews](#), [Dark Reading](#)...

ESORICS '09 **ReFormat: Automatic Reverse Engineering of Encrypted Messages**
Zhi Wang, Xuxian Jiang, Weidong Cui, Xinyuan Wang, Mike Grace
Proceedings of the 14th European Symposium on Research in Computer Security
Saint Malo, France, September 2009 (Acceptance Rate: **19%**)

RAID '08 **Countering Persistent Kernel Rootkits Through Systematic Hook Discovery**
Zhi Wang, Xuxian Jiang, Weidong Cui, Xinyuan Wang
Proceedings of the 11th International Symposium on Recent Advances in Intrusion Detection
Boston, MA, September 2008 (Acceptance Rate: **25%**)

➡ Honors and Awards

National Science Foundation Faculty Early Career Development (CAREER) Award (2015)

FSU First Year Assistant Professor Award (2013)

AT&T Best Applied Security Paper Award finalist (2010)

Intel Division Recognition Award, Intel (2005)

➡ Funding

National Science Foundation(NSF), "CICI:RSARC: DICE - Data Insurance in the Cluster Environment"

Role: PI, with three Co-PIs, Duration: 08/2017-08/2020, Total amount: \$590,317 (recommended for funding)

National Science Foundation(NSF), "CAREER: Towards Trustworthy Operating Systems"

Role: PI, Duration: 09/2015-09/2020, Total amount: \$499,672

Baidu X-lab US, "Adaptive Android Kernel Live Patching"

Role: PI, Duration: 01/2017-12/2017, Total amount: \$50,000

FSU, "FSU First Year Assistant Professor Award"

Role: PI, Duration: 05/2013-08/2013, Total amount: \$20,000

➡ Teaching and Advising

Courses at Florida State University:

CNT4406/CNT5412: Network Security (graduate/undergraduate)

CIS5370: Computer Security (graduate)
COP4610/CGS5765: Introduction to Operating Systems (undergraduate, core course)
CDA3101: Computer Organization II (undergraduate, core course)

Student Advising:

PhD Advisees

Yue Chen, PhD, 2013 - Current
Mustakimur Rahman Khandaker, PhD, 2015 - Current, FSU
Abu Naser, PhD, 2016 - Current, FSU
Wenqing Liu, PhD, 2016 - Current, FSU
Xiaoguang Wang, PhD, 2013 - 2015 (visiting, Xi'an Jiaotong University)

M.S Advisees

Clark Wood, M.S, 2015, First employer: MIT Lincoln Lab
Andre King, M.S, 2015, First employer: MIT Lincoln Lab
Angela Gibbens, M.S, 2017, Current
Ian Michaels, M.S, 2017, Current
Michael Borsellino, M.S, 2017, Current

➡Professional Services

Organizing Member

Student travel grant co-chair, ACM Conference on Computer and Communications Security (ACM CCS '17)
Editorial Board, International Journal of Cybersecurity Science and Technology

Program Committee Member

IEEE Conference on Communications and Network Security (IEEE CNS '17)
ACM Conference on Computer and Communications Security (ACM CCS '17)
ACM Conference on Computer and Communications Security (ACM CCS '16)
ACM Conference on Computer and Communications Security (ACM CCS '15)
Hardware and Architectural Support for Security and Privacy (ISCA HASP '12, '13, '14, '15, '16, '17)
The 15th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT '14)
International Workshop on Trustworthy Embedded Devices (TrustED '14)
The Third International Workshop on Security in Cloud Computing (ASIACCS-SCC '13, '14)
The 32nd IEEE International Performance, Computing, and Communication Conference (IPCCC '13)
1st International Workshop on Security on Security in Embedded Systems and Smartphones (AsiaCCS-SESP '13)
International Conference on Privacy and Security in Mobile Systems (PRISMS '13)
7th ACM Workshop on Scalable Trusted Computing (ACM STC '12)
2012 Military Communications Conference (MILCOM '12)
3rd IEEE International Workshop on Data Security and Privacy in wireless Networks (D-SPAN '12)
3rd Workshop on Security and Privacy in Cloud Computing (ICDCS-SPCC '12)

Reviewer for Journals

ACM Transactions on Information and Systems Security (TISSEC)
IEEE Transactions on Information Forensics & Security (TIFS)
IEEE Transactions on Dependable and Security Computing (TDSC)
IEEE Transactions on Mobile Computing (TMC)
IEEE Transactions on Networking (ToN)
IEEE Transactions on Cloud Computing (TCCSI)
IEEE Transactions on Storage (TOS)
International Journal of Security and Networks (IJSN)
The Computer Journal (Computer Journal)

Journal of Systems and Software (JSS)

Grant Reviewer National Science Foundation, CNS and EPSCoR, 2013, 2014, 2017

➡ Services at FSU

University Panelist, FSU CAREER Workshop (2016)

Judge, Three-minute thesis (Spring 2014, Fall 2014, Spring 2015)

Department Admission and aid committee, Graduate curriculum committee, PhD portfolio and qualification committee, Academic honor policy hearing panel, Faculty evaluation committee, Faculty recruiting committee, CS Expo organizing committee

➡ Other Resources

Open source xv6 teaching operating system for the ARM architecture (based on the MIT xv6 for x86):

<https://github.com/syssecfsu/xv6-rpi>