

XiaoFeng Wang

Curriculum Vitae

Luddy Hall
700 N Woodlawn Avenue

Bloomington, IN 47408-3912
<https://homes.luddy.indiana.edu/xw7/>

EDUCATION

2004 Ph.D. Electrical and Computer Engineering
 Carnegie Mellon University

1996 M.S. Computer Science
 Shanghai Jiao Tong University

1993 B.S. Computer Science
 Nanjing University of Aeronautics and Astronautics

PROFESSIONAL EXPERIENCE

11/2017— Rudy Professor of Computer Science, Engineering and Informatics

7/2015 — Professor

7/2010 — 6/2015 Associate Professor

8/2004 — 6/2010 Assistant Professor
 School of Informatics, Computing and Engineering
 Indiana University at Bloomington

1/1997 — 8/1997 IT Specialist
 Hewlett-Packard Computer Products (Shanghai) Co.Ltd

3/1996 — 1/1997 Software Engineer
 Shanghai Venus Software co., LTD

RESEARCH LEADERSHIP & ADMINISTRATIVE EXPERIENCE

- Associate Dean for Research, Luddy School of Informatics, Computing, and Engineering, Indiana University at Bloomington, 2023 —
- Director, National Science Foundation, Center for Distributed Confidential Computing (an NSF SaTC Frontiers Project), 2022 —
 Participants: IU (Lead), CMU, Duke, OSU, Penn State, Purdue, Spelman & Yale

- Chair, ACM Special Interest Group on Security, Audit and Control (SIGSAC): July 1st, 2021 —
 - Vice Chair, ACM SIGSAC: July 1st, 2017 — June 30th, 2021
 - Director, Master of Science in Secure Computing (MSSC) at Indiana University: 2020 — 2023
 - Director, Center for System Security and Data Privacy: 2017 —
 - Co-Director, Center for Security Informatics: 2010 —
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PROFESSIONAL SERVICE

- Program Co-Chair, the ACM Conference on Computer and Communications Security (CCS'18 and CCS'19)
- Member, ACM SIGSAC Executive Committee and CCS Steering Committee
- Founding organizer (with my colleagues at IU and UCSD): iDASH Genome Privacy Challenges (www.humangenomeprivacy.org)
- Program Co-Chair, the 11th ACM Asia Conference on Computer and Communications Security (ACM AsiaCCS'16)
- Program Chair, the 11th International Conference on Security and Privacy in Communication Networks (SecureComm'15)
- Workshop Co-Chair, the 22nd ACM Conference on Computer and Communication Security (CCS'15)
- General Chair, the 13th Privacy Enhancing Technologies Symposium (PETS'13)
- Program Chair, the 7th International Workshop on Genome Privacy and Security (GenoPri'20)
- Steering committee member, International Workshop on Genome Privacy and Security (GenoPri)
- Member, PoPETs/PETS Advisory Board
- Associate Editor, ACM Transactions on Privacy and Security (TOPS), since October, 2020
- Associate Editor, IEEE Security and Privacy Magazine, since January, 2019
- Associate Editor, IEEE Transactions on Dependable and Secure Computing (TDSC), December, 2014 to February, 2022
- Area PC Chair, the IEEE Conference on Communications and Network Security (CNS'19)
- Panel Chair, the IEEE Conference on Communications and Network Security (CNS'18)

- Program committee member, the IEEE Symposium on Security and Privacy (S&P'10, 11, 12, 13, 14, 18, 19, 20, 22)
- Panelist, the IEEE Conference on Communications and Network Security (CNS'17)
- Program committee member, the USENIX Security Symposium (Security' 17, 22)
- Invited panelist, Security and Privacy Challenges in Health Informatics, the NSF SaTC PI meeting 2015.
- Program committee member, the 17th International Symposium on Research in Attacks, Intrusions and Defenses (RAID'15)
- Program committee member, the Annual Network and Distributed System Security Symposium (NDSS' 13, 14, 15, 16, 17, 21)
- Program committee member, the International World Wide Web Conference, Security and Privacy Track (WWW'09, 12, 14, 15)
- Program committee member, the ACM Symposium on Information, Computer and Communications Security (ASIACCS'12)
- Member, PET Award 2012 committee
- Program committee member, the International Conference on Distributed Computing Systems (ICDCS'10, 11)
- Chair, Local arrangement committee, CCS'11
Member, Patron and Industry Outreach, CCS'10
Chair, Regional arrangement committee, CCS'09
- Program committee member, the Workshop on Security and Privacy in Medical and Home-Care Systems 2009
- Program committee member, the International Conference on Security and Privacy in Communication Networks (SecureComm'08, 09)
- Program committee member, the ACM Conference on Computer and Communication Security (CCS'08, 10, 15, 16, 17, 20, 21, 22)
- Co-Chair, the I3P Workshop on Insider Threats in the Networked World (2008)
- Local arrangement, the 5th Midwest Security Workshop (Spring, 2008), Program chair, the Second MSW (Fall, 2006) and PC members, MSW (2006 – 2008)
- Program committee member, the Fourth International Conference on Information Systems Security (ICISS 2008)
- Program committee member, the Third International Conference on Internet Monitoring and Protection (ICIMP'08)
- Steering committee member, NSF Biomedical Informatics Workshop (2007)
- Program committee member, the Workshop on Privacy in the Electronic Society (WPES'06-08, 12)

- Program committee member, the IEEE International Symposium on Dependable Autonomic and Secure Computing (DASC'06 and '07)
- Program committee member, the 8th International Conference on Information and Communications Security (ICICS '06)
- Program committee member, the 5th International Conference on Cryptology and Network Security (CANS '06)
- Program committee member, the International Workshop on Incentive Based Computing (IBC'05 and '06)
- Program committee member, the 4th International Conference on Applied Cryptography and Network Security (ACNS'06)
- Program committee member, the 16th Annual International Symposium on Algorithms and Computation (ISAAC'05)
- Program committee member, ACM Workshop on Wireless Security 2005 (WiSe'05).
- Program committee member, the International Joint Conference on Autonomous Agents and Multi Agents Systems (AAMAS'04 and 05).
- Panelist: Attacks on and Security Measures for Ad Hoc Wireless Networks, American Association for the Advancement of Science annual Conference 2005.
- Program committee member of IEEE/ACM First International Workshop on Broadband Wireless Services and Applications (BroadWISE 2004)
- Paper reviewer for the IEEE/ACM Transactions on Networking, the ACM Transactions on Information and System Security, the IEEE Transactions on Dependable and Secure Computing, the IEEE Transactions on Parallel and Distributed Systems, International Journal of Knowledge and Information Systems, the IEEE transactions on Knowledge and Data Engineering, Electronic Commerce Research Journal, ACM Conference on Computer and Communication Security, RSA CT, IEEE INFOCOM, IEEE GLOBECOM, ACM International Conference on Information Security, Workshop on Privacy Enhancing Technologies, Conference on Security and Cryptography for Networks, The IEEE International Conference on Communications, Pacific Rim International Workshop on Multiagent Systems, Pacific Rim International Conference on Artificial Intelligence and IFIP World Computer Congress.

TEACHING EXPERIENCE

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|--------------|---|
| Fall 2005- | I430/520 and B649 "Security for Networked Systems"
(An upper-level undergraduate and graduate course)
Indiana University at Bloomington |
| Spring 2007- | I521 "Malware: Threat and Defense"
(A graduate course) |

Indiana University at Bloomington

Spring 2006- 2009

I231 "Mathematic Foundations for Cybersecurity"
(A second-year undergraduate course)
Indiana University at Bloomington

Spring 2005

I400 "Introduction to Information Security"
(A third and fourth year undergraduate course)
Indiana University at Bloomington

Spring 2002

Teaching assistant for 18440 "Internet Security"
(An upper-level undergraduate and graduate course)
Carnegie Mellon University

INTERNAL SERVICE

1. Facility Committee, Informatics (Fall 2004 – Spring 2006)
2. Faculty Hiring Committee, Informatics (Fall 2004 – Spring 2005, Fall 2008 – Spring 2009, Fall 2011)
3. Admission and Awards Committee, Computer Science (Fall 2004 –)
4. Graduate Admissions and Financial Aid Committee, Informatics (Fall 2006 – Spring 2008, Fall 2014)
5. Graduate Education Committee, Computer Science (Fall, 2010 – 2012, 2014 –)
6. Security Contact for Health Informatics Program (Spring, 2011 –)
7. Chair, Faculty Hiring Committee (security track) (Fall 2013 – Spring 2014)
8. Chair, Admission and Awards Committee, Computer Science (Fall 2014 – 2018)
9. Program Director, Security Informatics Program (2010)
10. Director, Center for Security Informatics (2010 –)
11. Program Director, Secure Computing Program at IU (2020)

IMPACTS OF MY RESEARCH

My research frequently receives the attention from the mainstream media, including CNN, MSNBC, PC World, Slashdotted, CNet News, etc. Here are the links to incomplete lists of media coverage.

NSF SaTC Frontiers Award for CDCC:

<https://news.iu.edu/stories/2022/08/iub/releases/04-nsf-cybersecurity-awards-distributed-data-user-privacy.html>

<https://beta.nsf.gov/news/nsf-announces-awards-advance-cybersecurity-efforts>

Genome Privacy Competition:

<https://www.genomeweb.com/informatics/new-community-challenge-seeks-evaluate-methods-computing-encrypted-genomic-data>

<http://www.nature.com/news/extreme-cryptography-paves-way-to-personalized-medicine-1.17174>

MassVet: <http://sit.soic.indiana.edu/en/2015/09/06/massvet-usenix/>

XARA Threats to Mac OS X and iOS, and also Android Secure Upgrading:

<http://sit.soic.indiana.edu/en/2015/09/07/xara-ccs/>

<https://luyixing.weebly.com/media-coverage.html>

Privacy in Dissemination of Human Genomic Data:

[News Release by Ontario's Information and Privacy Commissioner](#) and [BioSpace](#)

Security Analysis of Cashier-as-a-Service Systems:

<http://www.informatics.indiana.edu/xw7/record/impacts/CaaS.htm>

Sound Malware for Android Phones

<http://www.informatics.indiana.edu/xw7/record/impacts/Soundcomber.htm>

Facebook Authorization Flaw

<http://www.informatics.indiana.edu/xw7/record/impacts/Facebook.htm>

Side-Channel Information Leaks in Web Applications

<http://www.informatics.indiana.edu/xw7/record/impacts/SideChannel.htm>

Puzzle Auction

<http://www.informatics.indiana.edu/xw7/record/impacts/PuzzleAuction.htm>

HONORS

2023 AAAS Fellow: for distinguished contributions to the field of systems security and data privacy, particularly for security analysis and protection of computing systems and protection of human genomic data

2022 Best Paper Honorable Mention, the 29th ACM Conference on Computer and Communications Security (CCS): for the research on imitation adversary attacks on neural ranking models

2021 ACM Distinguished Member: for contributions to systems security and genomic privacy

2020 AMiner AI 2000 Security and Privacy Most Influential Scholars List (20th between 2010 and 2019)

2019 CSAW'19 US-Canada Applied Research Competition Winner (3rd place): for the research on the security risks of voice-controlled third-party functions for virtual personal assistant systems (Google Assistant, Amazon Alexa, etc.)

- 2019 Distinguished Paper Award, the 26th Network and Distributed System Security Symposium (NDSS): for the research on cybercrime analysis
- 2019 Distinguished Paper Award, the 26th Network and Distributed System Security Symposium (NDSS): for the research on Genomic Privacy
- 2019 IEEE Fellow (Computer Society): for contributions to system security and genomic privacy
- 2018 CSAW'18 US-Canada Applied Research Finalist: for the research on iOS side-channel analysis (which led to the change of the iOS kernel)
- 2017 James H. Rudy Professorship, Indiana University
- 2016 Best Paper Award in Applied Cyber Security Research, 3rd Place, CSAW'16 (NYU-Poly Cyber Security Awareness Week): for the work on cyber threat intelligence gathering
- 2014 Best Paper Award in Applied Cyber Security Research, 3rd Place, CSAW'14 (NYU-Poly Cyber Security Awareness Week): for the work on security risks in Android customization
- 2014 [Third place in National Security Innovation Competition](#): for the work on Android secure upgrading
- 2013 [Finalist](#) for the Best Applied Security Paper Award, CSAW'13 (NYU-Poly Cyber Security Awareness Week): for the work on dedicated hosts on malicious web infrastructures
- 2011 Award for Outstanding Research in Privacy Enhancing Technologies ([the PET Award](#)): for my research on Genomic Privacy
- 2011 PET Award runner-up: for my research on side-channel information leaks in web applications
- 2011 Best Practical Paper Award, the 32nd IEEE Symposium on Security and Privacy: for my research on logic flaws in hybrid web applications
- 2006 Fast-track submission to the ACM Transactions on Information System Security as one of the best papers of the ACM Conference on Computer and Communications Security 2006: for my work on malware detection
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SELECTED INVITED TALKS

- 2021 Invited Talk at the UK Security and Privacy Seminar
- 2021 Invited Talk at Institute for Assured Autonomy at Johns Hopkins University

2021 Distinguished Cybersecurity Lecture, Computer Science and Engineering, Ohio State University

2020 Keynote for 14th International Conference on Network and System Security, Melbourne, Australia

2019 Keynote for SIGSAC at ACM Turing Celebration Conference, China

2018 Keynote at the 3rd Singapore Cybersecurity R&D Conference (SG-CRC'18)

2018 Keynote at the 6th Midwest Security Workshop

2018 Keynote at the 1st Riverside Security and Privacy Workshop

2018 Keynote at the SRC Forum on Smart City

2018 Invited Talk at the 13th ACM Asia Conference on Computer and Communications Security (AsiaCCS'18)

2016 Keynote at the 10th Central Area networking and Security Workshop (CANSec'16).

2016 Invited seminar, Chinese University of Hong Kong

2016 Seminar talk, Northwestern University

2016 Seminar talk, University of Southern California

2015 Seminar, Northeastern University

2014 TRUST Security Seminar, University of California, Berkeley

2014 Invited talk. Narus Inc.

2014 Seminar talk. Purdue University

2013 Seminar talk. University of Maryland at College Park

2013 Seminar talk. University of Texas at Austin

2013 Invited talk. Chinese Academy of Sciences, China

2012 Invited talk. Microsoft Faculty Summit

2012 Invited talk. Computer Science Center, Shangdong Academy of Sciences, China

2012 Invited talk. Computer Science, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

2012 Seminar talk. Computer Science, University of Illinois at Urbana-Champaign

2011 Invited talk. IBM T. J. Watson Research Center

2011 Seminar talk. CyLab, Carnegie Mellon University

2011 Seminar talk. Computer Science Department, North Carolina State University

2010 CERIAS seminar talk, Purdue University.

2010 IPAM Workshop on Statistical and Learning- Theoretic Challenges in Data Privacy

2009 Invited talk. Microsoft Research Asia.

2009 CERIAS seminar, Purdue University.

2008 Seminar talk. Computer Science Department, North Carolina State University.

2008 Seminar talk. Computer Science Department, Indiana University and Purdue University at Indianapolis.

2005 Panel: Attacks on and Security Measures for Ad Hoc Wireless Networks, American Association for the Advancement of Science annual Conference.

2002 Invited talk. Workshop on Multi-Agent Learning: Theory and Practice.

CURRENT AND PAST GRANTS

PI (Lead PI of multi-institutional projects + IU PI): \$22.7 million

Total (Excluding internal grant total & projects with IU shares <10%): \$25.5 million

Personal Share: around \$10 million

- NSF-CNS-2207231: “Collaborative Proposals: SaTC: Frontiers: Center for Distributed Confidential Computing (CDCC)”
Role: Lead PI
Amount: \$9,000,000 (IU share: \$2,940,000)
Time: From 10/01/2022 to 9/31/2027
- NSF-CNS-2154199: “Collaborative Research: SaTC: CORE: Medium: Audacity of Exploration: Toward Automated Discovery of Security Flaws in Networked Systems through Intelligent Documentation Analysis”
Role: Lead PI
Amount: \$1,200,000 (IU share: \$550,000)
Time: From 7/01/2022 to 6/30/2026
- ARO-IARPA TrojAI (Competing Renewal), part of the project led by Peraton Labs
Role: IU PI (with Haixu Tang)
Amount: \$1,133, 213 (IU share)
Time: From 10/31/22 – 10/30/24
- Subcontract from NIH CEGS: “Center for Admixture Science and Technology”,
Role: IU Co-PI
Amount: about \$500,000
Time: 2021- 2026
- NSF-CCF-2124225: “FMitF: Track II: Usability, Scalability, and Deployment Improvement of VerioT”,
Role: Co-PI
Amount: \$99,983
Time: From 7/01/2021 to 12/31/2022
- ONR Navy ROTC Cybersecurity Training Program

Role: Co-PI
Amount: \$250,000
Time: From 8/01/2020 to 7/31/2021

- ARO-IARPA TrojAI: “Statistical Methods for Backdoor Detection in Deep Neural Networks”, part of the Project Illiad of Perspecta Labs
Role: PI (with Haixu Tang)
Amount: \$704,980 (IU share)
Time: From 7/30/20 to 10/31/22
- NIH R01 (R01HG010798): “Secure and Privacy-preserving Genome-wide and Phenome-wide Association Studies via Intel Software Guard Extensions (SGX)”
Role: Lead PI
Amount: \$1,493,069
Time: From 08/09/2019 to 05/31/2023
(Subcontract to CMU: \$327,610)
- NSF-CNS-1801432: “SaTC: CORE: Medium: Collaborative: Understanding and Discovering Illicit Online Business Through Automatic Analysis of Online Text Traces”
Role: Lead PI
Amount: \$1,200,000 (IU share: \$900,000)
Time: From 9/01/2018 to 8/31/2023
- NSF-CNS-1838083: “BIGDATA: IA: Enabling Large-Scale, Privacy-Preserving Genomic Computing with a Hardware-Assisted Secure Big-Data Analytics Framework”
Role: Lead PI
Amount: \$1,000,000
Time: From 1/01/2019 to 12/31/2022
- The Precision Health Initiative. Indiana University Grant Challenges Initiative
Role: Participant
Amount for the project involved: \$200,000
Time: From 9/01/16 to 9/30/22
- NIH U01 (1U01EB023685): “Encryption Methods and Software for Privacy-Preserving Analysis of Biomedical Data”
Role: MPI (one of the two PIs on the project)
Amount: \$1,395,515
Time: From 9/30/2016 to 6/30/2020
(Subcontract to UCSD: \$453,137)
- NSF-CNS-1618493: “TWC: Small: Safeguarding Mobile Cloud Services: New Challenges and Solutions”
Role: Sole PI

Amount: \$499,968
Time: From 9/01/2016 to 8/31/2019

- Army Research Office: “How to Compose Security Protection for Third-Party Applications”
Role: PI
Amount: \$550,000
Time: From 3/01/2016 to 2/28/2019
(Subcontract to Purdue: \$252,999)
- Gift Grant from Samsung Research
Role: Sole PI
Amount: \$50,000
- NSF-CNS-1527141: “TWC: Small: Understanding and Mitigating the Security Hazards of Mobile Fragmentation”
Role: Sole PI
Amount: \$498,897
Time: From 10/01/2015 to 9/30/2018
- NSF-CNS-1408874: “TWC: Medium: Collaborative: Broker Leads for Privacy-Preserving Discovery in Health Information Exchange”
Role: IU PI (the project is led by UIUC)
Amount: \$360,000 (total \$1.05 million)
Time: From 9/01/2014 to 8/31/2018
- NIH R01 (1R01HG007078): “Privacy Preserving Technologies for Human Genome Data Analysis and Dissemination”
Role: Lead PI
Amount: \$900,000
Time: From 9/23/2013 to 6/30/2016
(Subcontract to UCSD: \$272,025)
- NSF-CNS-1223495: “TWC: Small: Secure Data-Intensive Computing on Hybrid Clouds”
Role: PI
Amount: \$500,000
Time: From 9/01/2012 to 8/31/2015
- NSF-CNS-1223477: “TWC: Small: Knowing Your Enemy: Understanding and Counteracting Web Malvertising”
Role: Sole PI
Amount: \$478,160
Time: From 9/01/2012 to 8/31/2015

- NSF-CNS-1117106: "TC: Small: Plugging Logic Loopholes in Hybrid Web Applications to Secure Web Commerce"
 Role: Sole PI
 Amount: \$499,987
 Time: From 9/01/2011 to 8/31/2014
- NSF-CNS-1017782: "TC: Small: Reining in Side-Channel Information Leaks in the Software-as-a-Service Era"
 Role: Sole PI
 Amount: \$494,110
 Time: From 9/01/2010 to 8/31/2014
- Gift Grant from Microsoft Research
 Role: Sole PI
 Amount: \$10,000
- NSF-CNS-0716292: "CT-ISG: Automatic Generation of Vaccine Exploits to Protect Commodity Software"
 Role: Sole PI
 Amount: \$320,000
 REU Supplemental Award: \$19,200
 Time: From 9/01/2007 to 8/31/2011
- AFRL SBIR Phase III, Net-Centric Sensor Grids, FA8650-09-D-1639: "Advanced Cloud Computing Technology for Sensor Grids"
 Role: Co-PI
 Amount: \$726,000
 Time: From 7/1/2009 to 6/30/2010
- CACR Internal Grant (Gift from the Lilly Endowment Inc.) "Evaluation and Mitigation of Privacy Risks in Human Genome Research"
 Role: PI
 Amount: \$49,901.40
 Time: From 7/01/2009 to 6/30/2010
- I3P/DHS: "Mitigating Insider Threat with Incentives" (IU part of the project "Human Behavior, Insider Threat and Awareness")
 Role: PI
 Amount: \$370,233.63
 Time: From 4/01/2007 to 7/31/2009
- NSF-IIS-064621:"NSF Frontiers in Health Information Delivery Workshop"
 Role: Co-PI
 Amount: \$99,920
 Time: From 10/01/2006 to 10/31/2007

- NSF-IIS-0549313: "A Test-bed for Personalized, Privacy-preserving and High Quality Health Information Delivery"
Role: Co-PI
Amount: \$100,000
Time: From 09/15/2005 to 08/31/2007
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PRESENTATIONS AT INDUSTRY CONFERENCES

- 2016 "Discovering and Exploiting Novel Security Vulnerabilities in Apple Zeroconf". Black Hat USA (Presented by L. Xing and X. Bai)
- 2016 "Dangerous Hare: Hanging Attribute References Hazards Due to Vendor Customization". Black Hat USA (Presented by N. Zhang)
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PATENTS

1. Y. Huang, X. Wang, H. Tang and X. Wang, "Privacy-Preserving Similar Patient Query Systems and Methods". US15682240
 2. X. Wang, K. Yuan, X. Liao and R. Beyah, "Systems and Methods for Detection of Infected Websites". US10880330
 3. X. Wang, K. Yuan, X. Zhou, M. Naveed, S. Demetriou, C. Gunter. "External Resource Control of Mobile Devices". US10685142
 4. L. Xing and X. Wang, "Detection of Pileup Vulnerabilities in Mobile Operating Systems". US9386027 B2
 5. X. Wang, H. Tang, Y. Chen and B. Peng, "Secure and Scalable Mapping of Human Sequencing Reads on Hybrid Clouds". US9276911
 6. Y. Xie, F. Yu, Z. Li and X. Wang, "Determining Legitimate and Malicious Advertisements Using Advertising Delivery Sequences". US20130339158 A1
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RESEARCH INTERESTS

Confidential Computing, AI Security, Carrier Network Security, Cybercrimes, IoT and Mobile Security, Healthcare Security and Privacy, Cloud and Web Security, Game-Theoretic Incentive Engineering

PUBLICATIONS

I am considered to be a top author in system security during the past 20 years according to [system security circus](#) (Eurecom), [an overview of system circus](#) (EPFL) and [CSRankings](#)

1. S. Tang, X. Mi, Y. Li, X. Wang and K. Chen, 2022: "Clues in Tweets: Twitter-Guided Discovery and Analysis of SMS Spam". In Proceedings of the 29th ACM Conference on Computer and Communications Security (CCS)
2. H. Liu, Z. Yu, M. Zha, X. Wang, W. Yeoh, Y. Vorobeychik and N. Zhang, 2022: "When Evil Calls: Targeted Adversarial Voice over IP-Telephony Network". In Proceedings of the 29th ACM Conference on Computer and Communications Security (CCS)
3. J. Liu, Y. Kang, D. Tang, K. Song, C. Sun, X. Wang, W. Lu and X. Liu, 2022: "Order-Disorder: Imitation Adversarial Attacks for Black-box Neural Ranking Models". In Proceedings of the 29th ACM Conference on Computer and Communications Security (CCS)
4. Y. Chen, D. Tang, Y. Yao, M. Zha, X. Wang and X. Liu, 2022: "Seeing the Forest for the Trees: Understanding Security Hazards in the 3GPP Ecosystem through Intelligent Analysis on Change Requests". In Proceedings of the 31st USENIX Security Symposium (Security)
5. Z. Li, W. Liu, H. Chen, X. Wang, X. Liao, L. Xing, M. Zha, H. Jin and D. Zou, 2022: "Robbery on DevOps: Understanding and Mitigating Illicit Cryptomining on Continuous Integration Service Platforms". In Proceedings of the 43rd IEEE Symposium on Security and Privacy (S&P)
6. P. Wang, Z. Lin, X. Liao and X. Wang, 2022: "Demystifying Local Business Search Poisoning for Illicit Drug Promotion", In Proceedings of 29th Annual Network and Distributed System Security Symposium (NDSS)
7. M. Zhang, J. Wang, Y. Nan, X. Wang, Y. Zhang and Z. Yang, 2022: "Hazard Integrated: Understanding Security Risks in App Extensions to Team Chat Systems", In Proceedings of 29th Annual Network and Distributed System Security Symposium (NDSS)
8. Y. Chen, J. Zhang, X. Yuan, S. Zhang, K. Chen, X. Wang and S. Guo, 2022: "SoK: A Modularized Approach to Study the Security of Automatic Speech Recognition Systems". ACM Transactions on Privacy and Security (TOPS), 25(3): 17:1- 17:31.
9. T. Chen, Z. Li, X. Luo, X. Wang, T. Wang, Z. He, K. Fang, Y. Zhang, H. Zhu, H. Li, Y. Cheng and X. Zhang, 2022: "SigRec: Automatic Recovery of Function Signatures in Smart Contracts". IEEE Transactions on Software Engineering. 48(8): 3066-3086.
10. T. Kuo, X. Jiang, H. Tang, X. Wang, A. Harmaci, M. Kim, K. Post, D. Bu, T. Bath, J. Kim, W. Liu, H. Chen and L. Ohno-Machado, 2022: "The Evolving Privacy and Security Concerns for Genomic Data Analysis and Sharing as Observed from the iDASH Competition". Journal of the American Medical Informatics Association (JAMIA).
11. W. Wang, W. Liu, H. Chen, X. Wang, H. Tian and D. Lin, 2021: "Trust Beyond Border: Lightweight, Verifiable User Isolation for Protecting In-Enclave Services". IEEE Transactions on Dependable and Secure Computing (TDSC).
12. D. Seyler, W. Liu, X. Wang and C. Zhai, 2021: "Towards Dark Jargon Interpretation in Underground Forums". In Proceedings of the 43rd annual BCS-IRSG European Conference on Information Retrieval (ECIR).
13. W. Liu, W. Wang, H. Chen, X. Wang, Y. Liu, K. Chen, X. Wang, Q. Shen, Y. Chen and H. Tang, 2021: "Practical and Efficient in-Enclave Verification of Privacy Compliance". In Proceedings of the 51st Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN).
14. D. Seyler, W. Liu, Y. Zhang, X. Wang, C. Zhai, 2021: "DarkJargon.net: A Platform for Understanding Underground Conversation with Latent Meaning". In Proceedings of the 44th

International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR).

15. Y. Jia, B. Yuan, L. Xing, D. Zhao, Y. Zhang, X. Wang, Y. Liu, K. Zheng, P. Crnjak, Y. Zhang, D. Zou and H. Jin, 2021: “Who's In Control? On Security Risks of Disjointed IoT Device Management Channels”. In Proceedings of the 28th ACM Conference on Computer and Communications Security (CCS)
16. C. Widanage, W. Liu, J. Li, H. Chen, X. Wang, H. Tang and J. Fox, 2021: “HySec-Flow: Privacy-Preserving Genomic Computing with SGX-based Big-Data Analytics Framework”. In Proceedings of the 14th IEEE International Conference on Cloud Computing (CLOUD).
17. Y. Lee, X. Wang, X. Liao and X. Wang, 2021: “Understanding Illicit UI in iOS Apps Through Hidden UI Analysis”. IEEE Transactions on Dependable and Secure Computing (TDSC), 18(5): 2390-2402.
18. J. Wang, Y. Xiao, X. Wang, Y. Nan, L. Xing, X. Liao, J. Dong, N. Serrano, H. Lu, X. Wang, Y. Zhang, 2021: “Understanding Malicious Cross-library Data Harvesting on Android”. In Proceedings of the 30th USENIX Security Symposium (Security)
19. B. Liang, H. Li, M. Su, X. Li, W. Shi and X. Wang, 2021: “Detecting Adversarial Image Examples in Deep Neural Networks with Adaptive Noise Reduction”. IEEE Transactions on Dependable and Secure Computing (TDSC), 18(1): 72-85.
20. D. Bu, X. Wang and H. Tang, 2021: “Haplotype-based membership inference from summary genomic data”. Bioinformatics, Volume 37, Issue Supplement_1, July 2021.
21. Y. Chen, Y. Yao, X. Wang, D. Xu, C. Yue, X. Liu, K. Chen, H. Tang and B. Liu, 2021 "Bookworm Game: Automatic Discovery of LTE Vulnerabilities Through Documentation Analysis". In Proceedings of the 42nd IEEE Symposium on Security and Privacy (S&P)
22. L. Su, X. Shen, X. Du, X. Liao, X. Wang, L. Xing and B. Liu, 2021 “Evil Under the Sun: Understanding and Discovering Attacks on Ethereum Decentralized Applications”, In Proceedings of the 30th USENIX Security Symposium (Security)
23. X. Mi, S. Tang, Z. Li, X. Liao, F. Qian and X. Wang, 2021 “Your Phone is My Proxy: Detecting and Understanding Mobile Proxy Networks”, In Proceedings of the 28th Annual Network and Distributed System Security Symposium (NDSS)
24. K. Li, J. Chen, X. Liu, Y. Tang, X. Wang and X. Luo, 2021 “As Strong As Its Weakest Link: How to Break Blockchain DApps at RPC Service”, In Proceedings of the 28th Annual Network and Distributed System Security Symposium (NDSS)
25. N. Dokmai, C. Kockan, K. Zhu, X. Wang, C. Sahinalp and H. Cho, 2021 “Privacy-Preserving Genotype Imputation in a Trusted Execution Environment”, In Proceedings of the 25th International Conference on Research in Computational Molecular Biology (RECOMB)
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MENTORING

Since 2004, I have graduated 16 PhD students. Also, I unofficially advised a group of students from other institutions, including UIUC, Georgia Tech etc. Here is the information for those who finished their programs or PostDoc studies.

PHD Students Graduated from IU:

- Debin Liu (co-advised with Jean Camp): graduated in 2011, first job at PayPal, now founder of a Chinese Startup
- Rui Wang: graduated in 2013, first job at Microsoft Research, now with Google
- Kehuan Zhang: graduated in 2012, first job at Chinese University at Hong Kong and now tenured associate professor there
- Zhou Li: graduated in 2013, first job at EMC RSA Lab, now assistant professor at UC Irvine (**Winner of NSF Career Award**)
- Xiaoyong Zhou: graduated in 2014, first job at Samsung Research America, now with Google
- Yangyi Chen: graduated in 2015, first job at Google
- Yongan Zhao (co-advised with Haixu Tang): graduated at 2016, first job at Seven Bridge Genomics
- Luyi Xing: graduated in 2017, first job at Amazon, now assistant professor at IU (**Winner of NSF Career Award**)
- Sumayah Alrwais: graduated in 2017, first job at King Saudi University (assistant professor)
- Nan Zhang: graduated in 2018, first job at Facebook
- Kan Yuan: graduated in 2018, first job at Facebook
- Peter Yeonjoon Lee: graduated in 2019, first job at Hanyang University, South Korea (assistant professor)
- Xianghang Mi: graduated in 2020, first job at Facebook, now assistant professor at the University at Buffalo
- Eihal Alowaisheq: graduated in 2020, first job at King Saudi University (assistant professor)
- Peng Wang: graduated in 2020, first job at Microsoft
- Xueqiang Wang: graduated in 2020, first job at Amazon, and now assistant professor at University of Central Florida

Unofficially Advised PHD Students Graduated from Other Schools:

- Muhammad Naveed (UIUC, advised by Carl Gunter): graduated in 2016, first job at University of Southern California (assistant professor)
- Xiaojing Liao (Georgia Tech, advised by Raheem Beyah): graduated in 2017, first job at William and Mary College (assistant professor), now assistant professor at IU
- Xiaolong Bai (Tsinghua University): graduated in 2017, first job at Alibaba
- Tongxin Li (Peking University): graduated in 2018, first job at Baidu USA, now with Google

To a lesser extent, I have also advised the following students:

- Vincent Bindschaedler (UIUC, advised by Carl Gunter): graduated in 2018, first job at the University of Florida (assistant professor)
- Soteris Demetriou (UIUC, advised by Carl Gunter): graduated in 2018, first job at Imperial College London (assistant professor)

PAST POSTDOC Fellows:

- Wenhao Wang: 2016 to 2018, now associate professor at Chinese Academy of Sciences
- Kai Chen: from 2014 to 2015, now full professor at Chinese Academy of Science
- Zhuwei Li: from 2005 to 2008, now principal software engineering manager at Microsoft