

Zhenyu Ning

PH.D. IN COMPUTER SCIENCE

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Research Interest

My Research interests are in different areas of security and privacy, including system security, mobile security, IoT security, transportation security, trusted execution environments, hardware-assisted security, transparent malware analysis, etc.

Education

Wayne State University

PH.D. IN COMPUTER SCIENCE

MI, USA

Aug. 2015 - Apr. 2020

Tongji University

M.S. IN COMPUTER SCIENCE

Shanghai, China

Aug. 2008 - Apr. 2011

Tongji University

B.S. IN COMPUTER SCIENCE

Shanghai, China

Aug. 2004 - Jun. 2008

Employment History

Research Assistant Professor

SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

Shenzhen, Guangdong, China

Jun. 2020 - present

Graduate Research or Teaching Assistant

WAYNE STATE UNIVERSITY

MI, USA

Aug. 2015 - Apr. 2020

Senior Software Engineer

BOLOME ELECTRONIC COMMERCE

Shanghai, China

May 2015 - Jul. 2015

Senior Software Engineer

CHINA UNIONPAY

Shanghai, China

Sep. 2012 - Apr. 2015

Assistant Software Engineer

HUAWEI TECHNOLOGIES

Shanghai, China

Apr. 2011 - Sep. 2012

Publications

* indicates these authors contribute equally to the paper.

[ESORICS'20 (CCF B Conference)] HART: Hardware-assisted Kernel Module Tracing on Arm

YUNLAN DU*, ZHENYU NING*, JUN XU, ZILONG WANG, YUEH-HSUN LIN, FENGWEI ZHANG, XINYU XING, AND BING MAO

In Proceedings of the 25th European Symposium on Research in Computer Security, United Kingdom, September, 2020.

[DSN'20 (CCF B Conference)] KShot: Live Kernel Patching with SMM and SGX

LEI ZHOU, FENGWEI ZHANG, JINGHUI LIAO, ZHENYU NING, JIDONG XIAO, KEVIN LEACH, WESTLEY WEIMER, AND GUOJUN WANG

In Proceedings of the 50th Annual IEEE/IFIP International Conference on Dependable Systems and Networks, Spain, June, 2020
(Runner-up Best Paper Award, 3 out of 291 submissions).

[JCDR'19] (CCF A Chinese Journal) A Study of Using TEE on Edge Computing

ZHENYU NING, FENGWEI ZHANG, AND WEISONG SHI

In Journal of Computer Research and Development, Vol.56, No.7, pp.1441-1453, 2019).

[DIMVA'19 (CCF C Conference)] Understanding the Security of Traffic Signal Infrastructure

ZHENYU NING, FENGWEI ZHANG, AND STEPHEN REMIAS

In Proceedings of the 16th Conference on Detection of Intrusions and Malware & Vulnerability Assessment, Gothenburg, Sweden, 2019.

[S&P'19 (CCF A Conference)] Understanding the Security of ARM Debugging Features

ZHENYU NING AND FENGWEI ZHANG

In Proceedings of the 40th IEEE Symposium on Security & Privacy, San Francisco, California, May, 2019.

[TIFS'18 (CCF A Journal, JCR Q1, CAS JCR Q1)] Hardware-assisted Transparent Tracing and Debugging on ARM

ZHENYU NING AND FENGWEI ZHANG

In IEEE Transactions on Information Forensics & Security, Vol.14, No.6, pp.1595-1609, 2018.

[EdgeSP'18] Preliminary Study of Trusted Execution Environments on Heterogeneous Edge Platforms

ZHENYU NING, JINGHUI LIAO, FENGWEI ZHANG, AND WEISONG SHI

In Proceedings of the 1st ACM/IEEE Workshop on Security and Privacy in Edge Computing, in conjunction with the 3rd ACM/IEEE Symposium on Edge Computing (SEC'18), Bellevue, Washington, October, 2018.

[DSN'18 (CCF B Conference)] DexLego: Reassembleable Bytecode Extraction for Aiding Static Analysis

ZHENYU NING AND FENGWEI ZHANG

In Proceedings of the 48th IEEE/IFIP International Conference on Dependable Systems and Networks, Luxembourg, June, 2018.

[Security'17 (CCF A Conference)] Ninja: Towards Transparent Tracing and Debugging on ARM

ZHENYU NING AND FENGWEI ZHANG

In Proceedings of the 26th USENIX Security Symposium, Vancouver, BC, Canada, August, 2017.

[HASP'17] Position Paper: Challenges Towards Securing Hardware-assisted Execution Environments

ZHENYU NING, FENGWEI ZHANG, WEISONG SHI, AND LARRY SHI

In Proceedings of the Hardware and Architectural Support for Security and Privacy, In conjunction with the 44th International Symposium on Computer Architecture (ISCA), Toronto, ON, Canada, June, 2017.

Research Grants

A Trusted Execution Environment Based on RISC-V Architecture

NATIONAL NATURAL SCIENCE FOUNDATION OF CHINA, NO.62102175

2022.01-2024.12, 240,000 RMB, Principal Investigator

Research on Secure EL2 of Arm Cloud Platforms

ANT GROUP

2021.03-2022.03, 520,000 RMB, Principal Investigator

Talks

[CRVF'19] SecLabel: Enhancing RISC-V Platform Security with Labelled Architecture

ZHENYU NING, YINQIAN ZHANG, AND FENGWEI ZHANG

In China RISC-V Forum, Shenzhen, China, November, 2019.

[MOSEC'19] Nailgun: Breaking the Privilege Isolation on ARM

ZHENYU NING AND FENGWEI ZHANG

In Mobile Security Conference, Shanghai, China, May, 2019.

[DEFCON China'18] Transparent Malware Debugging on x86 and ARM

ZHENYU NING AND FENGWEI ZHANG

In DEFCON China, Beijing, China, May, 2018.

Posters

Poster: SecLabel: Enhancing RISC-V Platform Security with Labelled Architecture

ZHENYU NING, YINQIAN ZHANG, AND FENGWEI ZHANG

In China RISC-V Forum (CRVF), Shenzhen, China, November, 2019.

Poster: Enhancing ARM Platform Security with Hardware Tags

ZHENYU NING AND FENGWEI ZHANG

In the 40th IEEE Symposium on Security & Privacy, San Francisco, California, May, 2019.

Poster: Revealing True Behavior via Instruction-level Extraction and Reassembling on Android

ZHENYU NING AND FENGWEI ZHANG

In the IEEE Southeastern Michigan 2016 Spring Conference, Livonia, MI, April, 2016.

Teaching Experience

CSC 4111 Laboratory for Software Engineering, *Instructor*

DEPARTMENT OF COMPUTER SCIENCE, WAYNE STATE UNIVERSITY, FALL 2017.

CSC 4110 Software Engineering, *Teaching Assistant*

DEPARTMENT OF COMPUTER SCIENCE, WAYNE STATE UNIVERSITY, FALL 2017.

Professional Services

Program Committee

[CCSW]: ACM Cloud Computing Security Workshop, 2020.

Artifact Evaluation Committee

[USENIX-Security]: USENIX Security Symposium, 2021

[ACSAC]: Annual Computer Security Applications Conference, 2019, 2020

External Reviewer

[CCS]: ACM Conference on Computer and Communications Security, 2017, 2018, 2019

[ACSAC]: Annual Computer Security Applications Conference, 2017, 2018, 2019

[EuroSec]: European Workshop on Systems Security, 2018, 2019

Reviewer

[TDSC]: IEEE Transactions on Dependable and Secure Computing, 2021

[Computer & Security]: Elsevier Computer & Security, 2020, 2021

[TMC]: IEEE Transactions on Mobile Computing, 2020

[LOCS]: IEEE Letters of the Computer Society, 2018

Awards

2019 **Faculty Competitive for Graduate Research Assistantships Award**, Wayne State University

2019 **Student Travel Grant**, IEEE S&P

2018 **Student Travel Grant**, IEEE/IFIP DSN