Zhiyi Zhang

PHD CANDIDATE · UCLA

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Summary

Fifth-year PhD candidate in computer science at UCLA. Experience specializing in System Security in Network Protocols, Data Engineering, Internet of Things, and Information-centric Network. Interested in devising a better problem-solving method for challenging tasks, and learning new technologies and tools.

Education

UCLA   *Los Angeles, CA, U.S.*

PH.D. IN COMPUTER SCIENCE   *Sep. 2016 - Exp. Jun. 2021*

- Supervised by Professor Lixia Zhang in the Internet Research Laboratory.
- Research fields: Network Security, Internet of Things, Information-centric Network
- Teaching Assistant of Graduate Course: Internet Architecture and Protocols
- Teaching Assistant of Undergraduate Courses: Software Construction, Computer Network

Nankai Univ.   *Tianjin, China*

BACHELOR OF ENGINEERING IN SOFTWARE ENGINEERING   *Sep. 2012 - Jun. 2016*

- Graduated with distinction: Outstanding Graduate Student Award in 2016
- The National Scholarship of China in 2015
- Earned GPA of 3.8/4.0

Experience

Internet Research Laboratory, UCLA   *Los Angeles, CA, U.S.*

DOCTORAL RESEARCHER   *Sep. 2016 - PRESENT*

- Project lead of NDN-Lite, a NDN-based IoT Framework which enables user's local control of smart home systems.
- Project lead of El PASSO, a privacy-preserving and asynchronous **Single Sign-on** protocol with randomizable signature and zero-knowledge proof.
- A Personally Identifiable Information(PII) sharing system with **reliable leaking source identification**.
- Project lead for the design and development of a blockchain-based distributed ledger system to provide security solutions for mesh rooftop solar networking and power grid networking.
- Designed and implemented a NDN-based **DDoS defense** system to mitigate DDoS attacks.
- Research and Development for **Access Control Scheme** and **Certificate Management** over NDN.

Transport Security team, Facebook   *(Remote) Menlo Park, CA, U.S.*

DEVELOPMENT INTERNSHIP   *Jun. 2020 - Sep. 2020*

- Implemented the first-ever **TLS Batch Signature** in Fizz library for TLS 1.3 to boost TLS performance.
- Finishing a set of benchmark tools in Facebook Fizz library for **TLS 1.3 benchmarking**.
- Adding new features including Merkle Tree and NSS Key Log into Facebook Fizz library.

Infrastructure Service (AIS) team, Alibaba   *Bellevue, WA, U.S.*

RESEARCH&DEVELOPMENT INTERNSHIP   *Jun. 2017 - Sep. 2017*

- Building **high-performance user-mode network** stack by adjusting **QUIC** to work with kernel bypass **(DPDK)**
- Evaluation of QUIC+DPDK's performance compared with TCP+TLS+HTTP/2 and DPDK+TCP+TLS+HTTP/2
- Explored new congestion control protocol (BBR) in data center network scenario

Honors & Awards

2020	**Spark Univ. Hackathon Filecoin 2nd Award out of 260 teams,** Amount 1k£, Filecoin Pricing Mechanism	*Worldwide*
2019	**UCLA Graduate Division Award,** Amount 15k$, NONRES TUITION GRANT for 2019-2020 academic year.	*Los Aneles, U.S.*
2018	**ACM ICN 2018 Best Poster Award,** NDNoT: A Framework for Named Data Network of Things	*Boston, U.S.*
2016	**Outstanding Graduate Student Award,** 4 out of 99 in Software Engineering Department, Nankai University	*Tianjin, China*
2015	**The National Scholarship of China,** 0.2% undergraduates nationwide, Chinese Department of Education	*Tianjin, China*
2015	**UCLA CSST Scholarship,** Amount 7k$, Cross-Disciplinary Scholars in Science and Technology, UCLA	*Los Angeles, U.S.*
2015	**Honorable Mention Award,** Mathematical Contest in Modeling (MCM)	*Tianjin, China*

Skills / Strengths

Programming languages	C++; C; Python; WebAssembly
Professional	Network Security; Internet of Things; Information-centric Network;