Jia Zhang

Present Appointment	Research Assistant Professor
	Zhongguancun Laboratory
	Haidian, Beijing, China

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Research Interests

Low-latency Network, Routing Security, AI-driven Network

Education

Tsinghua University | Beijing, China
Department of Computer Science and Technology
◇ **Ph.D.**, Computer Science, August 2023
  – *Dissertations:* "Transport Layer Optimization for Mobile Web Services"
  – *Advisor:* Prof. Mingwei Xu
  – *Thesis Committee:* Prof. Jiahai Yang (chair), Prof. Ying Liu,
    Prof. Wendong Wang (Beijing University of Posts and Telecommunications),
    Prof. Shuhao Li (Zhongguancun Laboratory)

Tsinghua University | Beijing, China
Department of Electronic Engineering
◇ **B.Eng.**, Electronic Engineering, July 2018
  – *Second Bachelor's Degree:* Business Administration from School of Business and Management
  – *Dissertations:* "Implementation and Analysis of Congestion Control for the New Transport Protocol MPQUIC"
  – *Advisor:* Prof. Mingwei Xu

Professional Experience

Zhongguancun Laboratory | Beijing, China
Research Assistant Professor — Sep 2023 – Present

Tsinghua University | Beijing, China
Department of Computer Science and Technology
Research Assistant (Advisor: Prof. Mingwei Xu) — Sep 2018 – Aug 2023

Meituan | Beijing, China
Algorithm Strategy
Research Intern (Mentor: Mr. Xiaotian Li) — Sep 2021 – Jun 2023

Baidu | Beijing, China
BFE Team
Research Intern (Mentor: Mr. Sijie Yang) — Oct 2019 – Jun 2021

University of Surrey | Surrey, UK
5G/6G Innovation Centre
Research Assistant (Advisor: Prof. Ning Wang) — July – Sep, 2019

Tsinghua University | Beijing, China
Department of Electronic Engineering
Research Assistant (Advisor: Prof. Yongfeng Huang) — Sep 2016 – May 2017

SCHOLARLY PUBLICATIONS

All publications are sorted in a reverse chronological order, where the # indicates that I am the corresponding author.

Refereed Papers in Conference Proceedings

[C7] Shaorui Ren, **Jia Zhang**#, Enhuan Dong, Mingwei Xu, Yixuan Zhang, Jiahao Cao, Jianping Wu, "Undermining Delay-based QUIC Congestion Control: A Receiver-driven Attack via Crafted Host Delays," published in *IEEE International Conference on Network Protocol (ICNP'25)*.

[C6] Andong Chen, Yangyang Wang, **Jia Zhang**#, Mingwei Xu, "Right the Ship: Assessing the Legitimacy of Invalid Routes in RPKI," publised in *ACM Conference on Computer and Communications Security (CCS'2025)*.

[C5] Peng Qian, Ning Wang, Foh Chuan Heng, **Jia Zhang**, Carl Udora, Rahim Tafazolli, "Enabling eBPF-Based Packet Duplication for Robust Volumetric Video Streaming," publised in *IEEE International Symposium on Computers and Communications (IEEE ISCC'2024)*.

[C4] **Jia Zhang**, Haixuan Tong, Enhuan Dong, Xin Qian, Mingwei Xu, Xiaotian Li, Zili Meng, "Cold Start or Hot Start? Robust Slow Start in Congestion Control with A Priori Knowledge for Mobile Web Services," published in *The Web Conference (WWW '24)*.

[C3] **Jia Zhang**, Yixuan Zhang, Enhuan Dong, Yan Zhang, Shaorui Ren, Zili Meng, Mingwei Xu, Xiaotian Li, Zongzhi Hou, Zhicheng Yang, Xiaoming Fu, "Bridging the Gap between QoE and QoS in Congestion Control: A Large-scale Mobile Web Service Perspective," published in *USENIX Annual Technical Conference (ATC '23)*.

[C2] **Jia Zhang**, Enhuan Dong, Zili Meng, Yuan Yang, Mingwei Xu, Sijie Yang, Miao Zhang, Yang Yue, "WiseTrans: Adaptive Transport Protocol Selection for Mobile Web Service," published in *The Web Conference (WWW '21)*.

[C1] Fangzhao Wu, **Jia Zhang**, Zhigang Yuan, Sixing Wu, Yongfeng Huang, and Jun Yan, "Sentence-level sentiment classification with weak supervision," published in *ACM SIGIR Conference on Research and Development in Information Retrieval, (SIGIR'17)*

Refereed Journal Articles

[J2] **Jia Zhang**, Shaorui Ren, Enhuan Dong, Zili Meng, Yuan Yang, Mingwei Xu, Sijie Yang, Miao Zhang, Yang Yue, "Reducing Mobile Web Latency Through Adaptively Selecting Transport Protocol," *IEEE/ACM Transactions on Networking*, vol. 31, no. 5, pp. 2162-2177, Oct. 2023.

[J1] Zili Meng, Yaning Guo, Yixin Shen, Jing Chen, Chao Zhou, Minhu Wang, **Jia Zhang**, Mingwei Xu, Chen Sun, Hongxin Hu, "Practically Deploying Heavyweight Adaptive Bitrate Algorithms With Teacher-Student Learning," *IEEE/ACM Transactions on Networking*, vol. 29, no. 2, pp. 723-736, Apr. 2021.

PATENT

[P2] Mingwei Xu, **Jia Zhang**, Enhuan Dong, Zili Meng, Yuan Yang. Adaptive Transport Protocol Selection Method and Device for Mobile Web Service. CN112583818, Chinese Patent. Granted: Dec 24, 2021.

[P1] Yangyang Wang, Andong Chen, **Jia Zhang**, Jiahao Cao, Mingwei Xu. Method and Device for BGP Route Origin Authentication Diagnosis Based on Feature Analysis. CN 118784362 A, Chinese Patent. Applied: Oct 15, 2024.

COMPETITIVE RESEARCH GRANTS

[G1] **PI.** Research on Decentralized Ultra-reliable and Faithful RPKI Routing Validation Architecture.   CNY 300,000
NSFC Young Scientists Fund (62502471)   Jan 2026 – Dec 2028

STANDARDS CONTRIBUTIONS

[S5] **Jia Zhang**, Yangyang Wang, Maria Matejka, and Mingwei Xu, "ASPA-based AS_PATH Verification for BGP Export," *Internet-Draft draft-zhang-sidrops-aspa-egress-03, Internet Engineering Task Force, July 2025. Work in Progress.*

STANDARDS CONTRIBUTIONS (CONTINUED)	[S4] **Jia Zhang**, Mingwei Xu, and Yangyang Wang, "Enhancing Route Origin Validation by Aggregating Validated ROA Payloads," *Internet-Draft draft-zhang-sidrops-vrp-aggregation-03, Internet Engineering Task Force, Aug 2025. Work in Progress.*
	[S3] Shuhe Wang, Mingwei Xu, Yangyang Wang, and **Jia Zhang**, "Requirements for Monitoring RPKI-Related Processes on Routers Using BMP," *Internet-Draft draft-wang-grow-bmp-rpki-mon-reqs-02, Internet Engineering Task Force, Oct 2025. Work in Progress.*
	[S2] **Jia Zhang**, Mingwei Xu, Nan Geng, Chongfeng Xie, and Yangyang Wang, "RPKI-based Validation with Prioritized Resource Data," *Internet-Draft draft-zhang-sidrops-prioritized-route-validation-00, Internet Engineering Task Force, Otc 2025. Work in Progress.*
	[S1] **Jia Zhang**, Shuhe Wang, Yangyang Wang, Mingwei Xu, Yu Fu, Wei Liang, Nan Geng, Jihua Zhou, Jing Gao, "Multi-source data provision system for RPKI route validation - general architecture," *Communications Industry Standards of the People's Republic of China, Application No. H-202412190600. Work in Progress.*

HONORS AND AWARDS	◇ Excellent League Member of Tsinghua University	2018
	◇ Zheng Geru Scholarship	2017
	◇ Hongqian Electronics Scholarship	2016

PROFESSIONAL SERVICES

Conference Technical Program Committee Membership
◇ IEEE/ACM International Symposium on Quality of Service (IWQoS). 2025, 2024.

◇ International Conference on Big Data Computing and Communications (BIGCOM). 2025

Reviewer for Journal Manuscript Submissions
◇ IEEE Transactions on Parallel and Distributed Systems (TPDS)

◇ IEEE/ACM Transactions on Networking (ToN)

◇ IEEE Network

External Reviewer for Conference Manuscript Submissions
USENIX NSDI, ACM Multimedia, ACM CoNEXT, ACM HotNets, IEEE ICDCS

Other Organizing Services
◇ Student volunteer, ACM SIGCOMM 2019.

TEACHING AND TUTORING ACTIVITIES

Teaching Assistant

◇ Computer Network Architecture, Tsinghua University	Fall, 2020

Student Tutoring

◇ Postgraduate Tutor, Zhongguancun Labotaroty	Fall, 2024 – Present
◇ Undergraduate Tutor, Tsinghua University	Fall, 2018 – Fall, 2020

MENTORSHIP

Students at Zhongguancun Laboratory
◇ Weihua Liu. Ph.D. student (2025 –).

◇ Jiayu Zheng. Ph.D. student (2025 –).

◇ Shaorui Ren. Ph.D. student (2023 –).

Students at Tsinghua University
◇ Yixuan Zhang. Ph.D. student (2020 –).

◇ Andong Chen. M.Eng. student (2022 – 2025). Now at PLA research institutes.

◇ Yan Zhang. Undergraduate student (2022 – 2024). Now M.Eng. student at Tsinghua University.

◇ Haixuan Tong. Undergraduate student (2022 – 2024). Now Ph.D. student at Tsinghua University.

INDUSTRIAL IMPACT	◇ **CERNET, China Telecom, and China Unicom** uses our RPKI data supplyment system *(CCS '25)*, for their route validation.

INDUSTRIAL IMPACT

◇ **CERNET, China Telecom, and China Unicom** uses our RPKI data supplyment system *(CCS '25)*, for their route validation.

◇ **Meituan** uses our congestion control selection mechanism, *Floo (ATC '23)*, for mobile Web service (Dianping App).

◇ **Baidu** uses our protocol selection mechanism between TCP and QUIC, *WiseTrans (WWW '21).*, for their video streaming service (Haokan Video).

REFERENCES

Prof. Mingwei Xu
Professor, *Dean of* Institute for Network Sciences and Cyberspace
Tsinghua University
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Prof. Ning Wang
Professor, School of Electrical, Electronic and Mechanical Engineering
University of Bristol
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Dr. Nan Geng
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gengnan@huawei.com