

# Shidong Pan

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## Education Experience

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**The Australian National University & CSIRO's Data61**

Oct. 2021 – Present

*Doctor of Philosophy, School of Computing*

**The Australian National University**

Feb. 2020 – Jul. 2021

*Master of Machine Learning and Computer Vision. Grade: High Distinction*

**The Australian National University**

Sep. 2015 – Dec. 2019

*Bachelor of Advanced Computing (Honours), joint degree with Shandong University (Weihai)*

## Research Interests

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I'm an about-to-finish PhD candidate at Australia National University and CSIRO's Data61. I will be joining Columbia University as a postdoctoral researcher in Fall 2024. My research spans Usable Privacy and Security, Software Engineering, and Responsible AI broadly. My research anchors in the belief that privacy factors should be both responsible and accessible in software/AIware systems and their engineering process, guiding my exploration into novel methodologies and frameworks that advance these fields. Specifically, my research landscape is detailed across three primary areas of work:

- 1) Regulation-driven Software Privacy Compliance Analysis. [Security'24 (a)][AI&Ethics'24]
- 2) User-centric and Regulation-driven Privacy Enhancing Designs. [Security'24 (b)][arXiv (a)]
- 3) Responsible AI for Software Engineering. [FAccT'23][TSE'24 (a)][TSE'24 (b)][arXiv(b)]

## Selected Publications

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[ACM FAccT'23 - ChatLLM] Dawen Zhang, Pamela Finckenberg-Broman, Thong Hoang, **Shidong Pan**, Zhenchang Xing, Mark Staples, and Xiwei Xu. *Right to be Forgotten in Era of Large Language Models: Implications, Challenges, and Solutions*.

[USENIX Security 2024] **Shidong Pan**, Dawen Zhang, Mark Staples, Zhenchang Xing, Jieshan Chen, Xiwei Xu, and James Hoang. *Is It a Trap? A Large-scale Empirical Study And Comprehensive Assessment of Online Automated Privacy Policy Generators for Mobile Apps*. Summer round acceptance rate: 19%.

[Springer AI and Ethics 2024] Dawen Zhang, **Shidong Pan**, Thong Hoang, Zhenchang Xing, Mark Staples, Xiwei Xu, Lina Yao, Qinghua Lu, and Liming Zhu. *To Be Forgotten or To Be Fair: Unveiling Fairness Implications of Machine Unlearning Methods*.

[USENIX Security 2024] **Shidong Pan**, Zhen Tao, Thong Hoang, Dawen Zhang, Tianshi Li, Zhenchang Xing, Xiwei Xu, Mark Staples, Thierry Rakotoarivelo, and David Lo. *A New Hope: Contextual Privacy Policies for Mobile Applications And an Approach Toward Automated Generation*.

[Transactions of Software Engineering ] (major revision) Dianshu Liao, **Shidong Pan**, Xiaoyu Sun, Qing Huang, Xiaoxue Ren, and Zhenchang Xing. *Context-aware Code Generation Framework for Code Repositories: Local, Global, and Third-Party Library Awareness*

[Transactions of Software Engineering ] (major revision) Linyi Han, **Shidong Pan**, Zhenchang Xing, Jiamou Sun, Sofonias Yitagesu, Xiaowang Zhang, Zhiyong Feng. *Missing Key Aspects Augmentation in Textual Vulnerability Descriptions of Long-tail Software through Feature Inference*

*Pre-print/Under-review Papers.* \* denotes co-first author, † denotes corresponding author (project lead)

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[Pre-print, arXiv] **Shidong Pan**, Zhen Tao, Dawen Zhang, James Hoang, Zhenchang Xing, Xiwei Xu, Qinghua Lu, and Mark Staples. *Toward the Cure of Privacy Policy Reading Phobia: Automated Generation of Privacy Nutrition Labels From Privacy Policies.*

[Pre-print, arXiv; Under-review, ASE'25] **Shidong Pan**, Tianchen Guo, Lihong Zhang, Pei Liu, Zhenchang Xing, and Xiaoyu Sun. *A Large-scale Investigation of Semantically Incompatible APIs behind Compatibility Issues in Android Apps.*

[Pre-print, arXiv; Under-review, ASE'25] Dianshu Liao, **Shidong Pan**, Siyuan Yang, Yitong Wang, Yanjie Zhao, Zhenchang Xing, Xiaoyu Sun. *Automatically Analyzing Performance Issues in Android Apps: How Far Are We?*

[Under-review, S&P Oakland'25] Zhen Tao\*, **Shidong Pan**\*†, Zhenchang Xing, Xiaoyu Sun, Omar Haggag, John Grundy, Ze Shi Li, Jingjie Li, Liming Zhu. *Privacy Bills of Material (PriBOM): A Transparency-centric Privacy Information Inventory toward Traceable, Trackable, and Collaborative Privacy Notice Generation in DevOps for Mobile Apps.*

[Under-review, NDSS'25] Meixue Si\*, **Shidong Pan**\*†, Dianshu Liao, Xiaoyu Sun, Zhen Tao, Wenchang Shi, Zhenchang Xing. *Regulation-driven AI Nutrition Labels for Online Generative AI-based Applications and An Approach Toward Automated Generation.*

[Under-review, ICSE'25] Linyi Han, **Shidong Pan**, Zhenchang Xing, Xiaowang Zhang, Zhiyong Feng, Jiamou Sun. *Unified Digest Labels: Unifying and Digesting Key Aspects in Textual Vulnerability Descriptions.*

#### *On-going Research Papers*

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**Shidong Pan**, Ze Shi Li, and Jingjie Li. Security and Privacy Concerns, Attitudes, and Discussions about Smart Vehicles in Short Video Platforms.

Alessandro Fortunato Pedace, **Shidong Pan**, Omar Haggag, John Grundy. Privacy Regulations and User Concerns of Finance Mobile Applications.

**Shidong Pan**, Litian Wang, Tianyi Zhang, Xiaoyu Sun. AI-empowered Tools in the Software Development Process: Utility, Productivity, and Responsibility.

#### *Personal Strengths in Academia*

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- 1) Proven leadership in developing a clear vision for research direction and creating a strategic plan to achieve research goals, with resilience, adaptability, networking, and collaboration.
- 2) Demonstrated expertise in research with publications in prestigious venues, showcasing groundbreaking work on Usable Privacy & Security, Software Engineering, and Responsible AI research.
- 3) Extensive coursework teaching and mentorship experience, achieving high student satisfaction in advanced computing courses and guiding numerous research projects to success.
- 4) Effective collaboration with international education agencies to promote and enhance international student programs, leveraging unique insights into the global outreach of educational initiatives.

#### *Awards*

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- 1) Shandong University Oversea-Student Principal Scholarship, 2018 and 2019 (Top 10%)
- 2) CSIRO's Data61 PhD Scholarship + PhD Top-up Scholarship, 2021-2025
- 3) Australian National University PhD Tuition Fee Waiver Scholarship, 2021-2025
- 4) Google Conference Travel Grant, 2024

## Working Experience

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### International Student Coordinator/Student Assistant

May 2019 – May 2020

*Australian Education Management Group (AEMG)*

*Australia*

- Coordinated advertisement and assisted in international student recruitment for the Australian National University and Shandong University (Weihai) “2+2” joint degree program.
- Organized academic and social events, facilitating engagement and support for program students.
- Provided consultation on course selection, degree application, and career development, aiding students in navigating academic and career pathways.

### Teaching Assistant/Tutor

Feb. 2020 – June 2024

*Australian National University*

*Canberra, Australia*

- (Head TA) COMP8535, Engineering Data Analytics, 2021S1, supervised by Prof. Hongdong Li
- (Head TA) COMP8536, Deep Learning for Computer Vision, 2021S2, supervised by Prof. Nick Barnes
- COMP4650, Document Analysis, supervised by Alex Antic
- ENGN4528, Computer Vision, supervised by Prof. Nick Barnes
- COMP1710, Web Development and Design, supervised by Prof. Tom Gedeon
- COMP4130, Managing Software Quality and Process, supervised by Xiaoyu Sun

### Research Assistant, Visiting Ph.D. Student

Mar. 2023 – Sep. 2023

*Singapore Management University*

*Singapore*

- Supervised by Prof. David Lo
- Worked on research projects in Center of Research Intelligent Software Engineering

### Senior Research Officer/Senior Research Assistant

Mar. 2024 – Present

*Australian National University*

*Canberra, Australia*

- Advising Honours and Master project students (The projects are listed below)

### Postdoctoral Researcher

est. Sep. 2024 – Sep. 2025

*Columbia University*

*New York, NY, USA*

- Working on research projects about Responsible AI and Usable Privacy & Security.

## Teaching and Supervision Experience

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### Tutor Head/Assistant Lecturer

Feb. 2020 – Present

*Australian National University*

*Canberra, Australia*

- [COMP8535 Engineering Data Analytics] This is an advanced level postgraduate course, covering technologies and methodologies necessary for inferring underlying patterns from raw data. I drafted assignments, led the marking procedure, and delivered tutorials. The teaching team earned the **highest student satisfactory** in four years. I obtained 4.3/5.0 satisfactory across five metrics, which is the highest in the teaching team.
- [COMP8536 Advanced Topics in Deep Learning for Computer Vision] This is a research project-based course about Deep Learning, with a particular emphasis on their use in Image Processing and Computer Vision. I delivered tutorials, instructed student research projects, and led the grading procedure. The teaching team increased the **student satisfactory from 77% to 89%** and I obtained 4.5/5.0 satisfactory across five metrics.

### Final-year Research Project Mentor

June 2022 – Present

*Australian National University*

*Australia*

I serve as the supervisor/co-supervisor for ANU students who are undertaking final-year research projects. The items are listed in chronological order.  $\Rightarrow$  denotes their next stop after graduation.

- [High Distinction] [Honour's Thesis] Zhen Tao, *Design and Evaluation Automated Contextual Privacy Policy on Mobile Apps*, 2022-2023,  $\Rightarrow$  Master of Machine Learning and Computer Vision at Australian National University and research engineer in CSIRO's Data61.

- [Master's Thesis] Zhen Tao, *PriBOM (Privacy Bills of Material): A Transparency-centric Privacy Information Inventory toward Traceable, Trackable, and Collaborative Privacy Notice Generation in DevOps for Mobile Apps*, 2023-2024, ⇒ **incoming PhD at Technical University of Munich.**
- [Master's Thesis] Ke Ran, 2023-2024 (Program Leave), ⇒ independent game developer.
- [Honour's Thesis] Tianchen Guo, *Large Language Models for Code Understanding in Software Engineering*, 2023-2024, ⇒ **incoming PhD at University of Queensland.** (Co-supervised with Xiaoyu Sun)
- [Honour's Thesis] Lihong Zhang, *Automated LLM-based Compatibility Issues Detector For Android Applications*, 2023-2024. (Co-supervised with Xiaoyu Sun)
- [Honour's Thesis] Yikai Ge, *Usable Security and Privacy Challenges and Implications in Voice-based Third-party Assistant Mobile Applications*, 2023-2024. (Co-supervised with Xiaoyu Sun)
- [Honour's Thesis] Litian Wang, *AI-empowered Tools in Software Development Process: Utility, Productivity, and Responsibility*, 2023-2024. (Co-supervised with Xiaoyu Sun)
- [Honour's Thesis] Tianyi Zhang, 2024-2025
- [Master's Thesis] Mengqi Wang, 2024-2025
- [Master's Thesis] Mufei Li, 2024-2025
- [Master's Thesis] Haochen Gong, 2024-2025

#### PhD Research Mentor

Nov 2023 – Present

*Co-instruct research projects for the following PhD students*

- [Australian National University] Dianshu Liao, Co-supervised with Xiaoyu Sun and Zhenchang Xing
- [Renmin University of China] Meixue Si, Co-supervised with Wenchang Shi
- [Tianjin University] Linyi Han, Co-supervised with Xiaowang Zhang and Zhiyong Feng
- [University of Edinburgh] Jiuming Jiang, Co-supervised with Jingjie Li

#### Course Lecturer

May 2024

*Shandong University (Weihai)*

*Shandong, China*

Teaching the intensive-mode Software Engineering course for undergraduate (Year 2) students. Topics covered: Software Development Process, Software Quality Assurance, Software Testing, AI for SE, SE for AI, Responsible SE, Software Privacy and Security

#### Guest Lecturer

- University of Edinburgh, INFR11158/INFR11230, USEC: Usable Security and Privacy, taught by Jingjie Li
- Australian National University, COMP4130, Managing Software Quality and Process, taught by Xiaoyu Sun

#### Community Services

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#### Conference Reviewer

- [CAIN 2023] The 2nd International Conference on AI Engineering – Software Engineering for AI
- [ACL 2023] The 61st Annual Meeting of the Association for Computational Linguistics
- [ICSME 2023] 39th IEEE International Conference on Software Maintenance and Evolution
- [LCTES 2024] 25th ACM SIGPLAN/SIGBED International Conference on Languages, Compilers, and Tools for Embedded Systems
- [FSE 2024] The ACM International Conference on the Foundations of Software Engineering
- [ICSE 2025] 47th International Conference on Software Engineering

#### Journal Reviewer

- [EMSE] Empirical Software Engineering

### *Invited Talks.*

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- 1) User-centered Privacy Enhancement in AI Systems Driven by Policy and Regulatory Principles.  
*AI+ML+Friends Seminars, School of Computing, Australian National University, Canberra, Australia (29 February 2024)*  
*Guest Seminars, Faculty of Information Technology, Monash University, Melbourne, Australia (05 March 2024)*  
*n.v.w.a. Lab Guest Seminars, Swinburne University of Technology, Melbourne, Australia (06 March 2024)*
- 2) A New Hope: Contextual Privacy Policy for Mobile Applications  
[Online] *Invited Speaker, Privacy Week 2024 hosted by Privacy Network, Milan, Italy (May 2024)*  
[Online] *Peach Lab seminar, Northeastern University, Boston, USA (August 2024)*
- 3) User-Centered and Regulation-Driven Privacy Enhancements in Software Engineering  
[Online] *HumaniSE Lab seminar, Monash University, Melbourne, Australia (July 2024)*

### *Referees*

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- **Zhenchang Xing**, Senior Principal Research Scientist, Data61, zhenchang.xing@data61.csiro.au
- **Sherry Xu**, Principal Research Scientist/SS Group Leader, Data61, sherry.xu@data61.csiro.au
- **John Grundy**, Professor, Monash University, john.grundy@monash.edu.au
- **David Lo**, Professor, Singapore Management University, davidlo@smu.edu.sg