CURRICULUM VITAE

Dinghao Wu

Contact Information

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Research Interests

Cybersecurity, Artificial Intelligence, Formal Methods, Programming Languages, and Software Engineering.

Education

Princeton University, Ph.D., Computer Science, 2005.
Ph.D. Dissertation: *Interfacing Compilers, Proof Checkers, and Proofs for Foundational Proof-Carrying Code.* (Advisor: Andrew W. Appel)

Princeton University, M.A., Computer Science, 2002.

Nanjing University, M.E., Computer Software and Theory, 1999.
Thesis: *A State-Space Based Approach to the Specification and Verification of Hybrid Systems and Its Axiomatic Basis.* (Advisor: Jian Lü)

Nanjing University of Chemical Technology, B.E., Chemical Engineering, 1996.
Thesis: *Numerical Simulation of Free Turbulent Jets.* (Advisor: Daiqing Zhao)

Appointments

College of Information Sciences & Technology, Pennsylvania State University, University Park.
Dewey Walker Professor, since 2023;
Professor, since 2021;
Interim Professor-in-charge, Cybersecurity area, Fall 2022;
Associate Professor, 2017–2021;
PNC Technologies Career Development Professorship, 2017–2020;
Institute for Computational and Data Sciences (ICDS) Faculty Associate, 2019–present;
Institute for CyberScience (ICS) Faculty Associate, 2017–2019;
Assistant Professor, 2012–2017;
Senior Lecturer and Research Scientist, 2009–2012.

École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland.
Visiting Professor, 2018–2019.

Center for Software Excellence (Test Effectiveness Team and Program Analysis Team) & Windows Azure Division, Microsoft Corporation. Redmond, WA. Research engineer, 2005–2009.

Microsoft Research, Redmond, WA. Research intern in the Software Productivity Tools (SPT) group, summers 2003, 2004.

Research Grants

1. *Software Cruising for System Security*, Dinghao Wu (PI) and Peng Liu, National Science Foundation (NSF) CNS-1223710, $499,745, 2012–2016.

2. *Towards Secure Lean Software*, Dinghao Wu (PI) and Peng Liu, Office of Naval Research (ONR) N00014-13-1-0175, $423,520, 2013–2017.

3. *Towards Obfuscation-Resilient Software Plagiarism Detection*, Sencun Zhu, Dinghao Wu (Co-PI), and Peng Liu, National Science Foundation (NSF) CCF-1320605, $500,000, 2013–2017.

4. *Greater Philadelphia Innovation Cluster for Energy Efficient Buildings (GPIC)*, Henry C. Foley (PI, 2011-2013), Martha Krebs (PI, 2013-2016), Chimay J. Anumba, John Messner, William P. Bahnfleth, Ali M. Memari, Richard G. Mistrick, Kevin W. Houser, Jelena Srebric, Stephen J. Treado, David R. Riley, Jeffrey Brownson, Seth A. Blumsack, Ralph A. Oliva, John Yen, Daniel E. Willis, Brian A. Orland, Mallika Bose, Stuart P. Echols, Andrew N. Kleit, Arvind Rangaswamy, Martin J. Sliwinski, James Freihaut, Paul M. Hallacher, Dinghao Wu (Co-PI), Robert M. Leicht. U.S. Department of Energy (DOE), National Energy Technology Laboratory (NETL), DE-EE0004261, $129 million, 2011–2016.

5. *A Model Checking Approach to Counter-acting of the Dynamics of Infection Propagation over Networks*, Dinghao Wu (PI), Vasant Honavar, and John Yen, College of Information Sciences and Technology, Penn State University, $9,499.00, 2014–2015.

6. *An Intelligent Adaptive Network Defense Architecture*, Dinghao Wu (PI), The Penn State Fund for Innovation. $73,556.00, 2015–2016.

7. *Secure Lean Binary Code*, Dinghao Wu (PI) and Peng Liu, Office of Naval Research (ONR) N00014-16-1-2265, $504,930, 2016–2019.

8. *Reverse Engineering Based Software Diversification for Cyber Fault Tolerance*, Dinghao Wu (PI), Office of Naval Research (ONR) N00014-16-1-2912, $509,378, 2016–2019.

9. *CAREER: Advanced Trace-oriented Binary Code Analysis*, Dinghao Wu (PI), National Science Foundation (NSF) CNS-1652790, $494,703, 2017–2022.

10. *A New Direction for Software Reverse Engineering and Binary Code Retrofitting*, Dinghao Wu (PI), Office of Naval Research (ONR) N00014-17-1-2894, $3,568,941, 2017–2022.

11. *NVIDIA GPU Grant*. Two Titan Xp GPU. 2018–2019.

12. *Workshop on Forming an Ecosystem around Software Transformationa*, Dinghao Wu (PI), Office of Naval Research (ONR) N00014-18-1-2895, $10,000, 2018–2020.

13. *Turning Attacks into Protection: Social Media Privacy Protection Using Adversarial Attacks*, Dinghao Wu (PI), Center for Security Research and Education (CSRE) Open Topic Seed Grant Award, The Pennsylvania State University, $30,197, 2020–2021.

14. *Scalable Near-Real-Time Identification and Characterization of Malware Behaviors Using Darknet Data*, Benjamin Hanrahan, Vasant Honavar, Peng Liu, Dinghao Wu (Co-PI), and John Yen (PI), US Department of Homeland Security (DHS) S&T Center for Accelerating Operational Efficiency (CAOE), Award Number 17STQAC00001-05-00, Arizona State University, Award Agreement number: ASUB00000367, $499,690 ($249,914 awarded so far), 2019–2021.

15. *SaTC: CORE: Small: Automatic Software Patching against Microarchitectual Attacks*, Danfeng Zhang (PI), Mahmut Kandemir, Gang Tan, and Dinghao Wu (Co-PI). National Science Foundation (NSF), $500,000, 2020–2023.

16. *Understanding the Soundness of Control-flow Integrity*, Hong Hu and Dinghao Wu. College seed grant, Penn State University, $55,000, 2021-2022.

17. *A Community Research Infrastructure for Integrated AI-Enabled Malware and Network Data Analytics*, John Yen (PI), Vasant Honavar, Dinghao Wu (Co-PI), Michael Kallitsis, and Forough Ghahramani. National Science Foundation (NSF) CNS-2213794, $99,424, 2022-2023.

18. *NSF REU Supplement: An Interface for Binary Code Analysis*, Dinghao Wu (PI). National Science Foundation (NSF) CNS-1652790, $14,400, 2022-2023.

19. *Robot Firmware Semantic Recovery and Vulnerability Discovery*, Taegyu Kim and Dinghao Wu. College seed grant, Penn State University, $33,000, 2023-2024.

20. *DISCOVER: Digital Twin for Security and Code Verification*, Farshad Khorrami (PI), Ramesh Karri, Prashanth Krishnamurthy, Michael Locasto, Mikhail Falkovich, Dinghao Wu, and Jian Huang. US Department of Energy (DOE), Cybersecurity, Energy Security, and Emergency Response (CESER), Contract # DE-CR0000051. $4,808,792, (PSU subcontract, PI: Dinghao Wu, $519,859), 2024-2027.

Awards and Honors

College Senior Faculty Excellence in Research Award, Penn State University, 2023.
NSF CAREER Award, 2017–2023.
PNC Technologies Career Development Professorship, 2017–2020.
Best Paper Award, IEEE International Symposium on High Assurance Systems Engineering (HASE), 2019.
Top 10 finalists in CSAW Applied Research Competition, 2017.
Best Paper Award, International Conference on Software Security and Assurance, 2017.
George J. McMurtry Junior Faculty Excellence in Teaching and Learning Award, 2016.
College Junior Faculty Excellence in Research Award, Penn State University, 2014.

Awards to Advisees

Xiaoting Li, WiCyS (Women in Cybersecurity) Scholarship, 2020.
Jiexiao Sherry He, WiCyS (Women in Cybersecurity) Scholarship, 2020.
Xiao Liu, Yufei Jiang, and Dinghao Wu. Best Paper Award, IEEE International Symposium on High Assurance Systems Engineering (HASE), 2019.
Xiao Liu, CRA-W Scholarship, 2018.
Xiao Liu, Facebook Women in Research Scholarship, 2018.
Xiao Liu, Women in Cyber Security (WiCyS) Scholarship, 2018.
Shuai Wang, The College of IST Circle of Ph.D. Research Distinction Award, 2018.
Dongpeng Xu, The College of IST Circle of Ph.D. Research Distinction Award, 2018.
Xiaoting Li, WiCyS (Women in Cybersecurity) Scholarship, 2018.
Xiao Liu, Grace Hopper Scholar Award, 2017.
Xiao Liu, GREPSEC Travel Award, 2017.
Xiao Liu, Programming Languages Mentoring Workshop (PLMW) Scholarship, 2017.
Dongpeng Xu and Jiang Ming, Top 10 finalists in CSAW Applied Research Competition, 2017.
Xiao Liu, Brett Holden, and Dinghao Wu. Best Paper Award, International Conference on Software Security and Assurance, July 2017.
Xiao Liu, Bronze Medal, ACM Graduate Student Research Competition, PLDI'17, Barcelona, Spain, June 2017.
Lannan Luo and Jiang Ming, Distinguished paper award nomination, FSE 2014.
Yufei Jiang, Robert W. Graham Endowed Graduate Fellowship, Pennsylvania State University, 2011.
Jiang Ming, Jordan H. Rednor Graduate Fellowship, Pennsylvania State University, 2011.

Students Supervised

- Chu Huang (M.S., 2011). Thesis: Towards Trusted Computational Services: Result Verification Schemes for MapReduce. Co-advised with Sencun Zhu. Continued Ph.D. study at Penn State University.
- Nan Yu (M.S., 2014). Thesis: Information Interoperability Between Building Information Modeling Authoring Tools and Simulation Tools to Support Energy Efficient Building Design. Software Engineer, IBM Watson Group.
- Brett Holden (B.S., 2015). Schreyer Honors Scholar Honors Thesis: Eliza for Access Control Lists. Continued graduate study at Virginia Commonwealth University.
- Can Zhang (M.S., 2016). Thesis: A Model Checking Approach to Countering the Dynamics of Infection Propagation Over Network. Software Engineer. Deloitte.
- Xiao Liu (M.S., 2016). Thesis: Programming in Eliza. Continued graduate study at Penn State University.
- Jiang Ming (Ph.D., 2016). Dissertation: Pipelined Symbolic Taint Analysis. Tenure-Track Assistant Professor, University of Texas at Arlington.
- Pengwei Lan (M.S., 2017). Thesis: Lambda Obfuscation. Software Engineer, Deloitte.

- Yan Wang (M.S., 2017). Thesis: Obfuscation with Turing Machine. Software Engineer, Bloomberg.
- Yufei Jiang (Ph.D., 2017). Dissertation: Program Analysis Based Bloatware Mitigation and Software Customization. Software Engineer, Microsoft.
- Lawrence Wu (B.S. and M.S., 2018) Thesis: Blockchain Smart Contracts in Megacity Logistics. Communications Analyst, Federal Reserve Board.
- Pei Wang (Ph.D., 2018) Dissertation: Advanced Software Obfuscation Techniques and Applications. Senior Security Researcher, Baidu XLab.
- Dongpeng Xu (Ph.D., 2018) Dissertation: Opaque Predicate: Attack and Defense in Obfuscated Binary Code. Assistant Professor, University of New Hampshire.
- Shuai Wang (Ph.D., 2018) Dissertation: Advanced Reverse Engineering Techniques for Binary Code Security Retrofitting and Analysis. Assistant Professor, Hong Kong University of Science and Technology (HKUST). (Postdoc at ETH, 2018–19)
- Xiao Liu (Ph.D., 2019) Dissertation: Neural Program Synthesis for Compiler Fuzzing. Research Scientist, Facebook.
- Yu Fu (M.S., 2020).
- Qinkun Bao (Ph.D., 2021) Dissertation: Precise and Scalable Side-Channel Analysis. Senior Security Researcher, Baidu XLab.
- Xiaoting Li (Ph.D., 2022) Dissertation: The Good, the Bad and the Ugly: Exploring the Robustness and Applicability of Adversarial Machine Learning. Staff Research Scientist, Visa Research.
- Rui Zhong (Ph.D., 2023). Dissertation: Advanced Fuzzing Methods for Software Security. Senior Security Researcher, Palo Alto Networks.
- Rupesh Prajapati (Ph.D., 2024). Dissertation: Leveraging Large Darknets for Actionable Threat Intelligence: An Artificial Intelligence-Driven Approach. AI/ML Engineer. HomeServe USA.

Postdoctoral Scholars Supervised

- Francisco Rocha, 2018.
- Huasong Shan, 2018.
- Yuyan Bao, 2018–19.
- Xiangkun Jia, 2018–19.
- Ajay Kumara, 2019-21.
- Lingwei Chen, 2019-21.

- Amer Tahat, Assistant Research Professor, 2021-22.
- Fangtian Zhong, 2021-22.

Impacts in Society of Research Scholarship and Creative Accomplishment

- Research prototype JRed being transferred by Office of Naval Research (ONR), 2019.
- Open source release of 16 research software prototypes, 2012–2020.
- "Technology adopted in the DARPA Cyber Grand Challenge." (2016). My Uroboros work has been adopted by 2 teams among the 7 finalists in the DARPA Cyber Grand Challenge (CGC) competition!
- Press release, (2016). An Office of Naval Research (ONR) press release covered my work JRed on fighting software bloat. The press was then circulated in many online media.

Technology Transferred or Adopted in the Field

(open source research software prototypes at `https://github.com/s3team/`)

- μFUZZ: Redesign of Parallel Fuzzing using Microservice Architecture. (Yongheng Chen, Rui Zhong, Yupeng Yang, Hong Hu, Dinghao Wu, and Wenke Lee). Open Source Release. `https://github.com/s3team/muFuzz`. (2023).
- Abacus: A Tool for Precise Side-channel Analysis. (Qinkun Bao, Zihao Wang, James Larus, and Dinghao Wu). Open Source Release. `https://github.com/s3team/Abacus`. Sponsored by National Science Foundation (NSF) under the Grant No. CNS-1652790. (2021).
- Polyglot: One Engine to Fuzz 'em All: Generic Language Processor Testing with Semantic Validation. (Yongheng Chen, Rui Zhong, Hong Hu, Hangfan Zhang, Yupeng Yang, Dinghao Wu, and Wenke Lee). Open Source Release. `https://github.com/s3team/Polyglot`. (2021).
- Squirrel: Testing Database Management Systems with Language Validity and Coverage Feedback. (Rui Zhong, Yongheng Chen, Hong Hu, Hangfan Zhang, Wenke Lee, and Dinghao Wu). Open Source Release. `https://github.com/s3team/Squirrel`. (2020).
- "TortoiseFuzz: Fuzzing by Coverage Accounting for Input Prioritization," (Yanhao Wang, Xiangkun Jia, Yuwei Liu, Tiffany Bao, Dinghao Wu, and Purui Su). Open Source Release. URL: `https://github.com/TortoiseFuzz/TortoiseFuzz`. (2020).
- "AutoGrader: Automatic Grading of Programming Assignments: An Approach Based on Formal Semantics," (Xiao Liu and Dinghao Wu). Open source release of research software prototype. URL: `https://github.com/s3team/`. Sponsored by National Science Foundation (NSF) under the Grant No. CNS-1652790. (2019).
- "DeepFuzz: Automatic Generation of Syntax Valid C Programs for Fuzz Testing," (Xiao Liu and Dinghao Wu). Open Source Release. URL: `https://github.com/s3team/`. Sponsored by National Science Foundation (NSF) under the Grant No. CNS-1652790. (2019).

- "Regex-Verifier: A Lightweight Framework for Regex Verification," (Xiao Liu, Yufei Jiang, and Dinghao Wu). Open source release of research software prototype, URL: `https://github.com/s3team/`. (2018).

- "VMHunt: A Verifiable Approach to Partially-Virtualized Binary Code Simplification," (Dongpeng Xu, Jiang Ming, Yu Fu, and Dinghao Wu). URL: `https://github.com/s3team/VMHunt`. Open Source Release. (2018).

- "Amoeba: Binary Code Diverisfication through Composite Software Diversification," (Shuai Wang, Pei Wang, and Dinghao Wu). Open Source Release. URL: `https://github.com/s3team/`. Sponsored by Office of Naval Research (ONR) under the Grants No. N00014-13-1-0175 and N00014-16-1-2265. (2017).

- "CryptoHunt: Cryptographic Function Detection in Obfuscated Binaries via Bit-precise Symbolic Loop Mapping," (Dongpeng Xu, Jiang Ming, and Dinghao Wu). Open Source Release. (2017). URL: `https://github.com/s3team/CryptoHunt`. Sponsored by Office of Naval Research (ONR) under the Grants No. N00014-13-1-0175 and N00014-16-1-2265.

- "Software Bloat Reduction," (Dinghao Wu and Yufei Jiang). ONR awarded two SBIR projects to two companies to transfer my work on software bloat reduction to practice. (2017).

- "A Generalized Dynamic Opaque Predicate Obfuscator," (Dongpeng Xu, Jiang Ming, and Dinghao Wu). Open Source Release. Sponsored by National Science Foundation (NSF) under the Grant No. CCF-1320605. Open Source Release. (2016).

- "Efficient Multi-threaded Binary Code Control Flow Profiling Pintool," (Jiang Ming and Dinghao Wu). Open Source Release. Sponsored by the National Science Foundation (NSF) under the Grant No. CNS-1223710. (2016).

- "IFC Importer for OpenStudio," (Chong Zhou, Yu Fu, Pengwei Lan, Yufei Jiang, Nan Yu, Dinghao Wu, John Yen, John Messner, and Robert Leicht). Open Source Release, adopted by DOE Building Energy Simulation Platform OpenStudio. (2016).

- "LOOP: Logic-Oriented Opaque Predicate Detection in Obfuscated Binary Code," (Jiang Ming, Dongpeng Xu, and Dinghao Wu). Open Source Release. URL: `https://github.com/s3team/loop`. (2015).

- "Uroboros: Reassembleable Disassembling," (Shuai Wang, Pei Wang, and Dinghao Wu). Open Source Software Release. (2015). Uroboros, a foundational tool for reverse engineering and binary retrofitting, is released at URL: `https://github.com/s3team/uroboros`. The work has been adopted by several labs and research groups, and generated quite a few buzzes (see `http://plato.ist.psu.edu/?page_id=472`) on Twitter, GitHub, and Weibo after open source release. In particular, the method has been adopted by 2 teams among the 7 finalists in the 2016 DARPA Cyber Grand Challenge (CGC) competition! The Shellphish team from the University of California Santa Barbara Shellphish team that won the 3rd place in the 2016 DARPA Cyber Grand Challenge (CGC) competition adopted and enhanced Uroboros in their tool Ramblr.

- "Cruiser: Concurrent Buffer Overflow Monitoring Using Lock-free Data Structures," (Qiang Zeng, Dinghao Wu, and Peng Liu). Open source software release of Cruiser, a concurrent heap buffer overflow detector using lock-free data structure for synchronization. URL: `https://code.google.com/p/cruiser-psu/`. (2014).
- "Tailored Application-specific System Call Tables," (Qiang Zeng, Zhi Xin, Dinghao Wu, Peng Liu, and Bing Mao). Open source software release: System call customization patch for Linux 2.6.32.59 and binary-based system call analysis code as IDA Pro plugins. (2014).
- "ViewDroid: Towards Obfuscation-Resilient Mobile Application Repackaging Detection," (Fangfang Zhang, Heqing Huang, Sencun Zhu, Dinghao Wu, and Peng Liu). Open Source Release, sponsored by the National Science Foundation (NSF) under the Grant No. CCF-1320605. (2014).
- "An Automated Computer Query Generation Method and System for Building Information Modeling (BIM)," (Yufei Jiang, Nan Yu, Jiang Ming, Lannan Luo, Sanghoon Lee, Abdou Jallow, Dinghao Wu, John Yen, John Messner, and Robert Leicht). Open Source Release, adopted by DOE EEB HUB. (2013).

Publications

1. FlatD: Protecting Deep Neural Network Program from Reversing Attacks, by Jinquan Zhang, Zihao Wang, Pei Wang, Rui Zhong, and Dinghao Wu. In *Proceedings of the 47th International Conference on Software Engineering (ICSE 2025), Software Engineering in Practice (SEIP) track*, Ottawa, Ontario, Canada, 2025. (accepted)
2. Veiled Pathways: Investigating Covert and Side Channels within GPU Uncore, by Yuanqing Miao, Yingtian Zhang, Dinghao Wu, Danfeng Zhang, Gang Tan, Rui Zhang, and Mahmut Kandemir. In *Proceedings of IEEE/ACM International Symposium on Microarchitecture (MICRO '24)*, 2024.
3. Clustering-Augmented Fraud Detection on Graphs Using Label-Aware Feature Aggregation, by Shixiong Jing, Lingwei Chen, and Dinghao Wu. In *Proceedings of the 16th Asian Conference on Machine Learning (ACML)*, 2024.
4. Enhancing Malware Classification via Self-Similarity Techniques, by Fangtian Zhong, Qin Hu, Yili Jiang, Jiaqi Huang, Cheng Zhang, and Dinghao Wu. *IEEE Transactions on Information Forensics and Security*, vol. 19, pp. 7232-7244, 2024.
5. DeepType: Refining Indirect Call Targets with Strong Multi-layer Type Analysis, by Tianrou Xia, Hong Hu, and Dinghao Wu. In *Proceedings of the 33rd USENIX Security Symposium*, Philadelphia, USA, August 2024.
6. Jailbreak Open-Sourced Large Language Models via Enforced Decoding, by Hangfan Zhang, Zhimeng Guo, Huaisheng Zhu, Bochuan Cao, Lu Lin, Jinyuan Jia, Jinghui Chen, and Dinghao Wu. In *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL 2024)*, Bangkok, Thailand, August 2024.

7. Graph Adversarial Diffusion Convolution via Laplacian Distance, by Songtao Liu, Jinghui Chen, Tianfan Fu, Lu Lin, Marinka Zitnik, and Dinghao Wu. In *Proceedings of the Forty-first International Conference on Machine Learning (ICML 2024)*, Vienna, Austria, July 2024.

8. DOS-GNN: Dual-Feature Aggregations with Over-Sampling for Class-Imbalanced Fraud Detection on Graphs, by Shixiong Jing, Lingwei Chen, Quan Li¡script¿student()¡/script¿, and Dinghao Wu. In *Proceedings of the 2024 International Joint Conference on Neural Networks (IJCNN)*, Yokohama, Japan, 2024.

9. H2GNN: Graph Neural Networks with Homophilic and Heterophilic Feature Aggregations, (Shixiong Jing, Lingwei Chen, Quan Li, and Dinghao Wu). In *Proceedings of the 29th International Conference on Database Systems for Advanced Applications (DASFAA 2024)*, Gifu, Japan, 2024.

10. "A3FL: Adversarially Adaptive Backdoor Attacks to Federated Learning," (Hangfan Zhang, Jinyuan Jia, Jinghui Chen, Lu Lin, and Dinghao Wu). In *Proceedings of the Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS 2023)*, New Orleans, December 2023.

11. "Pseudo-Labeling with Graph Active Learning for Few-shot Node Classification," (Quan Li, Lingwei Chen, Shixiong Jing, and Dinghao Wu). In *Proceedings of the 23rd IEEE International Conference on Data Mining (ICDM)*, Shanghai, China, December 2023. (short paper)

12. "Hardware Support for Constant-Time Programming," (Yuanqing Miao, Mahmut Taylan Kandemir, Danfeng Zhang, Yingtian Zhang, Gang Tan, and Dinghao Wu). In *Proceedings of the 56th IEEE/ACM International Symposium on Microarchitecture (MICRO)*, Toronto, Canada, October-November 2023.

13. "Quantifying and Mitigating Cache Side Channel Leakage with Differential Set," (Cong Ma, Dinghao Wu, Gang Tan, Mahmut Taylan Kandemir, and Danfeng Zhang). In *Proceedings of the ACM SIGPLAN International Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA)*, OOPSLA issue of the Proceedings of the ACM on Programming Languages (PACMPL), October 2023.

14. "μFUZZ: Redesign of Parallel Fuzzing using Microservice Architecture," (Yongheng Chen, Rui Zhong, Yupeng Yang, Hong Hu, Dinghao Wu, and Wenke Lee). In *Proceedings of the 32nd USENIX Security Symposium (USENIX Security '23)*, 2023.

15. "Adversary for Social Good: Leveraging Adversarial Attacks to Protect Personal Attribute Privacy," (Xiaoting Li, Lingwei Chen, and Dinghao Wu). *ACM Transactions on Knowledge Discovery from Data (TKDD)*, Volume 18, Issue 2, Article No.: 46, pp. 1-24, 2023.

16. "Graph Contrastive Backdoor Attacks," (Hangfan Zhang, Jinghui Chen, Lu Lin, Jinyuan Jia, and Dinghao Wu). In *Proceedings of the 40 th International Conference on Machine Learning (ICML)*, Honolulu, Hawaii, USA. PMLR 202, 2023.

17. "FusionRetro: Molecule Representation Fusion via In-Context Learning for Retrosynthetic Planning," (Songtao Liu, Zhengkai Tu, Minkai Xu, Zuobai Zhang, Lu Lin, Rex Ying, Jian

Tang, Peilin Zhao, and Dinghao Wu). In *Proceedings of the 40 th International Conference on Machine Learning (ICML)*, Honolulu, Hawaii, USA. PMLR 202, 2023.

18. "Source Code Implied Language Structure Abstraction through Backward Taint Analysis," (Zihao Wang, Pei Wang, Qinkun Bao, and Dinghao Wu). In *Proceedings of the 18th International Conference on Software Technologies (ICSOFT)*, 2023.

19. "LibSteal: Model Extraction Attack towards Deep Learning Compilers by Reversing DNN Binary Library," (Jinquan Zhang, Pei Wang, and Dinghao Wu). In *Proceedings of the 18th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE)*, 2023.

20. "Hierarchical Graph Neural Network for Patient Treatment Preference Prediction with External Knowledge," (Quan Li, Lingwei Chen, Yong Cai, and Dinghao Wu). In *Proceedings of the 27th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, 2023.

21. "Knowledge Distillation on Cross-Modal Adversarial Reprogramming for Data-Limited Attribute Inference" (Quan Li, Lingwei Chen, Shixiong Jing, and Dinghao Wu). In *WWW '23 Companion: Companion Proceedings of the ACM Web Conference*, 2023. (short paper)

22. "Detecting and Interpreting Changes in Scanning Behavior in Large Network Telescopes," (Michael Kallitsis, Rupesh Prajapati, Vasant Honavar, Dinghao Wu, and John Yen). *IEEE Transactions on Information Forensics & Security*, vol. 17, pp. 3611–3625, October 2022.

23. "Adversary for Social Good: Leveraging Attribute-Obfuscating Attack to Protect User Privacy on Social Networks," (Xiaoting Li, Lingwei Chen, and Dinghao Wu). In *Proceedings of the 18th EAI International Conference on Security and Privacy in Communication Networks (SecureComm 2022)*, pp. 710–728, October 2022.

24. "Local Augmentation for Graph Neural Networks," (Songtao Liu, Rex Ying, Hanze Dong, Lanqing Li, Tingyang Xu, Yu Rong, Peilin Zhao, Junzhou Huang, and Dinghao Wu). In *International Conference on Machine Learning 2022 (ICML)*, Baltimore, Maryland, USA, July 2022.

25. "How Powerful is Implicit Denoising in Graph Neural Networks," (Songtao Liu, Rex Ying, Hanze Dong, Lu Lin, Jinghui Chen, and Dinghao Wu). In *NeurIPS 2022 Workshop: New Frontiers in Graph Learning (GLFrontiers)*, 2022.

26. "Enhancing Multi-hop Connectivity for Graph Convolutional Networks," (Songtao Liu, Shixiong Jing, Tong Zhao, Zengfeng Huang, and Dinghao Wu). In *ICML 2022 Workshop on Pre-training: Perspectives, Pitfalls, and Paths Forward*, Baltimore, Maryland, USA, July 2022.

27. "FuzzBoost: Reinforcement Compiler Fuzzing," (Xiaoting Li, Xiao Liu, Lingwei Chen, Rupesh Prajapati, and Dinghao Wu). In *The 24th International Conference on Information and Communications Security (ICICS 2022)*, Canterbury, UK, September, 2022.

28. "Semi-synchronized Non-blocking Concurrent Kernel Cruising," (Donghai Tian, Qiang Zeng, Dinghao Wu, Peng Liu, and Changzhen Hu). *IEEE Transactions on Cloud Computing*, 10(2):1428–1444, 2022.

29. "Distilling Knowledge on Text Graph for Social Media Attribute Inference," (Quan Li, Xiaoting Li, Lingwei Chen, and Dinghao Wu.) In *International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'22)*, Madrid, Spain, July 2022. (short paper)

30. "PackerGrind: An Adaptive Unpacking System for Android Apps," (Lei Xue, Hao Zhou, Xiapu Luo, Le Yu, Dinghao Wu, Yajin Zhou, and Xiabo Ma). *IEEE Transactions on Software Engineering (TSE)*, 48(2):551–570, 2022.

31. "Adversarially Reprogramming Pretrained Neural Networks for Data-limited and Cost-efficient Malware Detection," (Lingwei Chen, Xiaoting Li, and Dinghao Wu). In *Proceedings of the SIAM International Conference on Data Mining (SDM'22)*, 2022.

32. "AlphaProg: Reinforcement Generation of Valid Programs for Compiler Fuzzing," (Xiaoting Li, Xiao Liu, Lingwei Chen, Rupesh Prajapati, and Dinghao Wu). In *Proceedings of the Thirty-Fourth Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-22)*, 2022.

33. "Shedding Light Into the Darknet: Scanning Characterization and Detection of Temporal Changes (poster paper)", (Rupesh Prajapati, Vasant Honavar, Dinghao Wu, John Yen, and Michalis Kallitsis). In *Proceedings of the 17th International Conference on emerging Networking EXperiments and Technologies (CoNEXT)*. December 7-10, 2021. (poster)

34. "Characterizing AI Model Inference Applications Running in SGX Environment," (Shixiong Jing, Qinkun Bao, Pei Wang, Xulong Tang, and Dinghao Wu). In *Proceedings of the 15th IEEE International Conference on Networking, Architecture, and Storage (NAS)*, 2021. (Short paper)

35. "Parema: An Unpacking Framework for Demystifying VM-based Android Packers," (Lei Xue, Yuxiao Yan, Luyi Yan, Muhui Jiang, Xiapu Luo, Dinghao Wu, and Yajin Zhou). In *Proceedings of the ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2021)*.

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