

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 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. “[Instance Attribution for Interpretable NLP](#)”. 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.