

Gang Wang

Assistant Professor of Computer Science
Virginia Tech

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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

Virginia Tech, Blacksburg, VA. Aug. 2016 – Present
Assistant Professor of Computer Science

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

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

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

RESEARCH INTERESTS

Security and Privacy; Data Mining; Internet Measurement; Human Computer Interaction; Mobile Networks;
Online Social Networks

AWARDS

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. [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.

2. **[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)*, London, UK, September 2019 (conditionally accepted).
3. **[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.
4. **[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**).
5. **[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.
6. **[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.
7. **[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**).
8. **[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)*, Singapore, October 2018.
9. **[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.
10. **[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.
11. **[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.
12. **[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.
13. **[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.
14. **[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.
15. **[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).
16. **[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.
17. **[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.

18. **[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.
19. **[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.
20. **[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.
21. **[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.
22. **[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).
23. **[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.
24. **[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.
25. **[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.
26. **[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.
27. **[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.
28. **[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.
29. **[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.
30. **[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.
31. **[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.
32. **[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.
33. **[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.

34. [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**).
35. [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.
36. [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.
37. [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.
38. [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.

Journal Articles

39. [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.
40. [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.
41. [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.
42. [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.
43. [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.
44. [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

45. [SafeConfig'17] Alexander Kedrowitsch, Danfeng Yao, **Gang Wang**, and Kirk Cameron. "A First Look: Using Linux Containers for Deceptive Honey pots." 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.
46. [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.
47. [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.
48. [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.
49. [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.

Patents

50. **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
- [WWW] The Web Conference or TheWebConf (Security and Privacy Track): 2017, 2019
- [ACSAC] Annual Computer Security Applications Conference: 2018
- [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
- [AISec] ACM Workshop on Artificial Intelligence and Security: 2016, 2017, 2018
- [CSCW] ACM Conference on Computer-Supported Cooperative Work and Social Computing: 2018
- [Oakland] IEEE Symposium on Security and Privacy (Student PC): 2016

Journal Reviewer

- [TDSC] IEEE Transactions on Dependable and Secure Computing: 2016, 2017, 2018
- [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
- [Wireless] 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": 2018, 2017

Other Services

- [NSF] National Science Foundation (NSF) Review Panel (×3): 2018
- [UNIPD] University of Padova Internal Proposal Review Panel: 2018

GRANTS

CAREER: Machine Learning Assisted Crowdsourcing for Phishing Defense.

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

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

- Role: PI; with Danfeng Yao as Co-PI;
- Total: \$500,000; Personal Share: \$400,000 (80%);
- National Science Foundation (NSF);
- 08/01/2017 to 07/31/2020.

Augmenting User-level Defense Against Email Spoofing Attacks.

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

SELECTED PRESS

My work has been covered by 230+ press articles / media interviews in the recent 8 years.

- **[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 Skills 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

- Exploitable Human Factors and Their Implications for Online Security.
Dartmouth College, Hanover, NH (05/04/2018)
- Measuring the Insecurity of Mobile Deep Links of Android.
USENIX Security Symposium (USENIX Security), Vancouver, Canada (08/18/2017)
- Identity Abuse in Mobile Social Networks and Email Systems.
Institute for Creativity, Arts, and Technology, Virginia Tech, Blacksburg, VA (03/17/2017)
- Sybil Devices in Crowdsourced Mapping Services.
Workshop on Data and Algorithmic Transparency, New York City, NY (11/19/2016)
- Human Factors in the Security of Online and Mobile Systems.
Virginia Tech CS Graduate Seminar, Blacksburg, VA (09/02/2016)
- “Will Check-in for Badges”: Understanding Bias and Misbehavior on Location-based Social Networks.
International AAAI Conference on Web and Social Media, Cologne, Germany (05/18/2016)
- Unsupervised Clickstream Clustering for User Behavior Analysis.
SIGCHI Conference on Human Factors in Computing Systems, San Jose, CA (05/09/2016)
- Attacks and Defenses in Large Online Communities.
Uber Inc., San Francisco, CA (02/01/2016)
LinkedIn Inc., Mountain View, CA (12/02/2015)
- Whispers in the Dark: Analysis of an Anonymous Social Network.
The 14th Internet Measurement Conference, Vancouver, BC, Canada (11/05/2014)
- Man vs. Machine: Practical Adversarial Detection of Malicious Crowdsourcing Workers.
Microsoft Membership PM R&D Team, Redmond, WA (09/02/2014)
Microsoft Azure Data Science and Security Team, Redmond, WA (08/27/2014)
The 23rd USENIX Security Symposium, San Diego, CA (08/20/2014)
UW-MSR Summer Institute, Seattle, WA (07/30/2014)
- Wisdom in the Social Crowd: An Analysis of Quora.
The 22nd International World Wide Web Conference, Rio de Janeiro, Brazil (05/16/2013)
- You are How You Click: Clickstream Analysis for Sybil Detection.
The 22nd USENIX Security Symposium, Washington, DC, WA (08/15/2013)
Security Team of Renren Inc., Beijing, China (03/15/2013)
- Social Turing Tests: Crowdsourcing Sybil Detection.
The 20th Annual Network & Distributed System Security Symposium, San Diego, CA (02/16/2013)
- Fighting Fire with Fire: Crowdsourcing Security Threats and Solutions on the Social Web.
AT&T Security Research Center, Middletown, NJ (01/31/2013)
- Serf and Turf: Crowdturfing for Fun and Profit.
The 21st International World Wide Web Conference, Lyon, France (04/21/2012)

TEACHING

- CS4264: Principles of Computer Security, *Virginia Tech*, Instructor, 2019.
- CS4984: Web Applications Security, *Virginia Tech*, Instructor, 2018.
- CS4264: Principles of Computer Security, *Virginia Tech*, Instructor, 2018.
- CS6604: Applied Machine Learning in Security, *Virginia Tech*, Instructor, 2017.
- CS4264: Principles of Computer Security, *Virginia Tech*, Instructor, 2016.
- CS290F: Smartphone-centric Systems and Applications, *UCSB*, Guest Lecturer, 2016.
- CS276: Graduate Networking, *UCSB*, Teaching Assistant, 2011.
- CS176B: Network Computing, *UCSB*, Teaching Assistant, 2011.

- CS64: Computer Organization, *UCSB*, Teaching Assistant, 2011.
- CS40: Foundations of Computer Science, *UCSB*, Teaching Assistant, 2010.

ADVISING

I am the primary advisor of the following students:

Ph.D. Students

- Qingying Hao (2018)
- Limin Yang (2018)
- Chao Xu (2018)
- Peng Peng (2017)
- Hang Hu (2016)
- Steve T.K. Jan (2016)

Masters Students

- Tianrui Hu (2018)
- Jiamin Wang (2018)
- Xiangwen Wang (2017)
- Chun Wang (2016)

Undergraduate Students

- Luke Quinn (2018)
- Shihan Lin (2018)
- Douglas Bossart (2017)

High School Students

- Megan McQueen (2015)
- Emily Pan (2015)

I have served on the thesis committee of the following students:

Thesis Committee

Md Salman Ahmed (PhD); Kexiong Zeng (PhD); Stefan Nagy (PhD); Wenhai Sun (PhD); Thomas Lux (PhD); Long Cheng (PhD); Elaheh Raisi (PhD); Tianyi Li (PhD); Arnab Kumar Paul (PhD); Nai-Ching Wang (PhD); Divya Ramanujachari (MS); Alex Hsu (MS); Zachary Burch (MS); Da Pu (MS); Hannah Roth (MS); Alexander Kedrowitsch (MS); Archi Dasgupta (MS); Noah Luther (MS); Xinfeng Xu (MS).