

XI HE

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DEGREES

PhD in Computer Science, Duke University, Durham, NC, USA	2012-2018
BS in Mathematics with Honors & BCS with Honors, National University of Singapore	2008-2012

EMPLOYMENT HISTORY

Assistant Professor, Tenure Track, Computer Science, University of Waterloo, Canada	2019-Present
Postdoctoral Associate, Computer Science, Duke University, USA	2018/09-2018/12
Research Intern, Microsoft Research, Redmond, WA, USA	2016/06-2016/09
Research Intern, AT&T Labs Research, New York, USA	2014/06-2016/08
Research Intern, AT&T Labs Research, New Jersey, USA	2013/06-2013/08

HONORS AND AWARDS

H-1. Outstanding Ph.D. Dissertation Award , Duke University	2018
H-2. Google PhD Fellowship in Privacy and Security , Google	2017
H-3. Best Demo Award , VLDB Conference	2016
H-4. Participant at 2016 Rising Stars Workshop , Carnegie Mellon University	2016
H-5. Outstanding PhD Research Initial Project Award , Duke University	2014
H-6. Members of the U.S. Delegation to the 2nd HLF , Heidelberg Laureate Forum Foundation	2014
H-7. GHC Scholarship Grant , Grace Hopper Celebration of Women in Computing	2014

GRADUATE SUPERVISIONS

In progress: 2 M.A., 1 Ph.D.

S-1. Shubhankar Mohapatra (MA)	2019/05-
S-2. Harry Sivasubramaniam (MA)	2019/05-
S-3. Karl Knoff (PhD)	2019/09-

COURSES

C-1. Privacy and Fairness in Data Science (CS848) , Seminar	2019/09, 2018/09
C-2. Introduction to Database Management (CS348) , Undergraduate Course	2019/03

RESEARCH FUNDING HISTORY

F-1. Resource allocation competition award from Compute Canada, \$23,000.	2020/04-2021/03
F-2. NSERC-Discovery grant, \$115,500.	2019/09-2024/09
F-3. NSERC-Discovery Launch Supplement grant, \$12,500.	2019/04-2025/03
F-4. University start-up fund, \$120,000.	2019/01-2022/06

PUBLICATIONS

CONFERENCE.

- P-1. Zhuolun Xiang, Bolin Ding, *Xi He*, Jingren Zhou. “*Linear and Range Counting under Metric-based Local Differential Privacy*”. In IEEE International Symposium on Information Theory *ISIT*, 2020.
- P-2. Yuchao Tao, *Xi He*, Sudeepa Roy, Ashwin Machanavajjhala. “*Computing Local Sensitivities of Counting Queries with Joins*”. In ACM Special Interest Group on Management of Data *SIGMOD*, 2020.
- P-3. Amrita Roy Chowdhury, Chenghong Wang, *Xi He*, Ashwin Machanavajjhala, Somesh Jha. “*Crypte: Crypto-Assisted Differential Privacy on Untrusted Servers*”. In ACM Special Interest Group on Management of Data *SIGMOD*, 2020.
- P-4. Changchang Liu, *Xi He*, Thee Chanyaswad, Shiqiang Wang, Prateek Mitta. “*Investigating Statistical Privacy Frameworks from the Perspective of Hypothesis Testing*”. In Privacy Enhancing Technologies Symposium *PETS*, 2019.
- P-5. Ios Kotsogiannis, Yuchao Tao, *Xi He*, Ashwin Machanavajjhala, Michael Hay and Gerome Miklau. “*PrivateSQL: A Differentially Private SQL Query Engine*”. In International Conference on Very Large Data Bases *VLDB*, 2019.
- P-6. Johes Bater, *Xi He*, William Ehrich, Ashwin Machanavajjhala, Jennie Rogers. “*Shrinkwrap: Differentially Private Query Processing in Private Data Federations*”. In International Conference on Very Large Data Bases *VLDB*, 2019.
- P-7. Chang Ge, Ihab F. Ilyas, *Xi He*, Ashwin Machanavajjhala. “*APEX: Accuracy-Aware Differentially Private Data Exploration*”. In ACM Special Interest Group on Management of Data *SIGMOD*, 2019.
- P-8. *Xi He*, Ashwin Machanavajjhala, Cheryl Flynn, Divesh Srivastava. “*Composing Differential Privacy and Secure Computation: A Case Study on Scaling Private Record Linkage*”. In ACM Conference on Computer and Communications Security *CCS*, 2017.
- P-9. *Xi He*, Graham Cormode, Ashwin Machanavajjhala, Cecilia M. Procopiuc, Divesh Srivastava. “*DPT: Differentially Private Trajectory Synthesis using Hierarchical Reference Systems*”. In International Conference on Very Large Data Bases *VLDB*, 2015.
- P-10. *Xi He*, Ashwin Machanavajjhala, Bolin Ding. “*Blowfish Privacy: Tuning Privacy-Utility Trade-offs using Policies*”. In ACM Special Interest Group on Management of Data *SIGMOD*, 2014.

BOOK CHAPTER.

- P-11. Ashwin Machanavajjhala, *Xi He*. “*Analyzing Your Location Data with Provable Privacy Guarantees*”. Chapter in *Springer Handbook on Mobile Data Privacy*, 2018.

WORKSHOP & DEMO.

- W-12. Shubhankar Mohapatra, *Xi He*, Gautam Kamath and Om Thakkar “*Diffindo! Differentially Private Learning with Noisy Labels*”. In Privacy Preserving Artificial Intelligence *PPAI*, part of Association for the Advancement of Artificial Intelligence *AAAI*, 2020.
- W-13. Jennie Rogers, Johes Bater, *Xi He*, Ashwin Machanavajjhala, Madhav Suresh, and Xiao Wang. “*Privacy Changes Everything*” In POLY Workshop part of International Conference on Very Large Data Bases *VLDB*, 2019.
- W-14. Sameera Ghayyur, Dhruvajyoti Ghosh, *Xi He* and Sharad Mehrotra. “*Towards Accuracy Aware Minimally Invasive Monitoring (MiM)*”. In Theory and Practice of Differential Privacy *TPDP*, part of ACM Conference on Computer and Communications Security *CCS*, 2019.
- W-15. Johes Bater, *Xi He*, William Ehrich, Ashwin Machanavajjhala, Jennie Rogers. “*Shrinkwrap: Efficient SQL Query Processing in Differentially Private Data Federations*”. In Theory and Practice of Differential Privacy *TPDP*, part of ACM Conference on Computer and Communications Security *CCS*, 2018.
- W-16. *Xi He*, Nisarg Raval, Ashwin Machanavajjhala. “*A Demonstration of VisDPT: Visual Exploration of Differentially Private Trajectories*”. In International Conference on Very Large Data Bases *VLDB*, 2016.

- W-17. Xi He, Ashwin Machanavajjhala, Cheryl Flynn, Divesh Srivastava. “*Composing Differential Privacy and Secure Multiparty Computation for Efficient Private Record Linkage*”. In Theory and Practice of Differential Privacy *TPDP*, part of International Conference on Machine Learning *ICML*, 2016.

JOURNAL.

- P-18. Y.C. Tay, Xuanran Zong, Xi He. “*An Equation-Based Heap Sizing Rule*”. In *Performance Evaluation*, 2013.

SELECTED TALKS

- T-1. “*A Tour of Differential Privacy*”. Privacy Engineering Section Forum at the International Association of Privacy Professions (IAPP), US, Winter 2019.
- T-2. “*Private Exploration Primitives for Data Cleaning*”. Mathematical Foundations of Data Privacy Workshop, Banff, Canada, Spring 2018.
- T-3. “*Trading off Accuracy Privacy and Efficiency in Secure Joins using Differential Privacy*”. Differential Privacy Meets Multi-Party Computation (DPMPC) Workshop, US, Fall 2018.
- T-4. “*Leave No Trace: Location Data with Provable Privacy Guarantees*”. Computer Science & Engineering Colloquium, UT Arlington, Fall 2017.
- T-5. “*Privacy with Constraints: Opportunities & Challenges*”. Theory and Practice of Differential Privacy *TPDP*, part of CCS, Fall 2017.

PROFESSIONAL SERVICES AND LEADERSHIP

Program Committee. Review committee for VDLB 2020-2021, SIGMOD 2020, ICDE 2020, EDBT 2020, PETS 2020-2021, TPDP 2019; Co-chair for the Student Research Competition, ACM Special Interest Group on Management of Data (SIGMOD) 2020.

Professional Affiliations. Member of Waterloo CS Graduate Recruitment Committee (2019-); Committee member of ACM-W Duke University Chapter (president in 2015, vice president in 2014,2016,2017).