

Qiaoyue Tang

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RESEARCH INTERESTS

My research focuses on data privacy in machine learning, including (1) designing efficient privacy-preserving algorithms with provable guarantees, (2) auditing privacy leakage in trained machine learning models, and (3) adapting privacy tools to domain-specific problems, such as fair classification and test-time adaptation.

EDUCATION

University of British Columbia

Ph.D. in Computer Science, Advisor: Mathias Lécuyer
Expected graduation: Oct – Dec 2026

Vancouver, Canada
September 2021 – Current

University of British Columbia

M.Sc. in Statistics, Advisor: Aline Talhouk, Lang Wu

Vancouver, Canada
September 2017 – July 2019

University of British Columbia

B.Sc. in Statistics

Vancouver, Canada
September 2013 – June 2017

EXPERIENCE

Graduate Research Assistant

University of British Columbia

Vancouver, Canada
September 2021 – Current

- Design and implement algorithms for understanding, improving and verifying private machine learning models.
- Design [differentially private test-time adaptation](#) methods with improved performance in adapting to new and distributionally different test data. [8]
- Develop theoretical analysis for [privacy auditing](#) with synthetic non-member data generation, audit privacy leakage on trained image-based models and LLMs. [1]
- Design better [differentially private optimization](#) algorithms with improved privacy-utility tradeoff. [2,5,7]

Machine Learning Research Intern

Royal Bank of Canada, Borealis

Vancouver, Canada
May 2025 – October 2025

- Develop method for [de-biasing disparate impact](#) from pre-trained models with potential social biases for fair downstream performance. [4]

Machine Learning Engineer

Huawei Technologies, AI Application Research Center

Shenzhen, China
August 2019 – August 2021

- Designed and developed proof-of-concept AI solutions for internal teams.
- Perform data analysis, life-cycle survival analysis, design and train models for prediction tasks.
- Design and develop pipeline for locating bug files using sequence-to-sequence models in Software Defect Tracking Systems. [7]

Graduate Research Assistant

BC Cancer Research Center, OVCARE

Vancouver, Canada
May 2018 – June 2019

- Analyze and develop classification strategies for high-dimensional gene expression data with imbalanced class distribution (Master's Thesis).

- Perform statistical analysis such as analysis of variance and fitting regression models.

PUBLICATIONS

Conference Papers

- [1] Zefeng Li*, **Qiaoyue Tang***, Mathias Lécuyer, Evan Shelhamer. *Private and Stable Test-time Adaptation with Differential Privacy*. International Conference on Machine Learning (ICML) 2026. (*Alphabetical order)
- [2] Mishaal Kazmi*, Hadrien Lautreite*, Alireza Akbari*, **Qiaoyue Tang***, Mauricio Soroco, Tao Wang, Sébastien Gambs, Mathias Lécuyer. PANORAMIA: Privacy Auditing of Machine Learning Models without Retraining. Neural Information Processing Systems (NeurIPS) 2024. (*Equal contribution)
- [3] **Qiaoyue Tang**, Frederick Shpilevskiy, Mathias Lécuyer. DP-AdamBC: Your DP-Adam Is Actually DP-SGD (Unless You Apply Bias Correction) AAAI 2024. (**Oral, 2.3%**)
- [4] Chenwei Liu, **Qiaoyue Tang**. Triplet Convolutional Networks for Classifying Mixed-Type WBM Patterns with Noisy Labels. IEEE International Test Conference (ITC) 2021.

Workshop Papers

- [5] **Qiaoyue Tang**, Sepidehsadat Hosseini, Mengyao Zhai, Thibaut Durand, Greg Mori. *Improving Fairness via Noise Injection in Vision Transformers*. Algorithmic Fairness Across Alignment Procedures Workshop at ICLR 2026.
- [6] **Qiaoyue Tang**, Alain Zhiyanov, and Mathias Lécuyer. *On the Performance of Differentially Private Optimization with Heavy-Tail Class Imbalance*. High-dimensional Learning Dynamics Workshop at ICML 2025.
- [7] **Qiaoyue Tang**, Mathias Lécuyer. *DP-Adam: Correcting DP Bias in Adam's Second Moment Estimation*. Trustworthy and Reliable Large-Scale Machine Learning Models (RTML) Workshop at ICLR 2023.

Preprints

- [8] **Qiaoyue Tang**, Sepidehsadat Hosseini, Mengyao Zhai, Thibaut Durand, Greg Mori. *FairNVT: Improving Fairness via Noise Injection in Vision Transformers*. In submission. 2026.
- [9] **Qiaoyue Tang**, Mathias Lécuyer. DP-SGD-LF: Improving Utility under Differentially Private Learning via Layer Freezing. Arxiv. 2022.
- [10] **Qiaoyue Tang**, Yangzhe Kong, Lemeng Pan, Choonmeng Lee. Learning to Solve Soft-Constrained Vehicle Routing Problems with Lagrangian Relaxation. Arxiv. 2021.

Patents

- [11] **Qiaoyue Tang**, Hailin Hu, Chenwei Liu, Wei Peng. A Bug Localization Method for Software Defect Tracking Systems using Sequence-to-Sequence Techniques. Patent, patent ID: 86883482CN01-203585.

SCHOLARSHIPS AND AWARDS

- Registration scholarship, Canadian AI Conference April 2026
- Funded Trainee Award, Advanced Machine Learning Training Network, CAN\$15000 December 2025
- Student Travel Award, Theory and Practice of Differential Privacy August 2024
- Ph.D. Tuition Award, University of British Columbia 2021 – 2024
- Outstanding Individual Award, Huawei, AI Application Research Center January 2021
- Outstanding Team Award, Huawei, AI Application Research Center January 2021
- MSc. International Tuition Award, University of British Columbia 2017 – 2019
- Outstanding International Student Award, University of British Columbia September 2013

SERVICE

Reviewer. ICML2026, ECCV 2026, CVPR 2026, AACL2026, NIPS2025, AISTATS2024, NIPS2024

TEACHING

- **Head Teaching Assistant**, University of British Columbia Winter 2025
CPSC340: Machine Learning and Data Mining
- **Teaching Assistant**, University of British Columbia 2016 – 2019
STAT404: Design and Analysis of Experiments
STAT302: Introduction to Probability
STAT200: Elementary Statistics for Applications

SKILLS

- **Programming:** Python, R, Bash
- **Software tools:** PyTorch, Opacus, WandB, Git, LaTeX, JAX
- **Systems:** Linux, SLURM, Google Cloud
- **Languages:** Mandarin (native), English (fluent)