

Chaoyi Lu

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Education

2017 - Present: PhD candidate in Cyberspace Security

Tsinghua University, China Advisor: Prof. Jianping Wu
Research Interests: Network security, Internet measurement

2013 - 2017: B.Eng. in Information Security

Beijing University of Posts and Telecommunications, China

Publications

◇ 13 conference papers (8 published at top-tier venues) + 1 industrial standard + 1 patent

Conference Papers

- [1] **[EthiCS '22]** Y. Zhang, M. Liu, M. Zhang, **Chaoyi Lu**, H. Duan. *Ethics in Security Research: Visions, Reality, and Paths Forward*. To appear in the 1st International Workshop on Ethics in Computer Security. June 2022.
- [2] **[PAM '22]** F. Zhang, **Chaoyi Lu**, B. Liu, H. Duan, Y. Liu. *Measuring the Practical Effect of DNS Root Server Instances: A China-Wide Case Study*. In Proceedings of the 23rd Passive and Active Measurement Conference. March 2022.
- [3] **[CCS '21]** Y. Zhang, B. Liu, **Chaoyi Lu**, Z. Li, H. Duan, J. Li, Z. Zhang. *Rusted Anchors: A National Client-Side View of Hidden Root CAs in the Web PKI Ecosystem*. In Proceedings of the 28th ACM Conference on Computer and Communications Security, November 2021.
- [4] **[NDSS '21]** **Chaoyi Lu**, B. Liu, Y. Zhang, Z. Li, F. Zhang, H. Duan, Y. Liu, J. Q. Chen, J. Liang, Z. Zhang, S. Hao, M. Yang. *From WHOIS to WHOWAS: A Large-Scale Measurement Study of Domain Registration Privacy under the GDPR*. In Proceedings of the 28th Network and Distributed System Security Symposium, February 2021.
◇ Included by Cybercrime Digest of Cybercrime Program Office of the Council of Europe & CERT-SE's weekly letter
- [5] **[USENIX Sec '21]** K. Shen, C. Wang, X. Zheng, M. Guo, **Chaoyi Lu**, B. Liu, Y. Zhao, S. Hao, H. Duan, Q. Pan, M. Yang. *Weak Links in Authentication Chains: A Large-scale Analysis of Email Sender Spoofing Attacks*. In Proceedings of the 30th USENIX Security Symposium, August 2021.
- [6] **[CCS '20a]** M. Zhang, X. Zheng, K. Shen, Z. Kong, **Chaoyi Lu**, Y. Wang, H. Duan, S. Hao, B. Liu, M. Yang. *Talking with Familiar Strangers: An Empirical Study on HTTPS Context Confusion Attacks*. In Proceedings of the 27th ACM Conference on Computer and Communications Security, November 2020.
- [7] **[CCS '20b]** Y. Zhang, B. Liu, **Chaoyi Lu**, Z. Li, H. Duan, S. Hao, M. Liu, Y. Liu, D. Wang, Q. Li. *Lies in the Air: Characterizing Fake-base-station Spam Ecosystem in China*. In Proceedings of the 27th ACM Conference on Computer and Communications Security, November 2020.
- [8] **[USENIX Sec '20]** X. Zheng, **Chaoyi Lu**, J. Peng, Q. Yang, D. Zhou, B. Liu, K. Man, S. Hao, H. Duan, Z. Qian. *Poison Over Troubled Forwarders: A Cache Poisoning Attack Targeting DNS Forwarding Devices*. In Proceedings of the 29th USENIX Security Symposium, August 2020.
◇ Community & industrial conference: ICANN DNS Symposium 2021

- [9] **[IMC '19] Chaoyi Lu**, B. Liu, Z. Li, S. Hao, H. Duan, M. Zhang, C. Leng, Y. Liu, Z. Zhang, J. Wu. *An End-to-End, Large-Scale Measurement of DNS-over-Encryption: How Far Have We Come?*. In Proceedings of the 19th Internet Measurement Conference, October 2019.
- ◇ Recipient of IRTF Applied Networking Research Prize (ANRP) 2020
 - ◇ Distinguished Paper Award Nominee (3/39) & Community Contribution Award Nominee (2/39)
 - ◇ Community & industrial conferences: IETF 108 & DNS-OARC 31
- [10] **[EuroS&P '19]** B. Liu, Z. Li, P. Zong, **Chaoyi Lu**, H. Duan, Y. Liu, S. Alrwais, X. Wang, S. Hao, Y. Jia, Y. Zhang, K. Chen, Z. Zhang. *TraffickStop: Detecting and Measuring Illicit Traffic Monetization Through Large-scale DNS Analysis*. In Proceedings of the 4th IEEE European Symposium on Security and Privacy, June 2019.
- [11] **[USENIX Sec '18]** B. Liu, **Chaoyi Lu**, H. Duan, Y. Liu, Z. Li, S. Hao, M. Yang. *Who Is Answering My Queries: Understanding and Characterizing Interception of the DNS Resolution Path*. In Proceedings of the 27th USENIX Security Symposium, August 2018.
- ◇ Community & industrial conferences: ACM/IRTF ANRW '19 & DNS-OARC 30
- [12] **[DSN '18]** B. Liu, **Chaoyi Lu**, Z. Li, Y. Liu, H. Duan, S. Hao, Z. Zhang. *A Reexamination of Internationalized Domain Names: the Good, the Bad and the Ugly*. In Proceedings of the 48th IEEE/IFIP International Conference on Dependable Systems and Networks, June 2018.
- [13] **[FOCI '18]** M. Zhang, B. Liu, **Chaoyi Lu**, J. Zhang, S. Hao, H. Duan. *Measuring Privacy Threats in China-Wide Mobile Networks*. Accepted to the 8th USENIX Workshop on Free and Open Communications on the Internet, August 2018.

Industrial Standard

- [14] **Chaoyi Lu**, Y. Huang, J. Zhang, H. Duan, D. Ma, et al. *Domain Name System Encryption Communication Technical Requirements*. Industrial standard of telecommunication technologies of the P.R.C. (Announced May 2021, to be issued)

Patent

- [15] Y. Zhang, B. Liu, **Chaoyi Lu**, H. Duan, J. Li, W. Liu. *Methodology and Equipment of Network Accessing Security and Detection*. Patent of the P.R.C. (Filed November 2021, to be granted)

Awards

Academia

IRTF Applied Networking Research Prize (ANRP)	2020
ACM IMC Nominee of Distinguished Paper Award & Community Contribution Award	2019
IEEE/IFIP DSN Student Travel Grant	2018

Scholarships

1st-Class Scholarship of Tsinghua University for Graduate Students	2020 & 2021
Cyber Security Scholarship of China Internet Development Foundation	2016

Contest

1st Prize, 5th Competition of Next Generation Internet Technology Innovation	2019
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Services (External reviewers)

Conferences: NDSS '22 & '20, ICDCS '21, DSN '20, CCS '19, ESORICS '19, ICICS '19
 Journal: IEEE TNSM 2020
 Workshops: WPES '21, IoT S&P '18, RESEC '18