Xiaoqiang Lin

Ph.D. Candidate

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Research Interests

- Data-efficient AI for LLMs (data selection in LLM pre-training and post-training).
- Prompt optimization for LLMs.
- Efficient long-context LLM inference.
- Data attribution.

Education

2021 - present — **National University of Singapore** — Singapore
Ph.D. in Computer Science. Advisors: Prof. See-Kiong Ng and Prof. Bryan Low. GPA: 4.83/5.

2016 - 2020 — **Fudan University** — Shanghai, China
Bachelor of Science in Statistics (Data Science Track). Advisor: Prof. Zhongyu Wei. GPA: 3.69/4.

Work Experience

Mar 2025 – Present — **Meta** — California, USA
Research Scientist Intern
Work on developing a new large language model architecture to reduce the latency/memory requirement for long-context inference applications (e.g., RAG, multi-turn conversation) in the Meta AI team.

Oct 2020 – Jul 2021 — **Ant Group** — Hangzhou, China
Machine Learning Engineer - Full Time
Work on recommendation system for risk management.

Refereed Conference Publications

* Indicates equal contribution.

1. Jingtan Wang, **Xiaoqiang Lin**, Rui Qiao, Pang Wei Koh, Chuan-Sheng Foo, Bryan Kian Hsiang Low. "NICE: Non-differentiable Evaluation Metric-based Data Selection for Instruction Tuning.". In *International Conference on Machine Learning (ICML), 2025.*

2. **Xiaoqiang Lin**, Xinyi Xu, See-Kiong Ng, Bryan Kian Hsiang Low. "Efficient Top-m Data Values Identification for Data Selection.". In *International Conference on Learning Representations (ICLR), 2025.*

3. Arun Verma, Zhongxiang Dai, **Xiaoqiang Lin**, Patrick Jaillet, Bryan Kian Hsiang Low. "Neural Dueling Bandits: Principled Preference-Based Optimization with Non-Linear Reward Function.". In *International Conference on Learning Representations (ICLR), 2025.*

4. Zhaoxuan Wu*, **Xiaoqiang Lin***, Zhongxiang Dai, Wenyang Hu, Yao Shu, See-Kiong Ng, Patrick Jaillet, Bryan Kian Hsiang Low. "Prompt Optimization with EASE? Efficient Ordering-aware Automated Selection of Exemplars". In *Proceedings of the 38th Neural Information Processing Systems (NeurIPS2024)*, Vancouver, Canada, Dec 9-15, 2024. [Acceptance rate: 25.8%].

Refereed Conference Publications (continued)

5. Zijian Zhou, **Xiaoqiang Lin**, Xinyi Xu, Alok Prakash, Daniela Rus, Bryan Kian Hsiang Low. "DETAIL: Task DEmonsTration Attribution for Interpretable In-context Learning". In *Proceedings of the 38th Neural Information Processing Systems (NeurIPS2024)*, Vancouver, Canada, Dec 9-15, 2024. [Acceptance rate: 25.8%].

6. Wenyang Hu, Yao Shu, Zongmin Yu, Zhaoxuan Wu, **Xiaoqiang Lin**, Zhongxiang Dai, See-Kiong Ng, Bryan Kian Hsiang Low. "Localized Zeroth-Order Prompt Optimization". In *Proceedings of the 38th Neural Information Processing Systems (NeurIPS2024 Spotlight)*, Vancouver, Canada, Dec 9-15, 2024. [Acceptance rate: 25.8%].

7. Xinyi Xu, Zhaoxuan Wu, Rui Qiao, Arun Verma, Yao Shu, Jingtan Wang, Xinyuan Niu, Zhenfeng He, Jiangwei Chen, Zijian Zhou, Gregory Kang Ruey Lau, Hieu Dao, Lucas Agussurja, Rachael Hwee Ling Sim, **Xiaoqiang Lin**, Wenyang Hu, Zhongxiang Dai, Pang Wei Koh, Bryan Kian Hsiang Low. "Position Paper: Data-Centric AI in the Age of Large Language Models". In *EMNLP 2024 Findings*, Miami, Florida, Nov 12 –16, 2024.

8. **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%].

9. **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%].

10. Jingtan 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%].

11. **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%].

12. 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%].

Workshop Papers & Pre-Prints

1. **Xiaoqiang Lin**, Zhongxiang Dai, Arun Verma, See-Kiong Ng, Patrick Jaillet, Bryan Kian Hsiang Low. "Prompt Optimization with Human Feedback". ICML 2024, Workshop on Models of Human Feedback for AI Alignment. Selected as Oral

2. Arun Verma, Zhongxiang Dai, **Xiaoqiang Lin**, Patrick Jaillet, Bryan Kian Hsiang Low. "Neural Dueling Bandits". ICML 2024, Workshop on Foundations of RL and Control.

3. 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

1. **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.*

2. 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.*

3. 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.*

Honors and Awards

2023	Award of Teaching Fellowship, National University of Singapore (1 of 3 selected CS Ph.D. students).
2023, 2024, 2025	Research Achievement Award, National University of Singapore.
2023	Research Incentive Award, National University of Singapore.
2020	Outstanding Graduates, Fudan University.
2017, 2018, 2019	Excellent Student Scholarship, Fudan University.

Professional Services

- **Conference Reviewer for** ICLR'2024.
- **Conference Reviewer for** NeurIPS'2024.
- **Conference Reviewer for** ICML'2021, 2024.
- **Conference Reviewer for** AISTATS'2024.
- **Conference Reviewer for** AAAI'2023, 2024, 2025.
- **Conference Reviewer for** ACML'2023.

Teaching Assistant

- CS3244 Machine Learning by Prof. Brian Lim and Lecturer Eric Han, Semester 1, AY24-25, SoC, National University of Singapore.
- CS3244 Machine Learning by Prof. Xavier Bresson, Semester 2, AY23-24, SoC, National University of Singapore.
- CS3244 Machine Learning by Prof. Brian Lim and Prof. Xavier Bresson, Semester 1, AY23-24, SoC, National University of Singapore.