

# Zhongjie Wang

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## EDUCATION

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**University of California, Riverside**, CA, United States

Ph.D. student in Computer Science, June 2021 - GPA 3.95/4.00

- Research Area: Network Security, Internet Measurement, Program Analysis, Symbolic Execution
- Advisor: Zhiyun Qian and Srikanth V. Krishnamurthy

**Peking University**, Beijing, China

M. Sc. in Computer Architecture, July 2012

- Research Area: P2P Network, Search Engine & Recommendation System, Network Security

**Beijing University of Posts and Telecommunications**, Beijing, China

B. Eng. in Information Security, July 2009

- Member of Innovation Lab in Information Engineering school, which consists of top 5% students

## WORKING EXPERIENCE

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*June 2022 – now*, **NVIDIA**, Santa Clara, CA, USA

Senior Software Engineer at Autonomous Vehicle Department

- Designing and developing high-performance network stack for Automotive Drive OS

*June 2021 – June 2022*, **Baidu USA**, Sunnyvale, CA, USA

Senior Security Researcher at Baidu Security X-Lab

- Automated bug detection in ARM TrustZone Trusted Applications with symbolic execution
- Discovered multiple security vulnerabilities in Samsung mobile trusted applications (CVE-2022-33716, CVE-2022-33717)

*June 2019 – June 2020*, **Samsung Research America**, Mountain View, CA, USA

Research Intern at KNOX Security Team

- Exploring statefulness of Trusted Applications (TAs) and its control flow dependence with Symbolic Execution technique
- Automated bug finding for Trusted Applications

*June 2018 – Sept 2018*, **International Computer Science Institute (ICSI)**, Berkeley, CA, USA

Research Intern at Networking and Security Group

- Offloading network protocol identification from Bro to programmable NIC. Using smart NIC to perform signature-based protocol identification, then informing Bro of the identification results
- Modifying Bro source code to conduct some proof-of-concept measurement

*July 2012 – May 2014*, **Netease, Inc.**, Guangzhou, China

Senior Software Development Engineer in Test at Online Game Department

- Developed automatic source code analysis platform, which performs static code analysis on multiple projects concurrently and automatically
- Developed real-time code coverage testing tool, which traces the code execution of both server-side and client-side, then presents the executions of code lines in real time
- Designed and conducted automatic tests and stress tests for MMORPG (Massively Multiplayer Online Role Playing Game) with 10000+ concurrent players

July 2011 – Aug 2011, **Morgan Stanley**, Shanghai, China

Technology & Data Intern at Institutional Security Group Technology

- Developed a backend module for equity trading system, which executes post-trade position verification using finite state machines

Nov 2008 – May 2009, **Microsoft Research Asia**, Beijing, China

Research Intern at Machine Learning Group

- Devised a distributed key-value retrieval algorithm using MapReduce and B+ Tree
- Designed and implemented a ranking algorithm based on distributed random walk using MapReduce on a cluster of hundreds of machines
- Devised algorithms to measure similarity between search queries

## PUBLICATIONS

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1. **Zhongjie Wang**, Shitong Zhu, Keyu Man, Pengxiong Zhu, Yu Hao, Zhiyun Qian, Srikanth V. Krishnamurthy, Tom La Porta, Michael J. De Lucia, “Themis: Ambiguity-Aware Network Intrusion Detection based on Symbolic Model Comparison”, **ACM CCS 2021**, Virtual Event, Korea, 2021
2. **Zhongjie Wang**, Shitong Zhu, Yue Cao, Zhiyun Qian, Chengyu Song, Srikanth V. Krishnamurthy, Tracy Braun, Kevin Chan, “SymTCP: Eluding Stateful Deep Packet Inspection with Automated Discrepancy Discovery”, **NDSS 2020**, San Diego, USA, 2020
3. **Zhongjie Wang**, Yue Cao, Zhiyun Qian, Chengyu Song, Srikanth Krishnamurthy, “Your State is Not Mine: A Closer Look at Evading Stateful Internet Censorship”, **IMC’17**, London, UK, 2017
4. Alan Quach\*, **Zhongjie Wang\***, Zhiyun Qian, “Investigation of the 2016 Linux TCP Stack Vulnerability at Scale”, **SIGMETRICS’17**, Urbana-Champaign, Illinois, USA, 2017 (\* **co-first author**)
5. Keyu Man, Zhiyun Qian, **Zhongjie Wang**, Xiaofeng Zheng, Youjun Huang, Haixin Duan, “DNS Cache Poisoning Attack Reloaded: Revolutions With Side Channels”, **ACM CCS 2020 (Distinguished Paper Award)**, Virtual Event, USA, 2020
6. Yue Cao, Zhiyun Qian, **Zhongjie Wang**, Tuan Dao, Srikanth Krishnamurthy, Lisa M. Marvel, “Off-Path TCP Exploits: Global Rate Limit Considered Dangerous”, 25th **USENIX Security Symposium**, Austin, Texas, USA, 2016
7. Yue Cao, **Zhongjie Wang**, Zhiyun Qian, Chengyu Song, Srikanth Krishnamurthy, Paul Yu, “Principled Unearthing of TCP Side Channel Vulnerabilities”, **ACM CCS 2019**, London, UK, 2019
8. Pengxiong Zhu, Keyu Man, **Zhongjie Wang**, Zhiyun Qian, Roya Ensafi, J. Alex Halderman, Haixin Duan, “Characterizing Transnational Internet Performance and the Great Bottleneck of China”, **SIGMETRICS’20**, Boston, Massachusetts, USA, 2020
9. Shitong Zhu, Umar Iqbal, **Zhongjie Wang**, Zhiyun Qian, Zubair Shafiq, Weiteng Chen, “ShadowBlock: A Lightweight and Stealthy Adblocking Browser”, The Web Conference (formerly **WWW** conference), San Francisco, USA, 2019
10. Shitong Zhu, **Zhongjie Wang**, Xun Chen, Shasha Li, Keyu Man, Umar Iqbal, Zhiyun Qian, Kevin Chan, Srikanth V. Krishnamurthy, Zubair Shafiq, Yu Hao, Guoren Li, Zheng Zhang, Xiaochen Zou, “Eluding ML-based Adblockers With Actionable Adversarial Examples”, **ACSAC 2021**, Virtual Conference, 2021
11. Shitong Zhu, Shasha Li, **Zhongjie Wang**, Xun Chen, Zhiyun Qian, Srikanth V. Krishnamurthy, Kevin S. Chan, Ananthram Swami, “You Do (Not) Belong Here: Detecting DPI Evasion Attacks with Context Learning”, The 16th International Conference on emerging Networking EXperiments and Technologies (**CoNEXT’20**), Barcelona, Spain, 2020

## AWARDS AND HONORS

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<b>Morgan Stanley Code Storm</b> , Advanced to Final (top 30 in China)	2011
<b>Google Summer of Code</b> , Selected Student Contract Developer	2010 & 2011
<b>Tencent Campus Star Development Competition</b> , Winning Prize	2010
<b>Microsoft Research Asia “Stars of Tomorrow”</b> , Award of Excellence	2009
<b>Microsoft Imagine Cup</b> , Second Place Worldwide in Embedded Development	2008
<b>Beijing Univ. of Posts and Telecom. Sci-Tech Innovation Award</b> , First Prize	2007 & 2008
<b>National Undergraduate Electronic Design Contest</b> , Second Prize of Beijing Region	2007

## TECHNICAL SKILLS

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**Language** English (Fluent), Mandarin (Native)

**Programming** C/C++, Python, Rust, Java, Javascript, Matlab, Assembly, Lua

## REFERENCE

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**Dr. Zhiyun Qian**

Associate Professor

Computer Science and Engineering

University of California, Riverside

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**Dr. Srikanth V. Krishnamurthy**

Professor

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Email: krish@cs.ucr.edu