# ZIQIAO ZHOU

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## PROFESSIONAL PROFILE

Computer & Network security, and Program analysis & Formal methods

## EDUCATION

*The University of North Carolina, Chapel Hill, NC, USA* Aug. 2014 - July. 2020
Ph.D. and M.S. in Computer Science advised by Michael Reiter
Thesis: Evaluating Information Leakage by Quantitative and Interpretable Measurements

*Shanghai Jiao Tong University, Shanghai, China* Sep. 2010 - Jun. 2014
B.Eng. in Information Security Engineering

## EXPERIENCE

**Google, Inc.** Aug. 2020 - present
*Software Engineer* *Sunnyvale, CA*

- Improving production security infrastructure.

**University of North Carolina** Aug. 2014 - present
*Research assistant advised by Michael Reiter* *Chapel Hill, NC, USA*

- A new framework to model and interpret information leakage in actual hardware implementation (e.g., RISCV-BOOM) through formal methods.
- A scalable measurement to quantify information leakage in software using symbolic execution and model counting.
- "Copy-On-Access" and Cacheability Management mechanisms to defend against cache-based side channel leakage; And Implemented them into CacheBar as a memory subsystem.

**Google Inc.** May 2019 - Aug. 2019
*Software engineering intern advised by Michael Vrable* *Sunnyvale, CA, USA*

- Machine's booting security with multi-version softwares.

**NEC Laboratories America Inc.** May 2018 - Aug. 2018
*Research intern advised by Junghwan Rhee* *Princeton, NJ, USA*

- A protocol-independent traffic anomaly detection in OT system.

**Shanghai Jiao Tong University** Jun. 2012 - Jun. 2014
*Undergraduate research assistant advised by Pin Yi* *Shanghai, China*

- A context-aware localization using multiple wireless anchors.

## SELECTED PUBLICATIONS

- **Z. Zhou** and M. K. Reiter. Interpretable Noninterference Measurement and its Application to Processor Designs. *Under submission.*

- **Z. Zhou**, Z. Qian, M. K. Reiter, and Y. Zhang. Static evaluation of noninterference using approximate model counting. *In Proceedings of the 39th IEEE Symposium on Security and Privacy*, May 2018 (acceptance rate 11.5% = 63/549) .
- **Z. Zhou**, M. K. Reiter, and Y. Zhang. A software approach to defeating side channels in last-level caches. *In Proceedings of the 23rd ACM Conference on Computer and Communications Security*, October 2016 (acceptance rate 16.5% = 137/831).
- Q. Zhang, Y. Yao, T. Zhu, **Z. Zhou**, W. Xu, P. Yi, S. Xiao Dynamic Enhanced Field Division: An Advanced Localizing and Tracking Middleware. In *In the ACM Transactions on Sensor Networks*, December 2018.
- Q. Zhang and W. Xu and Z. Huang and **Z. Zhou** and P. Yi and T. Zhu and S. Xiao Context-Centric Target Localization with Optimal Anchor Deployments. In *In Proceedings of the 5th International Green Computing Conference*, November 2014(acceptance rate 20.5% = 39/190).
- Q. Zhang, **Z. Zhou**, W. Xu, J. Qi, C. Guo, P. Yi, T. Zhu, and S. Xiao. Fingerprint-free tracking with dynamic enhanced field division. *In Proceedings of the 34th IEEE Conference on Computer Communications*, April 2015(acceptance rate 20.5% = 39/190).
- **Z. Zhou**, M. Xie, T. Zhu, W. Xu, P. Yi, Z. Huang, Q. Zhang, and S. Xiao. EEP2P: An energy-efficient and economy-efficient P2P network protocol. In *In Proceedings of the 5th International Green Computing Conference*, November 2014(acceptance rate 19.3% = 316/1,640).

## POSTERS & TALK

- **Interpretabl Noninterference Measurement and its Application to Processor Designs.** Talk, *The 2nd Annual Workshop of the Side Channel Academic Programme*, Online, Sep., 2020.
- **Static evaluation of noninterference in the RISCV CPU using approximate model counting.** Poster, *The 1st Annual Workshop of the Side Channel Academic Programme*, Hillsboro, OR, USA, Jun., 2019.
- **Static evaluation of noninterference using approximate model counting.** Talk, *IEEE Symposium on Security and Privacy (S&P)*, San Francisco, CA, USA, May, 2018.
- **Software Approach to Defeating Side Channels in Last-Level Caches.** Talk, *ACM Conference on Computer and Communications Security (CCS)*, Vienna, Austria, Oct., 2016.
- **CacheBar : A Software Approach to Defeating Side Channels in Last-Level Caches.** Poster, *Cloud Security Horizons (CSH) Summit*, New York, USA, Mar., 2016.

## HONORS & AWARDS

- **Shanghai Jiao Tong University Scholarship**, 2013.
- **Tencent innovation scholarship**, 2012.
- **Shanghai Jiao Tong University Scholarship**, 2011.
- **First Prize in Student Computer Robotics Competition, Hubei, China**, 2008.

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