

Peiran Wang

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EDUCATION AND WORK

Sichuan University (SCU)

B.E. in Cybersecurity, Cybersecurity excellence class, GPA: 3.91, rank: 2/172

Chengdu, China

Sept. 2018 – Jun. 2022

Tsinghua University (THU)

M.S. in Cybersecurity

Beijing, China

Sept. 2022 – Present

RESEARCH EXPERIENCE

Research Intern

Purdue University, Prof. Yongle Zhang

Sep. 2022 – Jan. 2023

West Lafayette, United States

- Develop a framework to using fuzzing to debug errors in distributed system update procedures.

Research Intern

John Hopkins University, Prof. Yinzhi Cao

May. 2022 – Jun. 2023

Baltimore, United States

- Build a system to automatically find vulnerability in Web application.

Research Intern

Microsoft Research Asia, Systems Research Group

Sep. 2021 – Jun. 2022

Beijing, China

- Build a compiler to optimally parallel large scale AI models on distributed system.

Research Assistant

Tsinghua University, Network Measurement Group

Oct. 2021 – Mar. 2022

Beijing, China

- Network measurement of IP2AS mapping combining geological information.

Undergraduate Research Assistant

Sichuan University, Prof. Beibei Li

Sept. 2020 – May. 2022

Chengdu, China

- Developed a Byzantine defense framework in Federated Learning.
- Proposed A solution to the problem of non-IID data in Federated Learning.

Undergraduate Research Assistant

Sichuan University, Prof. Cheng Huang

May. 2020 – May. 2021

Chengdu, China

- Proposed a static detection method to detect malicious mining JavaScript code in browser.

AWARDS

Microsoft Research Asia **Star of Tomorrow Award**

Outstanding Undergraduate Graduates

National Scholarship (for top 0.2% students in China)

Sichuan University **First Class Scholarship**

26th IEEE Symposium on Computers and Communications (ISCC 2021) **Best Paper Award**

PUBLICATION

- [1] Li, Beibei, Wang, Peiran, Kong, Qinglei, Yuan, Zhang and Lu, Rongxing. Defending Byzantine Attacks in Ensemble Federated Learning: A Reputation-based Phishing Approach. *IEEE TRANSACTIONS ON INFORMATION FORENSICS AND SECURITY, IEEE TIFS (under revision)*, 2022. **1st student author**.
- [2] Li Beibei, Wang Peiran, Huang Hanyuan, Ma Shang and Jiang Yukun. FLPhish: Reputation-based Phishing Byzantine Defense in Ensemble Federated Learning. *2021 IEEE Symposium on Computers and Communications (ISCC)*, **Best Paper Award**, 2021. **1st student author**.
- [3] Li Beibei, Jiang Yukun, Sun Wenbin, Niu Weina and Wang Peiran. FedVANET: Efficient Federated Learning with Non-IID Data for Vehicular Ad Hoc Networks. *2021 IEEE Global Communications Conference (GLOBECOM)*, 2021.
- [4] Wang Peiran, Sun Yuqiang, Huang Cheng, Du Yutong, Liang Genpei and Long Gang. MineDetector: JavaScript Browser-side Cryptomining Detection using Static Methods. *The 24th IEEE International Conference on Computational Science and Engineering (CSE 2021)*, 2021. **1st author**.
- [5] TANGRAM: Automating Execution Planning for Distributed Deep Neural Network (*Working paper in MSRA*), in submission. **co-1st author**.

- [6] DimT-SL: Mitigating Label Leakage in Two-Party Split Learning, *colloborated with Tencent, in submission*, **co-1st author**.
- [7] FedCliP: Communication Efficient Federated Learning with Client Pruning, *in submission*.
- [8] EVS: An Efficient Vantage Point Selection Algorithm for Router Geolocation, *in submission*.
- [9] FedChain: A Secure Proof of Federated Learning Consensus Protocol for Blockchain, **1st author**, *in submission*.

RESEARCH INTEREST

System: System Security/Machine Learning System/Distributed System/Networked System/System Debugging

PLSE: Software Security/Program Analysis/Software Debugging/Programming Language/Software Reliability

Networking: Mobile System/Network Measurement/Network Security/Reality System/Mobile Video Streaming

TEACHING AND SHARING

Peer Mentor of Sichuan University: Teaching and sharing about how to start research and make preparations for graduate study to some undergraduate computer science students.

Organizer of SurviveSCUManual: Organizing some graduate computer science students from Sichuan University to share their experience and knowledge about how to learn computer science and start computer science research during your undergraduate by yourselves for CS/SE students in Sichuan University: [our website](#)

SERVICES

External Reviewer: IEEE ICC, AAAI, KSEM.

Reviewer: IEEE T-IFS.