

# Gang Wang

Assistant Professor of Computer Science  
University of Illinois at Urbana-Champaign (UIUC)

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## EDUCATION

**University of California, Santa Barbara**, Santa Barbara, CA. 2010 – 2016  
Ph.D. in Computer Science  
Advisors: Ben Y. Zhao, and Heather Zheng

**Tsinghua University**, Beijing, China. 2006 – 2010  
Bachelor of Engineering, Electronic Engineering

## APPOINTMENTS

**University of Illinois at Urbana-Champaign**, Urbana, IL.  
Assistant Professor, Department of Computer Science Aug. 2019 – Present  
Affiliate Faculty, Department of Electrical and Computer Engineering Nov. 2020 – Present  
Affiliate Faculty, Informatics Programs, School of Information Sciences Sep. 2021 – Present

**Virginia Tech**, Blacksburg, VA.  
Assistant Professor, Department of Computer Science Aug. 2016 – Aug. 2019

**Microsoft Research**, Redmond, WA.  
Research Intern; with Jay Stokes, Weidong Cui, and Helen Wang Jun. 2014 – Sep. 2014

**LinkedIn**, Mountain View, CA.  
Data Scientist Intern; with Vicente Silveira, and Karthik Ramasamy Jun. 2012 – Sep. 2012

**Microsoft Research**, Redmond, WA.  
Research Intern; with Cormac Herley, and Jay Stokes Jun. 2011 – Sep. 2011

## RESEARCH INTERESTS

Security and Privacy; Data Mining; Internet Measurement; Human Computer Interaction

## AWARDS

Amazon Research Awards, *Amazon* (2021)  
Teacher Ranked as Excellent/Outstanding by their Students, *UIUC* (2019, 2020)  
IMWUT Distinguished Paper Award (2019)  
Outstanding New Assistant Professor Award, *Virginia Tech* (2019)  
ACM CCS Outstanding Paper Award, *ACM CCS* (2018)  
NSF CAREER Award, *NSF* (2018)  
Google Faculty Research Award, *Google* (2017-2018)  
Assistant Professor Mentoring Award, *Virginia Tech* (2016)  
Outstanding Dissertation Award, *UC Santa Barbara* (2016)  
Graduate Division Dissertation Fellowship, *UC Santa Barbara* (2015-2016)  
SIGMETRICS Best Practical Paper Award, *ACM SIGMETRICS* (2013)  
Scholarship for Academic Excellence, *Tsinghua University* (2007-2009)

## PUBLICATIONS

## Refereed Conference Proceedings

1. **[IMC '21]** Rishabh Chhabra, Paul Murley, Deepak Kumar, Michael Bailey, and **Gang Wang**. "Measuring DNS-over-HTTPS Performance Around the World". In Proceedings of *The ACM Internet Measurement Conference (IMC)*, Virtual Event, November 2021.
2. **[CCS '21]** Qingying Hao, Licheng Luo, Steve TK Jan, and **Gang Wang**. "It's Not What It Looks Like: Manipulating Perceptual Hashing based Applications". In Proceedings of *The ACM Conference on Computer and Communications Security (CCS)*, Seoul, South Korea, November 2021.
3. **[IMWUT/UbiComp '21]** Natã Miccael Barbosa, **Gang Wang**, Blase Ur, and Yang Wang. "Who Am I? A Design Probe Exploring Real-Time Transparency About Online and Offline User Profiling Underlying Targeted Ads". In Proceedings of *The ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp)*, September 2021.
4. **[USENIX Security '21]** Jose Rodrigo Sanchez Vicarte, **Gang Wang**, and Christopher Fletcher. "Double-Cross Attacks: Subverting Active Learning Systems". In Proceedings of *The 30th USENIX Security Symposium (USENIX Security)*, Vancouver, BC, Canada, August 2021.
5. **[USENIX Security '21]** Limin Yang, Wenbo Guo, Qingying Hao, Arridhana Ciptadi, Ali Ahmadzadeh, Xinyu Xing, and **Gang Wang**. "CADE: Detecting and Explaining Concept Drift Samples for Security Applications". In Proceedings of *The 30th USENIX Security Symposium (USENIX Security)*, Vancouver, BC, Canada, August 2021 (**Artifact Evaluated**).
6. **[USENIX Security '21]** Hang Hu, Steve T.K. Jan, Yang Wang, and **Gang Wang**. "Assessing Browser-level Defense against IDN-based Phishing". In Proceedings of *The 30th USENIX Security Symposium (USENIX Security)*, Vancouver, BC, Canada, August 2021.
7. **[USENIX Security '21]** Shinan Liu, Xiang Cheng, Hanchao Yang, Yuanchao Shu, Xiaoran Weng, Ping Guo, Kexiong (Curtis) Zeng, **Gang Wang**, and Yaling Yang. "Stars Can Tell: A Robust Method to Defend against GPS Spoofing using Off-the-shelf Chipset". In Proceedings of *The 30th USENIX Security Symposium (USENIX Security)*, Vancouver, BC, Canada, August 2021 (**Artifact Evaluated**).
8. **[AsiaCCS '21]** Trung Tin Nguyen, Duc Cuong Nguyen, Michael Schilling, **Gang Wang**, and Michael Backes. "Measuring User Perception for Detecting Unexpected Access to Sensitive Resource in Mobile Apps". In Proceedings of *The ACM Asia Conference on Computer and Communications Security (AsiaCCS)*, Hong Kong, China, June 2021.
9. **[NDSS '21]** Junjie Liang, Wenbo Guo, Tongbo Luo, Vasant Honavar, **Gang Wang**, and Xinyu Xing. "FARE: Enabling Fine-grained Attack Categorization under Low-quality Labeled Data". In Proceedings of *The Network and Distributed System Security Symposium (NDSS)*, Virtual Conference, February 2021.
10. **[IMWUT/UbiComp '20]** Faysal Hossain Shezan, Hang Hu, **Gang Wang**, and Yuan Tian. "VerHealth: Vetting Medical Voice Applications through Policy Enforcement." In Proceedings of *The ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp)*, December 2020.
11. **[USENIX Security '20]** Shuofei Zhu, Jianjun Shi, Limin Yang, Boqin Qin, Ziyi Zhang, Linhai Song and **Gang Wang**. "Measuring and Modeling the Label Dynamics of Online Anti-Malware Engines". In Proceedings of *The 29th USENIX Security Symposium (USENIX Security)*, Boston, MA, August 2020 (**Artifact Evaluated**).
12. **[IEEE SP '20]** Steve T.K. Jan, Qingying Hao, Tianrui Hu, Jiameng Pu, Sonal Oswal, **Gang Wang**, and Bimal Viswanath. "Throwing Darts in the Dark? Detecting Bots with Limited Data using Neural Data Augmentation". In Proceedings of *The 41st IEEE Symposium on Security and Privacy (IEEE SP)*, San Francisco, CA, May 2020.
13. **[WWW '20]** Faysal Hossain Shezan, Hang Hu, Jiamin Wang, **Gang Wang**, and Yuan Tian. "Read Between the Lines: An Empirical Measurement of Sensitive Applications of Voice Personal Assistant Systems". In Proceedings of *The Web Conference (WWW)*, Taipei, April 2020.
14. **[CCS '19]** Sazzadur Rahaman, **Gang Wang**, and Danfeng Yao. "Security Certification in Payment Card Industry: Testbeds, Measurements, and Recommendations". In Proceedings of *The 26th ACM Conference on Computer and Communications Security (CCS)*, London, UK, November 2019 (**CSAW '20 Applied Research Competition Finalist**).
15. **[IMC '19]** Mshabab Alrizah, Sencun Zhu, Xinyu Xing, and **Gang Wang**. "Errors, Misunderstandings, and Vulnerabilities: Analyzing the Crowdsourcing Process of Ad-blocking Systems". In Proceedings of *The ACM SIGCOMM Internet Measurement Conference (IMC)*, Amsterdam, Netherlands, October 2019.

16. **[IMC '19]** Peng Peng, Limin Yang, Linhai Song, and **Gang Wang**. "Opening the Blackbox of VirusTotal: Analyzing Online Phishing Scan Engines". In Proceedings of *The ACM SIGCOMM Internet Measurement Conference (IMC)*, Amsterdam, Netherlands, October 2019 (short paper).
17. **[AsiaCCS '19]** Peng Peng, Chao Xu, Luke Quinn, Hang Hu, Bimal Viswanath, and **Gang Wang**. "What Happens After You Leak Your Password: Understanding Credential Sharing on Phishing Sites". In Proceedings of *The 14th ACM Asia Conference on Information, Computer and Communications Security (AsiaCCS)*, Auckland, New Zealand, July 2019.
18. **[USENIX Security '19]** Ying Dong, Wenbo Guo, Yueqi Chen, Xinyu Xing, Yuqing Zhang, and **Gang Wang**. "Towards the Detection of Inconsistencies in Public Security Vulnerability Reports". In Proceedings of *The 28th USENIX Security Symposium (USENIX Security)*, Santa Clara, CA, August 2019.
19. **[IEEE SP '19]** Hang Hu, Peng Peng, and **Gang Wang**. "Characterizing Pixel Tracking through the Lens of Disposable Email Services". In Proceedings of *The 40th IEEE Symposium on Security and Privacy (IEEE SP)*, San Francisco, CA, May 2019.
20. **[IMWUT/UbiComp '19]** Huandong Wang, Yong Li, Sihan Zeng, **Gang Wang**, Pengyu Zhang, Pan Hui, and Depeng Jin. "Modeling Spatio-Temporal App Usage for a Large User Population". In Proceedings of *The ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp)*, March 2019.
21. **[AAAI '19]** Steve T.K. Jan, Joseph Messou, Yen-Chen Lin, Jia-Bin Huang, and **Gang Wang**. "Connecting the Digital and Physical World: Improving the Robustness of Adversarial Attacks". In Proceedings of *The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI)*, Honolulu, HI, January 2019 (**Spotlight**).
22. **[HICSS '19]** Shiliang Tang, Ziming Wu, Xinyi Zhang, **Gang Wang**, Xiaojuan Ma, Haitao Zheng, and Ben Y. Zhao. "Towards Understanding the Adoption and Social Experience of Digital Wallet Systems". In Proceedings of *Hawaii International Conference on System Sciences (HICSS)*, Maui HI, January 2019.
23. **[IMC '18]** Ke Tian, Steve T.K. Jan, Hang Hu, Danfeng Yao, and **Gang Wang**. "Needle in a Haystack: Tracking Down Elite Phishing Domains in the Wild". In Proceedings of *ACM Internet Measurement Conference (IMC)*, Boston, MA, October 2018.
24. **[CCS '18]** Wenbo Guo, Dongliang Mu, Jun Xu, Purui Su, **Gang Wang**, and Xinyu Xing. "LEMNA: Explaining Deep Learning based Security Applications". In Proceedings of *The 25th ACM Conference on Computer and Communications Security (CCS)*, Toronto, Canada, October 2018 (**Outstanding Paper Award**).
25. **[SecDev '18]** Hang Hu, Peng Peng, and **Gang Wang**. "Towards Understanding the Adoption of Anti-Spoofing Protocols in Email Systems". In Proceedings of *The IEEE Cybersecurity Development Conference (SecDev)*, Cambridge, MA, October 2018.
26. **[IMWUT/UbiComp '18]** Zhen Tu, Runtong Li, Yong Li, **Gang Wang**, Di Wu, Pan Hui, Li Su, and Depeng Jin. "Your Apps Give You Away: Distinguishing Mobile Users by Their App Usage Fingerprints". In Proceedings of *The ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp)*, September 2018 (**IMWUT Distinguished Paper Award**).
27. **[USENIX Security '18]** Hang Hu, and **Gang Wang**. "End-to-End Measurements of Email Spoofing Attacks". In Proceedings of *The 27th USENIX Security Symposium (USENIX Security)*, Baltimore, MD, August 2018.
28. **[USENIX Security '18]** Dongliang Mu, Alejandro Cuevas, Limin Yang, Hang Hu, Bing Mao, Xinyu Xing, and **Gang Wang**. "Understanding the Reproducibility of Crowd-reported Security Vulnerabilities". In Proceedings of *The 27th USENIX Security Symposium (USENIX Security)*, Baltimore, MD, August 2018.
29. **[USENIX Security '18]** Kexiong (Curtis) Zeng, Shinan Liu, Yuanchao Shu, Dong Wang, Haoyu Li, Yanzhi Dou, **Gang Wang**, and Yaling Yang. "All Your GPS Are Belong to Us: Towards Stealthy Manipulation of Road Navigation Systems". In Proceedings of *The 27th USENIX Security Symposium (USENIX Security)*, Baltimore, MD, August 2018.
30. **[AsiaCCS '18]** Xiangwen Wang, Peng Peng, Chun Wang, and **Gang Wang**. "You Are Your Photographs: Detecting Multiple Identities of Vendors in the Darknet Marketplaces". In Proceedings of *The ACM Asia Conference on Computer and Communications Security (AsiaCCS)*, Songdo, Incheon, Korea, June 2018.
31. **[SDM '18]** Huandong Wang, Yong Li, **Gang Wang**, and Depeng Jin. "You Are How You Move: Linking Multiple User Identities from Massive Mobility Traces". In Proceedings of *The SIAM International Conference on Data Mining (SDM)*, San Diego, CA, May 2018.

32. **[CODASPY '18]** Chun Wang, Steve T.K. Jan, Hang Hu, Douglas Bossart, and **Gang Wang**. "The Next Domino to Fall: Empirical Analysis of User Passwords across Online Services". In Proceedings of *The ACM Conference on Data and Applications Security and Privacy (CODASPY)*, Tempe, AZ, March 2018 (short paper).
33. **[NDSS '18]** Huandong Wang, Chen Gao, Yong Li, **Gang Wang**, Depeng Jin, and Jingbo Sun. "De-anonymization of Mobility Trajectories: Dissecting the Gaps between Theory and Practice". In Proceedings of *The 25th Annual Network & Distributed System Security Symposium (NDSS)*, San Diego, CA, February 2018.
34. **[GROUP '18]** Steve T.K. Jan, Chun Wang, Qing Zhang, and **Gang Wang**. "Pay-per-Question: Towards Targeted Q&A with Payments". In Proceedings of *The ACM International Conference on Supporting Group Work (GROUP)*, Sanibel Island, FL, January 2018.
35. **[CIKM '17]** Rupinder Paul Khandpur, Taoran Ji, Steve T.K. Jan, **Gang Wang**, Chang-Tien Lu, and Naren Ramakrishnan. "Crowdsourcing Cybersecurity: Cyber Attack Detection using Social Media". In Proceedings of *The 26th ACM International Conference on Information and Knowledge Management (CIKM)*, Singapore, November 2017.
36. **[CIKM '17]** Huan Yan, Tzu-Heng Lin, **Gang Wang**, Yong Li, Haitao Zheng, Depeng Jin, and Ben Y. Zhao. "On Migratory Behavior in Video Consumption". In Proceedings of *The 26th ACM International Conference on Information and Knowledge Management (CIKM)*, Singapore, November 2017.
37. **[USENIX Security '17]** Fang Liu, Chun Wang, Andres Pico, Danfeng Yao, and **Gang Wang**. "Measuring the Insecurity of Mobile Deep Links of Android". In Proceedings of *The 26th USENIX Security Symposium (USENIX Security)*, Vancouver, Canada, August 2017.
38. **[ICWSM '17]** Xinyi Zhang, Shiliang Tang, Yun Zhao, **Gang Wang**, Haitao Zheng, and Ben Y. Zhao. "Cold Hard E-Cash: Friends and Vendors in the Venmo Digital Payments System". In Proceedings of *International AAAI Conference on Web and Social Media (ICWSM)*, Montreal, Canada, May 2017.
39. **[ICWSM '17]** Huan Yan, Tzu-Heng Lin, **Gang Wang**, Yong Li, Haitao Zheng, Depeng Jin, and Ben Y. Zhao. "A First Look at User Switching Behaviors Over Multiple Video Content Providers". In Proceedings of *International AAAI Conference on Web and Social Media (ICWSM)*, Montreal, Canada, May 2017 (short paper).
40. **[AsiaCCS '17]** Amiangshu Bosu, Fang Liu, Danfeng Yao, and **Gang Wang**. "Collusive Data Leak and More: Large-scale Threat Analysis of Inter-app Communications". In Proceedings of *ACM Asia Conference on Computer and Communications Security (AsiaCCS)*, Abu Dhabi, UAE, April 2017.
41. **[IMC '16]** Bolun Wang, Xinyi Zhang, **Gang Wang**, Haitao Zheng, and Ben Y. Zhao. "Anatomy of a Personalized Livestreaming System". In Proceedings of *The 16th ACM SIGCOMM Internet Measurement Conference (IMC)*, Santa Monica, CA, November 2016.
42. **[MobiSys '16]** **Gang Wang**, Bolun Wang, Tianyi Wang, Ana Nika, Haitao Zheng, and Ben Y. Zhao. "Defending Against Sybil Devices in Crowdsourced Mapping Services". In Proceedings of *The 14th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)*, Singapore, June 2016.
43. **[ICWSM '16]** **Gang Wang**, Sarita Schoenebeck, Haitao Zheng, and Ben Y. Zhao. "Will Check-in for Badges: Understanding Bias and Misbehavior on Location-based Social Networks". In Proceedings of *The 10th International AAAI Conference on Web and Social Media (ICWSM)*, Cologne, Germany, May 2016.
44. **[CHI '16]** **Gang Wang**, Xinyi Zhang, Shiliang Tang, Haitao Zheng, and Ben Y. Zhao. "Unsupervised Clickstream Clustering for User Behavior Analysis". In Proceedings of *SIGCHI Conference on Human Factors in Computing Systems (CHI)*, San Jose, CA, May 2016.
45. **[CSCW '15]** **Gang Wang**, Tianyi Wang, Bolun Wang, Divya Sambasivan, Zengbin Zhang, Haitao Zheng, and Ben Y. Zhao. "Crowds on Wall Street: Extracting Value from Collaborative Investing Platforms". In Proceedings of *The 18th ACM conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, Vancouver, BC, Canada, March 2015.
46. **[IMC '14]** **Gang Wang**, Bolun Wang, Tianyi Wang, Ana Nika, Haitao Zheng, and Ben Y. Zhao. "Whispers in the Dark: Analysis of an Anonymous Social Network". In Proceedings of *The 14th Internet Measurement Conference (IMC)*, Vancouver, BC, Canada, November 2014.
47. **[USENIX Security '14]** **Gang Wang**, Tianyi Wang, Haitao Zheng, and Ben Y. Zhao. "Man vs. Machine: Practical Adversarial Detection of Malicious Crowdsourcing Workers". In Proceedings of *The 23rd USENIX Security Symposium (USENIX Security)*, San Diego, CA, August 2014.

48. [IMC '13] Gianluca Stringhini, **Gang Wang**, Manuel Egele, Christopher Kruegel, Giovanni Vigna, Haitao Zheng, and Ben Y. Zhao. "Follow the Green: Growth and Dynamics in Twitter Follower Markets". In Proceedings of *The 13th Internet Measurement Conference (IMC)*, Barcelona, Spain, October 2013.
49. [USENIX Security '13] **Gang Wang**, Tristan Konolige, Christo Wilson, Xiao Wang, Haitao Zheng, and Ben Y. Zhao. "You are How You Click: Clickstream Analysis for Sybil Detection". In Proceedings of *The 22nd USENIX Security Symposium (USENIX Security)*, Washington, DC, August 2013.
50. [DSN '13] **Gang Wang**, Jack Stokes, Cormac Herley, and David Felstead. "Detecting Malicious Landing Pages in Malware Distribution Networks". In Proceedings of *The 43rd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, Budapest, Hungary, June 2013.
51. [SIGMETRICS '13] Xia Zhou, Zengbin Zhang, **Gang Wang**, Xiaoxiao Yu, Ben Y. Zhao, and Haitao Zheng. "Practical Conflict Graphs for Dynamic Spectrum Distribution". In Proceedings of *ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS)*, Pittsburgh, PA, June 2013 (**Best Practical Paper Award**).
52. [WWW '13] **Gang Wang**, Konark Gill, Manish Mohanlal, Haitao Zheng, and Ben Y. Zhao. "Wisdom in the Social Crowd: An Analysis of Quora". In Proceedings of *The 22nd International World Wide Web Conference (WWW)*, Rio de Janeiro, Brazil, May 2013.
53. [NDSS '13] **Gang Wang**, Manish Mohanlal, Christo Wilson, Xiao Wang, Miriam Metzger, Haitao Zheng, and Ben Y. Zhao. "Social Turing Tests: Crowdsourcing Sybil Detection". In Proceedings of *The 20th Annual Network & Distributed System Security Symposium (NDSS)*, San Diego, CA, February 2013.
54. [WWW '12] **Gang Wang**, Christo Wilson, Xiaohan Zhao, Yibo Zhu, Manish Mohanlal, Haitao Zheng, and Ben Y. Zhao. "Serf and Turf: Crowdturfing for Fun and Profit". In Proceedings of *The 21st International World Wide Web Conference (WWW)*, Lyon, France, April 2012.
55. [MobiCom '11] Zengbin Zhang, Xia Zhou, Weile Zhang, Yuanyang Zhang, **Gang Wang**, Ben Y. Zhao, and Haitao Zheng. "I am the Antenna: Accurate Outdoor AP Location using Smartphones". In Proceedings of *The 17th Annual International Conference on Mobile Computing and Networking (MobiCom)*, Las Vegas, NV, September 2011.

## Refereed Journal Articles

56. [TIST '20] Huandong Wang, Yong Li, **Gang Wang**, and Depeng Jin. "Linking Multiple User Identities of Multiple Services from Massive Mobility Traces". In *ACM Transactions on Intelligent Systems and Technology (TIST)*, 2020.
57. [TNSM '20] Huan Yan, Tzu-Heng Lin, **Gang Wang**, Yong Li, Haitao Zheng, Depeng Jin, and Ben Y. Zhao. "On Migratory Behavior in Video Consumption". In *IEEE Transactions on Network and Service Management (TNSM)*, 2020.
58. [TMC '19] Huandong Wang, Chen Gao, Yong Li, **Gang Wang**, Depeng Jin, and Jingbo Sun. "Anonymization and De-anonymization of Mobility Trajectories: Dissecting the Gaps between Theory and Practice". In *IEEE Transactions on Mobile Computing (TMC)*, 2019.
59. [TON '18] **Gang Wang**, Bolun Wang, Tianyi Wang, Ana Nika, Haitao Zheng, and Ben Y. Zhao. "Ghost Riders: Sybil Attacks on Crowdsourced Mobile Mapping Services". In *ACM/IEEE Transactions on Networking (TON)*, 2018.
60. [TSC '18] Steve T.K. Jan, Chun Wang, Qing Zhang, and **Gang Wang**. "Analyzing Payment-driven Targeted Q&A Systems". In *ACM Transactions on Social Computing (TSC)*, 2018.
61. [TWEB '17] **Gang Wang**, Xinyi Zhang, Shiliang Tang, Christo Wilson, Haitao Zheng, and Ben Y. Zhao. "Clickstream User Behavior Models". In *ACM Transactions on the Web (TWEB)*, 2017.
62. [TWEB '17] Tianyi Wang, **Gang Wang**, Bolun Wang, Divya Sambasivan, Zengbin Zhang, Xing Li, Haitao Zheng, and Ben Y. Zhao. "Value and Misinformation in Collaborative Investing Platforms". In *ACM Transactions on the Web (TWEB)*, 2017.
63. [FCS '15] Tianyi Wang, Yang Chen, Yi Wang, Bolun Wang, **Gang Wang**, Xing Li, Haitao Zheng, and Ben Y. Zhao. "The Power of Comments: Fostering Social Interactions in Microblog Networks". In *Springer Frontiers of Computer Science (FCS)*, 2015.
64. [TON '14] Xia Zhou, Zengbin Zhang, **Gang Wang**, Xiaoxiao Yu, Ben Y. Zhao, and Haitao Zheng. "Practical Conflict Graphs in the Wild". In *ACM Transactions on Networking (TON)*, 2014.

## Refereed Workshop Proceedings

65. **[DLS '21]** Limin Yang, Arridhana Ciptadi, Ali Ahmadzadeh, and **Gang Wang**. "BODMAS: An Open Dataset for Learning based Temporal Analysis of PE Malware". In Proceedings of *Deep Learning and Security Workshop (DLS)*, in conjunction with IEEE Symposium on Security and Privacy (SP), May 2021.
66. **[SafeThings '20]** Hang Hu, Limin Yang, Shihan Lin, and **Gang Wang**. "A Case Study of the Security Vetting Process of Smart-home Assistant Applications". In Proceedings of *IEEE Workshop on the Internet of Safe Things (SafeThings)*, in conjunction with IEEE Symposium on Security and Privacy (SP), San Francisco, CA, USA, May 2020.
67. **[SafeConfig '17]** Alexander Kedrowitsch, Danfeng Yao, **Gang Wang**, and Kirk Cameron. "A First Look: Using Linux Containers for Deceptive Honeypots". In Proceedings of *Applying the Scientific Method to Active Cyber Defense Research (SafeConfig)*, in conjunction with the ACM Conference on Computer and Communications Security (CCS), Dallas, USA, October 2017.
68. **[MoST '17]** Fang Liu, Haipeng Cai, **Gang Wang**, Danfeng Yao, Karim O. Elish, and Barbara G. Ryder. "MR-Droid: A Scalable and Prioritized Analysis of Inter-App Communication Risks". In Proceedings of *Mobile Security Technologies (MoST)*, in conjunction with IEEE Symposium on Security and Privacy (SP), San Jose, CA, May 2017.
69. **[HotNets '13]** Zengbin Zhang, Lin Zhou, Xiaohan Zhao, **Gang Wang**, Yu Su, Miriam Metzger, Haitao Zheng, and Ben Y. Zhao. "On the Validity of Geosocial Mobility Traces". In Proceedings of *ACM Workshop on Hot Topics in Networks (HotNets)*, College Park, MD, November 2013.
70. **[HotMobile '11]** Christo Wilson, Troy Steinbauer, **Gang Wang**, Alessandra Sala, Haitao Zheng, and Ben Y. Zhao. "Privacy, Availability and Economics in the Polaris Mobile Social Network". In Proceedings of *The 12th ACM Workshop on Mobile Computing Systems and Applications (HotMobile)*, Phoenix, AZ, March 2011.
71. **[P2PNet '09]** **Gang Wang**, Shining Wu, Guodong Wang, Beixing Deng, and Xing Li. "Experimental Study on Neighbor Selection Policy for Phoenix Network Coordinate System." In Proceedings of *IEEE International Workshop on Peer-To-Peer Networking (P2PNet)*, St. Petersburg, Russia, 2009.

## Refereed Posters and Demos

72. **[CCS '20]** Shuofei Zhu, Ziyi Zhang, Limin Yang, Linhai Song, and **Gang Wang**. "Demonstration: Benchmarking Label Dynamics of VirusTotal Engines". *ACM Conference on Computer and Communications Security (CCS)*, Virtual Conference, November 2020.
73. **[SIGSPATIAL '17]** Qihang Gu, Dimitris Sacharidis, Michael Mathioudakis, and **Gang Wang**. "Inferring Venue Visits from GPS Trajectories". In Proceedings of *the 25th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (SIGSPATIAL)*, New York, NY, November 2017.
74. **[EuroS&P '17]** Amiangshu Bosu, Fang Liu, Danfeng Yao, and **Gang Wang**. "Android Collusive Data Leaks with Flow-sensitive DIALDroid Dataset". IEEE European Symposium on Security and Privacy (EuroS&P), Paris, France, April 2017.
75. **[SIGCOMM '13]** Tianyi Wang, **Gang Wang**, Xing Li, Haitao Zheng, and Ben Y. Zhao. "Characterizing and Detecting Malicious Crowdsourcing". *ACM Special Interest Group on Data Communication (SIGCOMM)*, Hong Kong, China, August 2013.
76. **[DySpan '12]** Xia Zhou, Zengbin Zhang, **Gang Wang**, Xiaoxiao Yu, Ben Y. Zhao, and Haitao Zheng. "Measurement-calibrated conflict graphs for dynamic spectrum distribution". *ACM 2012 IEEE International Symposium on Dynamic Spectrum Access Networks (DySpan)*, Bellevue, WA, October 2012.

## Patents

77. Bimal Viswanath, Arik Hadass, Sonal Oswal, Jiameng Pu, Tianrui Hu, **Gang Wang**, Steve Jan, Qingying Hao. "A Method to Detect Web Bots with Limited Data Using Neural Networks". Filed by VTIP. IP Disclosure: 02/04/2020. # VTIP 20-061.
78. Yaling Yang, Shinan Liu, **Gang Wang**. "A Low-Cost GPS Spoofing Detector and Spoofer Localizer". Filed by VTIP. IP Disclosure: 03/03/2020. # VTIP 20-070. U.S. Patent Application No. 63/047,085.
79. Yaling Yang, Yuancao Shu, Shinan Liu, **Gang Wang**, Kexiong Zeng. "GPS Spoofing Tool to Road Navigation System". Filed by VTIP. IP Disclosure: 09/12/2018. # VTIP 19-026.
80. **Gang Wang**, Jack Stokes, Cormac Herley, and David Felstead. "Identifying Web Pages In Malware Distribution Networks". Filed by Microsoft Corporation, published on 07/03/2014. Pattern #: US 2014/0189864 A1.



# PROFESSIONAL ACTIVITIES

## Technical Program Committee

- [USENIX Security] USENIX Security Symposium: 2018, 2021, 2022
- [IEEE SP] IEEE Symposium on Security and Privacy: 2022
- [CCS] The ACM Conference on Computer and Communications Security: 2021
- [NDSS] The Network and Distributed System Security Symposium: 2020, 2021, 2022
- [MobiSys] ACM International Conference on Mobile Systems, Applications, and Services: 2020, 2021
- [WWW] The Web Conference or TheWebConf (“Security, Privacy, and Trust” Track): 2017, 2019, 2020, 2021, 2022
- [RAID] International Symposium on Research in Attacks, Intrusions and Defenses: 2021
- [DIMVA] Conference on Detection of Intrusions and Malware & Vulnerability Assessment: 2021
- [DLS] Deep Learning and Security Workshop, 2021
- [WiSec] ACM Conference on Security and Privacy in Wireless and Mobile Networks, 2021
- [DSN] IEEE/IFIP International Conference on Dependable Systems and Networks, 2020
- [ACSAC] Annual Computer Security Applications Conference: 2018, 2019, 2020, 2021
- [IMC] ACM Internet Measurement Conference: 2019
- [CNS] IEEE Conference on Communications and Network Security: 2019
- [ICWSM] AAAI International Conference on Web and Social Media: 2016, 2017, 2018, 2019
- [eCrime] APWG Annual Symposium on Electronic Crime Research: 2018, 2019, 2020
- [ICICS] International Conference on Information and Communications Security: 2021
- [AISec] ACM Workshop on Artificial Intelligence and Security: 2016, 2017, 2018, 2019, 2020, 2021
- [MLBA] IJCAI Workshop on Machine Learning for Binary Analysis, 2020
- [WACCO] Workshop on Attackers and Cyber-Crime Operations: 2019, 2020, 2021
- [CSCW] ACM Conference on Computer-Supported Cooperative Work and Social Computing: 2018
- [IEEE SP] IEEE Symposium on Security and Privacy (Student PC): 2016

## Journal Reviewer

- [IMWUT] The Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies: 2021
- [TDSC] IEEE Transactions on Dependable and Secure Computing: 2016, 2017, 2018, 2019
- [TWEB] ACM Transactions on the Web: 2017, 2018
- [TIFS] Transactions on Information Forensics & Security: 2018
- [SP] IEEE Security & Privacy: 2018, 2019
- [Frontiers] Frontiers in ICT: 2018
- [TMC] Transactions on Mobile Computing: 2017
- [IEEE Communications] IEEE Communications Magazine: 2017
- [TOIT] ACM Transactions on Internet Technology: 2017
- [LOS ONE] Public Library of Science Open Access Journal: 2017
- [Science Advances] AAAS Open Access Journal: 2017
- [JASIST] Journal of the Association for Information Science and Technology: 2016
- [TIST] ACM Transactions on Intelligent Systems and Technology: 2015
- [TWireless] IEEE Transactions on Wireless Communications: 2015
- [COMNET] Journal on Computer Networks, special issue on P2P Network Measurement: 2011

## Journal Guest Editor

- [WWWJ] World Wide Web, Special issue on “Social computing and big data applications”: 2019, 2018, 2017

## Conference/Workshop Organization

- [KDD MLHat] International Workshop on Deployable Machine Learning for Security Defense: 2021
- [KDD MLHat] International Workshop on Deployable Machine Learning for Security Defense: 2020

## Other Services

- [NSF] National Science Foundation (NSF) Review Panel (×2): 2021
- [NSF] National Science Foundation (NSF) Review Panel (×1): 2019
- [NSF] National Science Foundation (NSF) Review Panel (×3): 2018

- [UNIPD] University of Padova Internal Proposal Review Panel: 2018

## GRANTS

SaTC: CORE: Small: Collaborative: Towards Label Enrichment and Refinement to Harden Learning-based Security Defenses

- **Role: PI;** Xinyu Xing as Co-PI
- Personal Share: \$250,000 (50%)
- Total: \$500,000
- National Science Foundation (NSF)
- 10/01/2021 to 09/30/2024

Hybrid Cloud: Cross-layer AI-driven Resiliency and Security

- **Role: PI;** Ravishankar Iyer, and Zbigniew Kalbarczyk as Co-PIs
- Personal Share: \$205,606 + \$51,401 UIUC cost share (33.3%)
- Total: \$616,818 + \$154,204 UIUC cost share
- IBM
- 08/24/2021 to 08/24/2023

SaTC: CORE: Medium: Principled Foundations for the Design and Evaluation of Graph-Based Host Intrusion Detection Systems

- **Role: Co-PI;** Adam Bates as PI
- Personal Share: \$600,599 (50%)
- Total: \$1,201,199
- National Science Foundation (NSF)
- 10/01/2021 to 09/30/2025

Combating Concept Drift in Security Applications via Proactive Data Synthesis

- **Role: Sole PI**
- Personal Share: \$70,000 + \$10,000 AWS credits (100%)
- Total: \$70,000 + \$10,000 AWS credits
- Amazon Research Awards (AI for Information Security)
- 04/01/2021 to 03/30/2022

SaTC: CORE: Small: Collaborative: Towards Facilitating Kernel Vulnerability Reproduction by Fusing Crowd and Machine Generated Data

- **Role: Co-PI;** Xinyu Xing as PI
- Personal Share: \$175,000 (35%)
- Total: \$500,000
- National Science Foundation (NSF)
- 10/01/2020 to 09/30/2023

CAREER: Machine Learning Assisted Crowdsourcing for Phishing Defense.

- **Role: Sole PI**
- Personal Share: \$538,522 (100%)
- Total: \$538,522
- National Science Foundation (NSF)
- 06/01/2018 to 05/31/2023

Augmenting User-level Defense Against Email Spoofing Attacks.

- **Role: Sole PI**
- Personal Share: \$54,735 (100%)
- Total: \$54,735
- Google Faculty Award
- 03/15/2018 to 03/14/2019

SaTC: CORE: Small: Securing Web-to-Mobile Interface Through Characterization and Detection of Malicious Deep Links.

- **Role: PI;** Danfeng Yao as Co-PI
- Personal Share: \$400,000 (80%)
- Total: \$500,000



- National Science Foundation (NSF)
- 08/01/2017 to 07/31/2021

## SELECTED PRESS

- [WNIJ NPR] Fallout From The Ransomware Attack At Illinois Valley Community College Is Still Far From Over, 09/2020
- [Vox] Why coronavirus scammers can send fake emails from real domains, 04/2020
- [The Daily Illini] Campus bluetooth attendance tracking raises debate, 01/2020
- [Bloomberg] How Hackers Can Take Over Your Car's GPS. 06/2019
- [The Cyberwire podcast] Driving GPS manipulation. 10/2018
- [The Wall Street Journal] How to Defend Against GPS Spoofing Attacks. 09/2018
- [Forbes] This GPS Spoofing Hack Can Really Mess Up Your Google Maps Trips. 07/2018
- [ACM TechNews] Researchers Mount Successful GPS Spoofing Attack Against Road Navigation Systems. 07/2018
- [The Register] Sad Nav: How a cheap GPS spoofer gizmo can tell drivers to get lost. 07/2018
- [Naked Security] How to spoof someone's GPS navigation to send them the wrong way. 07/2018
- [The Cyberwire podcast] Measuring the spear phishing threat. 07/2018
- [ACM TechNews] Meeting Updated Phishing Attacks Head On. 06/2018
- [Science Daily] Extra vigilance required to combat growing sophistication of phishing attacks. 06/2018
- [Daily Mail] Most popular passwords of 2017 are revealed, and they are incredibly easy to crack. 05/2018
- [Daily Express] Worst passwords revealed: If yours is on this list, you should change it right now. 05/2018
- [Dark Reading] More Than Half of Users Reuse Passwords. 05/2018
- [Yahoo! News] From "Superman" to "Liverpool" Have you got one of 2018's worst passwords. 05/2018
- [Security Magazine] Why People are "Password Walking". 05/2018
- [Mirror] The most common passwords of 2017 – and they're worryingly easy to guess. 05/2018
- [The Sun] Most common passwords revealed: are you guilty of using these hilariously terrible picks. 05/2018
- [New Scientist] Most people re-use old passwords (but you don't, right). 01/2018
- [The New York Times] Alexa, What Happened to My Car. 03/2018
- [CNN] Online holiday shopping scams to watch out for. 11/2017
- [WVTF Radio/NPR] Now You Really Wanna Cry. 05/2017
- [phys.org] Android apps can conspire to mine information from your smartphone. 04/2017
- [The Hill] Thousands of Android apps can "collude" to leak information, research shows. 04/2017
- [The Sun] Your smartphone apps are "secretly colluding" to spy on you in terrifying detail, researchers warn. 04/2017
- [Business Insider] Android apps can breach and share your personal data. 04/2017
- [New Scientist] Android apps share data between them without your permission. 04/2017
- [Independent] Android apps secretly steal users' data by colluding with each other, finds research. 04/2017
- [Daily Mail] Android apps are "secretly colluding" to spy on the private lives of millions of users. 04/2017
- [ACM TechNews] Android apps can conspire to mine information from your smartphone. 04/2017
- [live24News] Google Android Apps Swap Information Without Your Own Permission. 04/2017
- [WVTF Radio/NPR] Internet Scams, Hacks and Malware: A Cat & Mouse Game. 01/2017
- [Fusion] If You Use Waze, Hackers Can Stalk You. 04/2016
- [Channel 10 CBS News] Hackers can stalk you via Waze app. 04/2016
- [Recode/CNBC] Google's Waze says, Nope, hackers can't stalk you on. 04/2016
- [Fusion] Waze comes up with a fix for hack that let researchers track users' movements. 04/2016
- [Tech Times] Vulnerability In Popular Waze Navigation App Could Let Hackers Stalk You In Real Time. 04/2016
- [Tech Crunch] Waze downplays exploit that let researchers track users. 04/2016
- [Fortune] Here's How Google's Waze Can Reportedly Be Used to Stalk Drivers. 04/2016
- [i24 News] U.S. Researchers Expose "Waze" Security Lapse. 04/2016
- [NakedSecurity] How to prevent snoops from stalking you in Waze with "ghost" drivers. 04/2016
- [TechNewsToday] Waze Hackers Have You in Their Sights. 04/2016
- [Infosecurity Magazine] Waze App: The Road to Stalking Drivers. 04/2016
- [Android Headlines] Hackers Can Exploit Waze to Track Drivers in Real Time. 04/2016
- [LA Times] At Whisper's news-gathering operation, data collection comes under siege. 10/2014
- [MIT Technology Review] Fake Followers for Hire, and How to Spot Them. 10/2014
- [Boston Globe] A Dark Force, Unleashed Online. 01/2012
- [The Consumerist] Growing Number of Cyber Shills Invade Online Reviews. 12/2011

- **[InfoWorld]** Cyber Skill Business Is Booming. 12/2011
- **[Slashdot]** Million Dollar Crowdturfing Industry Dupes Social Networks. 12/2011
- **[MIT Technology Review]** Hidden Industry Dupes Social Media Users. 12/2011

## TALKS

- Detecting, Explaining, and Labeling Concept Drift Samples for Security Applications  
*C3SR IBM-ILLINOIS Center for Cognitive Computing Systems Research Faculty Meeting, Virtual (March 2021)*
- The Art of Impersonation: Demystifying Spear Phishing Attacks.  
*Women in Computer Science (WCS) Explore CS Series, Virtual (October 2020)*
- Data-Driven Security Applications: Case Studies and Open Questions.  
*Illinois Cyber Scholars Program (ICSSP) Seminar, Virtual (October 2020)*
- Data-Driven Security Applications: Case Studies and Open Questions.  
*Department of Electronic Engineering, Tsinghua University, Beijing, China (June 2020)*
- Data-Driven Security Applications: Case Studies and Open Questions.  
*Blue Hexagon, Sunnyvale CA (January 2020)*
- Trustworthiness of Information Sources (Panel)  
*DARPA Workshop: Multi-Modal Understanding and Summarization (MuMUS) of Critical Events  
The University of Pennsylvania, Philadelphia PA (October 2019)*
- Machine Learning Assisted Crowdsourcing for Phishing Defense.  
*Cybersecurity Technology Transition to Practice Workshop, Chicago, IL (July 2019)*
- Human Augmentation for Internet Security.  
*The Center of Cyber Defense and Network Assurability (CyberDNA), UNC Charlotte, Charlotte NC (May 2019)*
- Human Augmentation for Internet Security.  
*Department of Computer Science, University of Southern California, Los Angeles, CA (March 2019)*
- Human Augmentation for Internet Security.  
*Department of Computer Science, University of Virginia, Charlottesville, VA (March 2019)*
- Rethinking Human Factors for Online Security.  
*Department of Computer Science, Dartmouth College, Hanover, NH (February 2019)*
- Human Augmentation for Internet Security.  
*Department of Computer Science, The University of Chicago, Chicago, IL (February 2018)*
- Human Augmentation for Internet Security.  
*College of Information Sciences and Technology, The Penn State University, University Park, PA (February 2019)*
- Human Augmentation for Internet Security.  
*Department of Computer Science, Purdue University, West Lafayette, IN (January 2019)*
- Human Augmentation for Internet Security.  
*Department of Electrical and Computer Engineering, Purdue University, West Lafayette, IN (January 2019)*
- Human Augmentation for Internet Security.  
*Department of Computer Science, University of Illinois at Urbana-Champaign, Urbana, IL (December 2018)*
- Exploitable Human Factors and Their Implications for Online Security.  
*Department of Computer Science, Dartmouth College, Hanover, NH (May 2018)*
- The Next Domino To Fall: Empirical Analysis of User Passwords across Online Services.  
*ACM Conference on Data and Applications Security and Privacy, Tempe, AZ (March 2018)*
- Measuring the Insecurity of Mobile Deep Links of Android.  
*USENIX Security Symposium (USENIX Security), Vancouver, Canada (August 2017)*
- Identity Abuse in Mobile Social Networks and Email Systems.  
*Institute for Creativity, Arts, and Technology, Virginia Tech, Blacksburg, VA (August 2017)*
- Sybil Devices in Crowdsourced Mapping Services.  
*Workshop on Data and Algorithmic Transparency, New York City, NY (November 2016)*

- Human Factors in the Security of Online and Mobile Systems.  
*Virginia Tech CS Graduate Seminar, Blacksburg, VA (September 2016)*
- “Will Check-in for Badges”: Understanding Bias and Misbehavior on Location-based Social Networks.  
*International AAAI Conference on Web and Social Media, Cologne, Germany (May 2016)*
- Unsupervised Clickstream Clustering for User Behavior Analysis.  
*SIGCHI Conference on Human Factors in Computing Systems, San Jose, CA (May 2016)*
- Human Factors in the Security of Online Systems.  
*Department of Computer Science, Stony Brook University, Stony Brook, NY (April 2016)*
- Human Factors in the Security of Online Systems.  
*Department of Computer Science, University of Illinois at Urbana-Champaign, Urbana, IL (March 2016)*
- Human Factors in the Security of Online Systems.  
*Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL (March 2016)*
- Human Factors in the Security of Online Systems.  
*Department of Computer Science, University of Minnesota, Minneapolis, MN (March 2016)*
- Human Factors in the Security of Online Systems.  
*Department of Computer Science, The Ohio State University, Columbus, OH (February 2016)*
- Human Factors in the Security of Online Systems.  
*Department of Computer Science, Virginia Tech, Blacksburg, VA (February 2016)*
- Attacks and Defenses in Large Online Communities.  
*Uber Inc., San Francisco, CA (February 2016)*
- Attacks and Defenses in Large Online Communities.  
*LinkedIn Inc., Mountain View, CA (December 2015)*
- Whispers in the Dark: Analysis of an Anonymous Social Network.  
*The 14th Internet Measurement Conference, Vancouver, BC, Canada (November 2014)*
- Man vs. Machine: Practical Adversarial Detection of Malicious Crowdsourcing Workers.  
*Microsoft Membership PM R&D Team, Redmond, WA (September 2014)*
- Man vs. Machine: Practical Adversarial Detection of Malicious Crowdsourcing Workers.  
*Microsoft Azure Data Science and Security Team, Redmond, WA (August 2014)*
- Man vs. Machine: Practical Adversarial Detection of Malicious Crowdsourcing Workers.  
*The 23rd USENIX Security Symposium, San Diego, CA (August 2014)*
- Man vs. Machine: Practical Adversarial Detection of Malicious Crowdsourcing Workers.  
*UW-MSR Summer Institute, Seattle, WA (July 2014)*
- Wisdom in the Social Crowd: An Analysis of Quora.  
*The 22nd International World Wide Web Conference, Rio de Janeiro, Brazil (May 2013)*
- You are How You Click: Clickstream Analysis for Sybil Detection.  
*The 22nd USENIX Security Symposium, Washington, DC, WA (August 2013)*
- You are How You Click: Clickstream Analysis for Sybil Detection.  
*Security Team of Renren Inc., Beijing, China (May 2013)*
- Social Turing Tests: Crowdsourcing Sybil Detection.  
*The 20th Annual Network & Distributed System Security Symposium, San Diego, CA (February 2013)*
- Fighting Fire with Fire: Crowdsourcing Security Threats and Solutions on the Social Web.  
*AT&T Security Research Center, Middletown, NJ (January 2013)*
- Serf and Turf: Crowdturfing for Fun and Profit.  
*The 21st International World Wide Web Conference, Lyon, France (April 2012)*

## CODE AND DATA RELEASE

- **[BODMAS Malware Data]** A dataset containing timestamped malware samples and well-curated family information: 57,293 malware samples and 77,142 benign samples collected from 2019 to 2020 (581 families), 2021  
<https://whyisyoungh.github.io/BODMAS/>
- **[CADE]** A tool to detect concept drift samples for security applications, 2021  
<https://github.com/whyisyoungh/CADE>
- **[GPS Anti-spoofing Tool]** A mobile app to detect GPS spoofing using off-the-shelf chipsets, 2021  
<https://github.com/shinan6/robust-gps-antispoofing>
- **[VirusTotal Data]** Dataset of the daily snapshots of VirusTotal labels for 14,000 files over a year, 2020  
<https://sfzhu93.github.io/projects/vt/index.html>
- **[VPA Data]** Dataset of sensitive commands for Amazon Alexa and Google Homes, 2020  
<https://github.com/faysalhossain2007/Read-Between-the-Lines-An-Empirical-Measurement-of-Sensitive-Applications-of-Voice-Personal-Assista>
- **[PCI-Checker]** A light-weight vulnerability scanner for e-commerce websites, 2019  
<https://github.com/sazzad114/pci-checker>
- **[BuggyCart]** A customizable testbed to assess the performance of PCI vulnerability scanners, 2019  
<https://github.com/sazzad114/buggycart>
- **[VIEM]** An NLP tool to extract vulnerability information from unstructured vulnerability reports, 2019  
[https://github.com/pinkymm/inconsistency\\_detection](https://github.com/pinkymm/inconsistency_detection)
- **[AdvPhyML]** The implementation of a method to generate physical domain adversarial examples, 2019  
<https://github.com/stevevkjan/Digital2Physical>
- **[LEMNA]** A machine learning explanation system to security applications, 2018  
<https://github.com/Henrygwb/Explaining-DL>
- **[SquatPhish]** A collection of toolkits to detect phishing websites that have squatting domains, 2018  
<https://github.com/SquatPhish>
- **[MemoryVul Data]** 368 memory corruption vulnerabilities with PoC exploits and docker images, 2018  
<https://github.com/VulnReproduction/LinuxFlaw>
- **[Password Data]** A collection of 107 password datasets (61.5 million passwords), 2018  
<https://gangw.cs.illinois.edu/pass.html>
- **[De-anonyLoc]** A toolkit of 7 de-anonymization algorithms for location data. 2018  
<https://github.com/whd14/De-anonymization-of-Mobility-Trajectories>
- **[Clickstream Viz]** A ML tool to cluster and visualize clickstreams for user behavior analysis, 2016  
<http://cs.ucsb.edu/~xyzhang/clickstream/index.html>

## TEACHING

- CS 463: Computer Security II, *UIUC*, Instructor, Fall 2021.
- CS 463: Computer Security II, *UIUC*, Instructor, Spring 2021.
- CS 598: Machine Learning for Sys, Networks, and Security, *UIUC*, Instructor, Fall 2020.
- CS 463: Computer Security II, *UIUC*, Instructor, Spring 2020.
- CS 598: Machine Learning for Sys, Networks, and Security, *UIUC*, Instructor, Fall 2019.
- CS 4264: Principles of Computer Security, *Virginia Tech*, Instructor, Spring 2019.
- CS 4984: Web Applications Security, *Virginia Tech*, Instructor, Fall 2018.
- CS 4264: Principles of Computer Security, *Virginia Tech*, Instructor, Spring 2018.
- CS 6604: Applied Machine Learning in Security, *Virginia Tech*, Instructor, Fall 2017.
- CS 4264: Principles of Computer Security, *Virginia Tech*, Instructor, Fall 2016.
- CS 290F: Smartphone-centric Systems and Applications, *UCSB*, Guest Lecturer, Fall 2015.
- CS 276: Graduate Networking, *UCSB*, Teaching Assistant, Fall 2011.
- CS 176B: Network Computing, *UCSB*, Teaching Assistant, Spring 2011.
- CS 64: Computer Organization, *UCSB*, Teaching Assistant, Winter 2011.
- CS 40: Foundations of Computer Science, *UCSB*, Teaching Assistant, Fall 2010.

## INTERNAL SERVICES

- Undergraduate Student Awards Committee, *UIUC*, 2021-2022
- FAA Committee (Grad Admission), *UIUC*, 2021-2022

- Undergraduate Student Awards Committee, *UIUC*, 2020-2021
- FAA Committee (Grad Admission), *UIUC*, 2020-2021
- Security Analysis Team for the Safer Illinois App, *UIUC*, 2020
- Panelist: Research Experience for Undergraduates (REU) program (“Graduate School”), *UIUC*, 2020
- Graduate Studies Committee, *UIUC*, 2019-2020
- Undergraduate Student Awards Committee, *UIUC*, 2019-2020
- Graduate Admission Committee, *Virginia Tech*, 2018-2019
- PhD Qualifier in Systems, Networking, and Cybersecurity (SNC) Committee, *Virginia Tech*, 2018-2019
- Graduate Admission Committee, *Virginia Tech*, 2017-2018
- PhD Qualifier in Systems, Networking, and Cybersecurity (SNC) Committee, *Virginia Tech*, 2017-2018
- Faculty Judge for VTURCS Research Symposium, *Virginia Tech*, 2017

## PROFESSIONAL TRAINING

- The Collins Scholars Program, *UIUC* (2019-2021)

## ADVISING

I am the primary advisor of the following students:

### Ph.D. Students

- Margie Ruffin (2020 – Present, Co-advised with Kirill Levchenko)
  - *Alfred P. Sloan Scholar; Grainger College of Engineering SURGE Fellowship; UIUC Graduate College Fellowship; CCS '20 iMentor*
- Zhi Chen (2020 – Present)
  - *Publications: CCS '19*
- Jaron Maurice Mink (2019 – Present)
  - *NSF Graduate Research Fellowships Program (GRFP) Award.*
  - *Publications: ACSAC '20*
- Qingying Hao (2018 – Present)
  - *Publications: CCS '21, USENIX Security '21a, IEEE SP '20*
- Limin Yang (2018 – Present)
  - *Oakland Student PC '21*
  - *Publications: USENIX Security '21a, USENIX Security '20, IMC '19, USENIX Security '18b.*
- Steve T.K. Jan (2014 – 2020; on leave in 2015) → TikTok/ByteDance
  - *Intel Fellow Employee Recognition Reward '18, IEEE SP '21 Student Travel Grant*
  - *Publications: CCS' 21, USENIX Security/21b, IEEE SP'20, AAAI '19, IMC'18, CIKM '17, SDM '17, SDM '16*
  - *Dissertation: “Robustifying Machine Learning based Security Applications”*
- Hang Hu (2016 – 2020) → Google.
  - *USENIX Security '18 Student Travel Grant*
  - *Publications: USENIX Security '21b, IMWUT '20, WWW '20, AsiaCCS '19, IEEE SP '19, IMC '18, USENIX Security '18a, USENIX Security '18b*
  - *Dissertation: “Characterizing and Detecting Online Deception via Data-Driven Methods”*

### Masters Students

- Licheng Luo (2020 – Present)
- Nicholas Wang (2021 – Present)
- Rishabh Chhabra (2020 – 2021) → Amazon.
  - *Thesis: “Empirically Understanding the Global Impact of Migration to DNS-over-HTTPS”*
- Tianrui Hu (2018 – 2020) → PhD at Northeastern.
  - *Thesis: “Detecting Bots using Stream-based System with Data Synthesis”*
- Chao Xu (2018 – 2020) → ByteDance.
  - *Thesis: “Defending Against GPS Spoofing by Analyzing Visual Cues”*
- Jiamin Wang (2018 – 2020) → TSMC → Amazon.
  - *Thesis: “Measuring the Functionality of Amazon Alexa and Google Home Applications”*
- Peng Peng (2017 – 2019) → Palo Alto Networks.
  - *Thesis: “A Measurement Approach to Understanding the Data Flow of Phishing from Attacker and Defender Perspectives”*
- Xiangwen Wang (2017 – 2019) → Google.
  - *Thesis: “Empirical Analysis of User Passwords across Online Services”*

- Chun Wang (2016 – 2018) → IBM.
  - Thesis: “Photo-based Vendor Re-identification on Darknet Marketplaces using Deep Neural Networks”

### **Undergraduate Students**

- Kevin Tu (2021 – Present)
- JT Kirages (2021 – Present)
- Saidivya Ashok (2020 – 2021) → MS at CMU
  - Senior Thesis: “An Analysis of Screen Reader Users’ Susceptibility to Phishing” (UIUC Senior Award)
- Nicholas Wang (2020 – Present) → MS at UIUC
- Olivia Figueira (2020 – 2021) → PhD at UC Irvine
- Zhengdai Hu (2020 – 2021) → Google
- Shihan Lin (2018 – 2019) → PhD at Duke University
- Shinan Liu (2017 – 2019) → PhD at Univ. of Chicago
- Luke Quinn (2018 – 2019) → MITRE
- Douglas Bossart (2017 – 2019) → U.S. Army ERDC

### **High School Students**

- Megan McQueen (2015) → Yale Undergraduate
- Emily Pan (2015) → Caltech Undergraduate

I have served on the program of study committee, qual committee, and thesis committee of the following students:

### **Thesis Committee at UIUC (PhD Students)**

- [Current] Joshua Reynolds, Tanusree Sharma
- [Graduated in 2021] Natã Barbosa; Zane Ma; Dominic Seyler.
- [Graduated in 2020] Deepak Kumar.

### **Program of Study Committee at UIUC (PhD Students)**

- [2020] Margie Ruffin; Jinning Li; Muhammad Adil Inam; Nishant Kumar; James Hulett; Zhi Chen.
- [2019] Bland, Maxwell; Tzu-Bin Yan; Lecheng Zheng; Akul Goyal; Riccardo Paccagnella; Beitong Tian; Sushant Dinesh.

### **Qualification Committee at UIUC (PhD Students)**

- [2021] Akul Goyal (Qual Chair); Beitong Tian; Ruta Jawale; Sourav Das.
- [2020] Linyi Li (Qual Chair); Kyo Hyun Kim; Richard C Barber; Chaitra Niddodi.

### **Thesis Committee at Virginia Tech (PhD and MS Students)**

- [Current] Xiang Cheng (PhD); Md Salman Ahmed (PhD); Stefan Nagy (PhD); Jiameng Pu (PhD).
- [Graduated in 2020] Tianyi Li (PhD); Arnab Kumar Paul (PhD); Sazzadur Rahaman (PhD); Thomas Lux (PhD).
- [Graduated in 2019] Elaheh Raisi (PhD); Divya Ramanujachari (MS); Da Pu (MS); Xinfeng Xu (MS).
- [Graduated in 2018] Kexiong Zeng (PhD); Long Cheng (PhD); Nai-Ching Wang (PhD); Alex Hsu (MS); Zachary Burch (MS); Archi Dasgupta (MS).
- [Graduated in 2017] Wenhai Sun (PhD); Hannah Roth (MS); Alexander Kedrowitsch (MS); Noah Luther (MS).

### **Other External Thesis Committees (PhD Students)**

- [Graduated in 2021] Duc Cuong Nguyen, CISA Helmholtz Center for Information Security.