

Xiaoqiang Lin

Ph.D. Candidate

Department of Computer Science

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🌐 <https://xqlin98.github.io/>



Research Interests

- Data-centric AI for large models (e.g., data selection/curation in different stages of training for large models and use of data at inference).
- Collaborative machine learning (e.g., federated learning, incentive mechanism).
- Data valuation (e.g., data pricing, data subset selection, data debugging).
- Gaussian process and its applications (e.g., zeroth-order optimization, Bayesian optimization).

Education

- 2021 – ■ **Ph.D. in Computer Science.**
National University of Singapore.
Advisors: Prof. [See-Kiong Ng](#) and Prof. [Bryan Low](#).
GPA: 4.83/5.
- 2016 – 2020 ■ **Bachelor of Science in Statistics (Data Science Track).**
Fudan University, Shanghai.
Advisor: Prof. [Zhongyu Wei](#).
Thesis title: Graph Neural Network-Based Representation Learning of Legislator and Legislation for Roll Call Prediction.
GPA: 3.69/4.

Publications

- **Xiaoqiang Lin**, Xinyi Xu, Zhaoxuan Wu, See-Kiong Ng, Bryan Kian Hsiang Low. “[Distribution-ally Robust Data Valuation](#)”. In *Proceedings of the 41th International Conference on Machine Learning (ICML2024)*, Vienna, Austria, Jul 21-27, 2024. [Acceptance rate: 27.5%].
- **Xiaoqiang Lin***, Zhaoxuan Wu*, Zhongxiang Dai, Wenyang Hu, Yao Shu, See-Kiong Ng, Patrick Jaillet, Bryan Kian Hsiang Low. “[Use Your INSTINCT: INSTRUCTION optimization for LLMs using Neural bandits Coupled with Transformers](#)”. In *Proceedings of the 41th International Conference on Machine Learning (ICML2024)*, Vienna, Austria, Jul 21-27, 2024. [Acceptance rate: 27.5%, co-first author].
- Jingtian Wang*, **Xiaoqiang Lin***, Rui Qiao*, Chuan-Sheng Foo, Bryan Kian Hsiang Low. “[Helpful or Harmful Data? Fine-tuning-free Shapley Attribution for Explaining Language Model Predictions](#)”. In *Proceedings of the 41th International Conference on Machine Learning (ICML2024)*, Vienna, Austria, Jul 21-27, 2024. [Acceptance rate: 27.5%, co-first author].
- **Xiaoqiang Lin***, Xinyi Xu*, See-Kiong Ng, Chuan Sheng Foo, Bryan Kian Hsiang Low. “[Fair yet Asymptotically Equal Collaborative Learning](#)”. In *Proceedings of the 40th International Conference on Machine Learning (ICML2023)*, Hawaii, Jul 23-29, 2023. [Acceptance rate: 28%, co-first author].

Publications (continued)

- Yuqiao Yang*, **Xiaoqiang Lin***, Geng Lin, Zhongyu Wei, Zengfeng Huang. “[Joint Representation Learning of Legislator and Legislation for Roll Call Prediction](#)”. In *Proceedings of the 29th International Joint Conference on Artificial Intelligence (IJCAI 2020)*, Yokohama, Japan, Jan 7-15, 2020. [Acceptance rate: 12.6%, co-first author].

Pre-Prints

- Wenyang Hu, Yao Shu, Zongmin Yu, Zhaoxuan Wu, **Xiaoqiang Lin**, Zhongxiang Dai, See-Kiong Ng, Bryan Kian Hsiang Low. “[Localized Zeroth-Order Prompt Optimization](#)”. Pre-print, arXiv, 2024.
- Yao Shu, **Xiaoqiang Lin**, Zhongxiang Dai, Bryan Kian Hsiang Low. “[Federated Zeroth-Order Optimization using Trajectory-Informed Surrogate Gradients](#)”. Pre-print, arXiv, 2023.

Book Chapters

- Xiaoqiang Lin**, Xinyi Xu, Zhaoxuan Wu, Rachael Hwee Ling Sim, See-Kiong Ng, Chuan-Sheng Foo, Patrick Jaillet, Trong Nghia Hoang, and Bryan Kian Hsiang Low. “[Fairness in Federated Learning](#)”. In *L. M. Nguyen, T. N. Hoang, P.-Y. Chen, editors, Federated Learning: Theory and Practice, chapter 16, pages 299-309, Academic Press, 2024.*
- Zhaoxuan Wu, Xinyi Xu, Rachael Hwee Ling Sim, Yao Shu, **Xiaoqiang Lin**, Lucas Agussurja, Zhongxiang Dai, See-Kiong Ng, Chuan-Sheng Foo, Patrick Jaillet, Trong Nghia Hoang, and Bryan Kian Hsiang Low. “[Data Valuation in Federated Learning](#)”. In *L. M. Nguyen, T. N. Hoang, P.-Y. Chen, editors, Federated Learning: Theory and Practice, chapter 16, pages 299-309, Academic Press, 2024.*
- Rachael Hwee Ling Sim, Sebastian Shenghong Tay, Xinyi Xu, Yehong Zhang, Zhaoxuan Wu, **Xiaoqiang Lin**, See-Kiong Ng, Chuan-Sheng Foo, Patrick Jaillet, Trong Nghia Hoang, and Bryan Kian Hsiang Low. “[Incentives in Federated Learning](#)”. In *L. M. Nguyen, T. N. Hoang, P.-Y. Chen, editors, Federated Learning: Theory and Practice, chapter 16, pages 299-309, Academic Press, 2024.*

Invited Talks

- Use Your INSTINCT: INSTruction optimization usIng Neural bandits Coupled with Transformers. @ [Deep Learning and Optimization Seminar](#) (Jointly organized by Westlake University, City University of Hong Kong, Peking University). Oct 24, 2023.

Work Experience

Jul 2020 – Aug 2021

- Machine Learning Engineer.**
[Ant Group.](#)

Utilize user data in Alipay to do fraud detection for insurance based on a recommendation system approach. This system profits **190 million CNY** per year. Submit a paper to ICDM 2021 based on personalized recommendations for fraud detection.

Work Experience (continued)

Jul 2018 – Oct 2018

■ **Data Science Intern.**

[Trip.com Group.](#)

Develop recommendation models to recommend personalized products (e.g., destinations/hotels/tickets) for different users in the Trip.com mobile app.

Honors and Awards

2023

■ Award of Teaching Fellowship, National University of Singapore (1 of 3 selected CS Ph.D. students).

■ Research Achievement Award, National University of Singapore.

2020

■ Outstanding Graduates, Fudan University.

2017, 2018, 2019

■ Excellent Student Scholarship, Fudan University.

Professional Services

■ **Conference Reviewer for ICML'2024.**

■ **Conference Reviewer for AISTATS'2024.**

■ **Conference Reviewer for AAAI'2024.**

■ **Conference Reviewer for ACML'2023.**

■ **Conference Reviewer for ICML'2021.**