

# Xiaoqiang Lin

Ph.D. Candidate

Department of Computer Science

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## Research Interest

- Data-centric AI for large models (LMs).
- 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, China.  
Advisor: Prof. [Zhongyu Wei](#).  
Thesis title: Graph neural networks-based representation learning of legislator and legislation for roll call prediction.  
GPA: 3.69/4.

## Research Publications

- **Xiaoqiang Lin**, Xinyi Xu, Zhaoxuan Wu, See-Kiong Ng, Bryan Kian Hsiang Low. “Distributionally 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].
- Jingtang 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%].
- **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].

## Research 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, CityU, Peking University). Oct 24, 2023.

## Industry Experience

Jul 2020 – Aug 2021

- Machine Learning Engineer.**

[Alibaba Group](#) / [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.

## Industry Experience (continued)

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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

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2023 ■ Award of Teaching Fellowship, National University of Singapore.

■ Research Achievement Award, National University of Singapore.

2020 ■ Outstanding Graduates, Fudan University.

2017, 2018, 2019 ■ Excellent Student Scholarship, Fudan University.

2016 ■ 3rd Place in National Mathematics Competition, China.

## Professional Services

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■ **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.**