

# 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

#### PH.D. IN COMPUTER SCIENCE

Los Angeles, CA, U.S.A

Sep. 2016 - Exp. Jun. 2021

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

### Nankai Univ.

#### BACHELOR OF ENGINEERING IN SOFTWARE ENGINEERING

Tianjin, China

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.A

#### 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 EI 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.A

#### 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.A

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

## Skills / Strengths

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**Programming languages** C++; C; Python; WebAssembly

**Professional** Network Security; Internet of Things; Information-centric Network;