

Shinan Liu

CS PH.D. STUDENT IN COMPUTER SCIENCE

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Education

The University of Chicago

Illinois, USA

PH.D. STUDENT IN COMPUTER SCIENCE

Sep. 2019 - PRESENT

- Advisor: Prof. Nick Feamster (ACM Fellow, MIT Tech Review 35 under 35)
- Google Scholar citations: 334; h-index: 6
- Defended my M.S. thesis and got my M.S. within Ph.D.

University of Electronic Science and Technology of China

Sichuan, P.R. China

B.S. IN INFORMATION SECURITY@YINGCAI HONORS COLLEGE

Sep. 2015 - June 2019

Experience

FedML Inc. (Prof. Salman Avestimehr and Dr. Chaoyang He)

Los Angeles, CA, USA

RESEARCH INTERN

June 2022 - Aug. 2022

- Designed an end-to-end MLOps pipeline that monitors model performance, and helps explaining and mitigating drifts.
- Built a serving framework that helps model optimization, and deployment.

Secure Localization Team, Virginia Tech (Prof. Yaling Yang and Prof. Gang Wang)

Blacksburg, USA

LEADER

January 2019 - April 2019

- Lead a group of 9 excellent researchers from Virginia Tech, Microsoft Research, Facebook and UESTC. Designing GPS spoofing defense methods.

Microsoft Research Asia (Dr. Yuanchao Shu)

Beijing, P.R. China

SHORT-TERM RESEARCH INTERN

Sep. 2017

- Developed a driving simulator based on Android and video game Euro Truck Simulator II. This system simulates the actual GPS spoofing attack in Budapest when using mobile navigators.

Dominity Security Co., Ltd.

Chengdu, P.R. China

FOUNDER/CEO

Aug. 2017

- Found Dominity Security Co., Ltd. with 14 excellent peers and serve as CEO, working on commercializing wireless security defense systems.

Publications

OPERATIONAL ML FOR NETWORKS

[Conference 1] AMIR: Active Multimodal Interaction Recognition from Video and Network Traffic in Connected Environments

Cancun, Mexico

SHINAN LIU, TARUN MANGLA, TED SHAO WANG, JINJIN ZHAO, JOHN PAPARRIZOS, SANJAY KRISHNAN, NICK FEAMSTER

Oct., 2023

Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technology (UbiComp/IMWUT'23)

[Conference 2] LEAF: Navigating Concept Drift in Cellular Networks

Paris, France

SHINAN LIU, FRANCESCO BRONZINO, PAUL SCHMITT, ARJUN NITIN BHAGOJI, NICK FEAMSTER, HECTOR CRESPO, TIMOTHY

Nov., 2023

COYLE, BRIAN WARD *International Conference on emerging Networking EXperiments and Technologies (CoNext'23)*

[Preprint 1] NetDiffusion: Network Data Augmentation Through Protocol-Constrained Traffic Generation

arXiv (In submission)

XI JIANG, SHINAN LIU, AARON GEMBER-JACOBSON, ARJUN NITIN BHAGOJI, PAUL SCHMITT, FRANCESCO BRONZINO, NICK

Oct., 2023

FEAMSTER <https://arxiv.org/abs/2310.08543>

[Preprint 2] AC-DC: Adaptive Ensemble Classification for Network Traffic Identification

arXiv (In submission)

XI JIANG, SHINAN LIU, SALOUA NAAMA, FRANCESCO BRONZINO, PAUL SCHMITT, NICK FEAMSTER

Feb., 2023

<https://arxiv.org/abs/2302.11718>

[Workshop 1] Generative, High-Fidelity Network Traces

Boston, USA

XI JIANG*, SHINAN LIU*, AARON GEMBER-JACOBSON, PAUL SCHMITT, FRANCESCO BRONZINO, NICK FEAMSTER. *The 22nd*

Nov., 2023

ACM Workshop on Hot Topics in Networks (HotNets'23)

NETWORK SECURITY AND PRIVACY

[Conference 3] Stars can tell: A Robust Method to Defend against GPS Spoofing Attacks Using Off-the-shelf Chipset

Virtual, Canada

SHINAN LIU*, XIANG CHENG*, HANCHAO YANG, YUANCHAO SHU, XIAORAN WENG, PING GUO, KEXIONG (CURTIS) ZENG, GANG

Aug. 11-13, 2021

WANG, YALING YANG *30th USENIX Security Symposium (USENIX Security'21)*

[Conference 4] All Your GPS Are Belong To Us: Towards Stealthy Manipulation of Road Navigation Systems

KEXIONG (CURTIS) ZENG, **SHINAN LIU**, YUANCHAO SHU, DONG WANG, HAOYU LI, YANZHI DOU, GANG WANG AND YALING YANG. 27th USENIX Security Symposium (USENIX Security'18)

Baltimore, MD, USA

Aug. 15–17, 2018

[Conference 5] Toward Identifying Home Privacy Leaks Using Augmented Reality

STEFANY CRUZ, LOGAN DANEK, **SHINAN LIU**, CHRISTOPHER KRAEMER, ZIXIN WANG, NICK FEAMSTER, DANNY YUXING HUANG, YAXING YAO, JOSIAH HESTER Symposium on Usable Security and Privacy (USEC'23, Co-located with NDSS'23)

San Diego, CA, USA

Feb 27, 2023

[Workshop 2] A Practical GPS Location Spoofing Attack in Road Navigation Scenario

KEXIONG (CURTIS) ZENG, YUANCHAO SHU, **SHINAN LIU**, YANZHI DOU AND YALING YANG. 18th ACM Workshop on Mobile Computing Systems and Applications (Hotmobile'17)

Sonoma, CA, USA

Feb. 21–22, 2017

[Poster] Security Analysis of Multi-Sensor Fusion based Localization in Autonomous Vehicles

JUNJIE SHEN, JUN YEON WON, **SHINAN LIU**, QI ALFRED CHEN, ALEXANDER VEIDENBAUM. Network & Distributed System Security Symposium NDSS'19 DISTINGUISHED POSTER PRESENTATION

San Diego, CA, USA

Feb. 24-27, 2019

NETWORK MEASUREMENT

[Conference 6] Characterizing Service Provider Response to the COVID-19 Pandemic in the United States

SHINAN LIU, PAUL SCHMITT, FRANCESCO BRONZINO, NICK FEAMSTER. The Passive and Active Measurement Conference 2021 (PAM'21)

Virtual, USA

March, 2021

[Conference 7] Mapping the Digital Divide: Before, During, and After COVID-19

FRANCESCO BRONZINO, NICK FEAMSTER, **SHINAN LIU**, JAMES SAXON, PAUL SCHMITT. The 48th Research Conference on Communication, Information and Internet Policy (TPRC'21)

Virtual, USA

March, 2021

PATENTS

[Pa4] A Secure Method and Device to Deliver Satellite Signals

SHINAN LIU, XIN ZHOU, XIBO YANG, RUI KANG, GAOXIANG WU, HAO DU, RUI KANG, SHENGZHI QIN, SAI XU. National Institution of Intellectual Property, P. R. China.

Chengdu, P.R.China

March, 2020

[Pa3] A Satellite Signal Classification and Detection Method and Device

SHENGZHI QIN, XIBO YANG, SAI XU, XIN ZHOU, RUI KANG, **SHINAN LIU**, GAOXIANG WU, HAO DU. National Institution of Intellectual Property, P. R. China, ZL 2017 1 0478901.

Chengdu, P.R.China

Dec., 2019

[Pa2] A Wireless Signal Classification and Detection Method and Device

RUI KANG, **SHINAN LIU**, XIN ZHOU, HAO DU, XIBO YANG, SAI XU, SHENGZHI QIN, GAOXIANG WU. National Institution of Intellectual Property, P. R. China, ZL 2017 2 1275895.5

Chengdu, P.R.China

July, 2018

[Pa1] A Software-Defined Wireless Signal Reception Device and System

HAO DU, RUI KANG, GAOXIANG WU, SAI XU, **SHINAN LIU**, SHENGZHI QIN, XIBO YANG, XIN ZHOU. National Institution of Intellectual Property, P. R. China, ZL 2017 2 1090307.0

Chengdu, P.R.China

March, 2018

Honors & Awards

2019	Daniels Fellowship , UChicago CS department fellowship	Chicago, USA
2019	NDSS'19 Distinguished Poster Presentation Award , The only team who received this award	San Diego, USA
2019	Best Undergrad Thesis , 1 out of 12 Students in UESTC	Sichuan, P.R.China
2018	Network Security Scholarship , 1 of 66 Undergraduate Students Who Won this National Award	Beijing, P.R.China
2017	Highest Prize , 10th National University Students Information Security Competition	Xian, P.R.China

Academic services

2023	Committee Member , NSF ACTION Institute Student Advisory Council	Santa Barbara, USA
2022	Mentor , Data clinics in collaboration with Verizon	Chicago, USA
2020	Teaching Assistant , CS23400 Mobile Computing, CS15400 Introduction to Computer System	Chicago, USA
2020	Committee Member , IAG (International Association of Geodesy) GNSS Interference and Spoofing	Chicago, USA
	Reviewer , IEEE Transactions on Machine Learning in Communications and Networking, Computer Communications (INFOCOM), EAI SecureComm, IEEE Transactions on Wireless Communications	Chicago, USA