

LIMIN YANG

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EDUCATION

University of Illinois Urbana-Champaign, Ph.D. in Computer Science, Advisor: Gang Wang	Aug.2019 – May 2024
Virginia Tech, Ph.D. in Computer Science, Advisor: Gang Wang	Aug.2018 – Aug.2019
East China Normal University, Masters Study in Computer Science	Sep.2015 – Jun.2018
East China Normal University, B.E. in Computer Science	Sep.2011 – Jun.2015

RESEARCH INTERESTS

Security, measurement, and explainable AI.

PUBLICATIONS

[Under Review, USENIX Security'20] Shuofei Zhu, Jianjun Shi, **Limin Yang**, Boqin Qin, Ziyi Zhang, Linhai Song, Gang Wang. "Title Anonymized for the Double-blind Submission".

[arXiv'20] Hang Hu, **Limin Yang**, Shihan Lin, Gang Wang. "Security Vetting Process of Smart-home Assistant Applications: A First Look and Case Studies", January 2020.

[IMC'19] Peng Peng, **Limin Yang**, Linhai Song, Gang Wang. "Opening the Blackbox of VirusTotal: Analyzing Online Phishing Scan Engines." In Proceedings of *The ACM SIGCOMM Internet Measurement Conference*, Amsterdam, Netherlands, October 2019.

[USENIX Security'18] Dongliang Mu, Alejandro Cuevas, **Limin Yang**, Hang Hu, Xinyu Xing, Bing Mao, Gang Wang. "Understanding the Reproducibility of Crowd-reported Security Vulnerabilities." In Proceedings of *The 27th USENIX Security Symposium*, Baltimore MD, August 2018.

[Globecom'17] **Limin Yang**, Xiangxue Li, Yu Yu. "VulDigger: A Just-in-time and Cost-Aware Tool for Digging Vulnerability-Contributing Changes." In Proceedings of *IEEE Global Communications Conference (GLOBECOM)*, Singapore, December 2017.

[PPNA'17] Minhui Xue, **Limin Yang**, Keith W. Ross, and Haifeng Qian. "Characterizing user behaviors in location-based find-and-flirt services: Anonymity and demographics." In *Peer-to-Peer Networking and Applications (PPNA)*, 2017.

RESEARCH EXPERIENCE

Explaining Unsupervised Deep Learning Models , Research Assistant, UIUC	Aug.2019 – Current
<ul style="list-style-type: none">• Make it clear on the two different definitions of machine learning model explanation.• Build a unified explanation framework for explaining both clustering and anomaly detection models.• Achieve the best or parallel performance compared to state-of-the-art methods on different fidelity tests.	
VirusTotal Phishing URLs Scanning , Research Assistant, Virginia Tech	Jan.2019 – May 2019
<ul style="list-style-type: none">• Control phishing websites to understand the quality and reliability of security scanners and VirusTotal.• Set up multiple PayPal and IRS phishing sites and submit them to VirusTotal and its 68 vendors periodically.• Observe the incoming traffic of our phishing sites to verify the reliability of VirusTotal.	
Smart Home Assistants Cloud Spoofing , Research Assistant, Virginia Tech	Aug.2018 – May 2019
<ul style="list-style-type: none">• Understand the authentication mechanism in smart home assistant systems (Amazon Alexa and Google Home).	

- Develop an Amazon Alexa skill and a Google Home action for finding authentication issues.
- Verify that replay attack and SQL injection attack are feasible with proof-of-concept experiments.

Vulnerabilities Reproduction, Research Intern, The Pennsylvania State University

Nov.2017 – Jan.2018

- An empirical study to unveil the reproducibility of vulnerabilities using crowdsourcing information.
- Collect bug reports from websites like exploit-db and summarize missing information to reproduce a bug.
- Measurement analysis on how crowdsourcing could ease the effort by manually reproducing the bugs.

Vulnerability Contributing Commits (VCCs) Prediction, Research Assistant, ECNU

Nov.2016 – Mar.2017

- Predict whether a code commit would introduce potential security vulnerabilities.
- Build a vulnerability prediction model for the Firefox project on code commits level (Precision: 92%, Recall: 14%).
- Build another effort-aware model to capture 31% VCCs with 20% inspection effort (measured by lines of code).

INTERNSHIPS

The Pennsylvania State University, Research Intern, Pennsylvania, US

Sep.2017 – Feb.2018

- Collect bug reports from websites like exploit-db and summarize missing information to reproduce a bug.
- Measurement analysis on how crowdsourcing could ease the effort by manually reproducing the bugs.

Xuebajun, Search & Rank Intern, Shanghai, China

Sep.2016 – Oct.2016

- Locate reasons for response bottleneck by reading the source code related to searching of Xuebajun app.
- Finish a comprehensive code report (10,000+ SLOC).

Peking University, Exploit Intern, Beijing, China

Jul.2015 – Aug.2015

- Focus on practical training like binary vulnerability discovery/exploit (Windows).
- Extract fingerprints for industrial control systems like Siemens S7-1200 with Nmap.

UnionPay Smart, Quantitative Analyst Assistant Intern, Shanghai, China

Mar.2015 – Jun.2015

- Fetch and analyze luxury industry data from the transaction records of 2.7 billion credit cards provided by UnionPay.

AWARDS

- ECNU Graduate Student Overseas Research Scholarship *2017*
- ECNU Top-notch Innovative Personnel Training Plan (4/91) *2013 – 2015*

TEACHING

- CS-4264 Principles of Computer Security, Virginia Tech, Teaching Assistant *Spring 2019*
- CS-3114 Data Structures and Algorithms, Virginia Tech, Teaching Assistant *Fall 2018*