**Chaoyi Lu**

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**Education**

**2017 - 2022: PhD Tsinghua University, China**

Advisor: Prof. Jianping Wu

Dissertation: *On Measuring Security Technologies within the Domain Name System Hierarchy*

Research Interests: Network security, Internet measurement

**2013 - 2017: B.Eng. Beijing University of Posts and Telecommunications, China**

**Publications**

**◇ 14 conference papers (9 published at top-tier venues) + 1 industrial standard + 1 patent**

Conference Papers

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| [1] | **[USENIX Sec ’23]** X. Li, **Chaoyi Lu**, B. Liu, Q. Zhang, Z. Li, et al. ***The Maginot Line: Attacking the Boundary of DNS Caching Protection*.** To appear in Proceedings of the 32nd USENIX Security Symposium, Anaheim, CA, USA, August 2023. |
| [2] | **[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.  ◇ Recipient of Best Student Paper Award |
| [3] | **[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. |
| [4] | **[CCS ’21]** Y. Zhang, B. Liu, **Chaoyi Lu**, Z. Li, H. Duan, et al. ***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. |
| [5] | **[NDSS ’21] Chaoyi Lu**, B. Liu, Y. Zhang, Z. Li, F. Zhang, H. Duan, et al. ***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 (C-PROC) & CERT-SE’s weekly letter |
| [6] | **[USENIX Sec ’21]** K. Shen, C. Wang, X. Zheng, M. Guo, **Chaoyi Lu**, et al. ***Weak Links in Authentication Chains: A Large-scale Analysis of Email Sender Spoofing Attacks.*** In Proceedings of the 30th USENIX Security Symposium, August 2021. |
| [7] | **[CCS ’20a]** M. Zhang, X. Zheng, K. Shen, Z. Kong, **Chaoyi Lu**, et al. ***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. |
| [8] | **[CCS ’20b]** Y. Zhang, B. Liu, **Chaoyi Lu**, Z. Li, H. Duan, et al. ***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. |
| [9] | **[USENIX Sec ’20]** X. Zheng, **Chaoyi Lu**, J. Peng, Q. Yang, D. Zhou, et al. ***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 |
| [10] | **[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 |
| [11] | **[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. |
| [12] | **[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 |
| [13] | **[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. |
| [14] | **[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 & Patent

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| [15] | **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) |
| [16] | 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

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| Outstanding PhD Dissertation Award & PhD Graduate Award of Tsinghua University | 2022 |
| 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 & Others

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| Outstanding Graduate Award, Education Commission of Beijing Municipality | 2022 |
| 1st-Class Scholarship of Tsinghua University for Graduate Students | 2020 & 2021 |
| 1st Prize, 5th Competition of Next Generation Internet Technology Innovation | 2019 |
| Cyber Security Scholarship of China Internet Development Foundation | 2016 |

**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