

# Liangchen Luo

---

|                            |  |   |
|----------------------------|--|---|
| <b>Contact Information</b> | X.AI LLC<br>1450 Page Mill Rd<br>Palo Alto, CA 94304, USA  | Website: <a href="http://www.luolc.com">www.luolc.com</a><br>Email: <a href="mailto:luolc.witty@gmail.com">luolc.witty@gmail.com</a><br>Google Scholar: <a href="#">Liangchen Luo</a> |
| <b>Research Interests</b>  | Large Language Models, Reasoning, Natural Language Processing, Learning Theory   |   |
| <b>Education</b>           | <b>Peking University (PKU)</b><br>School of Earth and Space Science<br>B.Sc., in the Specialty of Geographical Information Science   | 2014 - 2019   |
| <b>Experience</b>          | <b>xAI</b> <ul style="list-style-type: none"><li>Member of Technical Staff</li></ul> Grok 3 Thinking, test-time compute. Coding agent.   | Feb 2025 - Present  |
|                            | <b>Google DeepMind</b> <ul style="list-style-type: none"><li>Senior Research Scientist</li><li>Research Engineer</li></ul> Gemini core contributor (reasoning team of post-training pillar); Gemini Thinking core contributor (tech-lead of process supervision for reasoning); Project Astra core contributor (tool-use and reasoning).   | Nov 2024 - Feb 2025<br>May 2024 - Nov 2024  |
|                            | <b>Google Research / Cloud AI</b> <ul style="list-style-type: none"><li>Research Engineer</li><li>Software Engineer</li><li>AI Resident, advised by <a href="#">Andrew Howard</a> and <a href="#">Mark Sandler</a></li></ul> LLM mathematical reasoning; alignment and post-training; open-ended text generation and self-critique; TPU infrastructure; large-scale model compression.   | Mar 2023 - May 2024<br>Sep 2021 - Mar 2023<br>Oct 2019 - Jun 2021   |
| <b>Publications</b>        | <ol style="list-style-type: none"><li>Accelerating Inference of Retrieval-Augmented Generation via Sparse Context Selection. Yun Zhu, Jia-Chen Gu, Caitlin Sikora, Ho Ko, Yinxiao Liu, Chu-Cheng Lin, Lei Shu, <b>Liangchen Luo</b>, Lei Meng, Bang Liu, Jindong Chen..<br/><i>In Proceedings of the 13th International Conference on Learning Representations (ICLR). 2025.</i></li><li>Fusion-Eval: Integrating Evaluators with LLMs. Lei Shu, Nevan Wichers, <b>Liangchen Luo</b>, Yun Zhu, Yinxiao Liu, Jindong Chen, Lei Meng.<br/><i>In Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP): Industry Track. 2024.</i></li><li>Multi-Step Problem Solving Through a Verifier: An Empirical Analysis on Model-Induced Process Supervision. Zihan Wang, Yunxuan Li, Yuexin Wu, <b>Liangchen Luo</b>, Le Hou, Hongkun Yu, Jingbo Shang.<br/><i>In Findings of the Association for Computational Linguistics: EMNLP. 2024.</i></li><li>Towards an On-Device Agent for Text Rewriting. Yun Zhu, Yinxiao Liu, Felix Stahlberg, Shankar Kumar, Yu-hui Chen, <b>Liangchen Luo</b>, Lei Shu, Renjie Liu, Jindong Chen, Lei Meng.<br/><i>In Findings of the Association for Computational Linguistics: NAACL. 2024.</i></li></ol> |   |

12. RewriteLM: An Instruction-Tuned Large Language Model for Text Rewriting.  
Lei Shu, **Liangchen Luo**, Jayakumar Hoskore, Yun Zhu, Yinxiao Liu, Simon Tong, Jindong Chen, Lei Meng.  
In *Proceedings of the 38th AAAI Conference on Artificial Intelligence (AAAI)*. 2024.
11. Adaptive Gradient Methods with Dynamic Bound of Learning Rate.  
**Liangchen Luo\***, Yuanhao Xiong\*, Yan Liu, Xu Sun.  
In *Proceedings of the 7th International Conference on Learning Representations (ICLR)*. 2019.
10. Learning Personalized End-to-End Goal-Oriented Dialog.  
**Liangchen Luo**, Wenhao Huang, Qi Zeng, Zaiqing Nie, Xu Sun.  
In *Proceedings of the 33rd AAAI Conference on Artificial Intelligence (AAAI)*. 2019.
9. Text Assisted Insight Ranking Using Context-Aware Memory Network.  
Qi Zeng\*, **Liangchen Luo\***, Wenhao Huang, Yang Tang.  
In *Proceedings of the 33rd AAAI Conference on Artificial Intelligence (AAAI)*. 2019.
8. An Auto-Encoder Matching Model for Learning Utterance-Level Semantic Dependency in Dialogue Generation.  
**Liangchen Luo\***, Jingjing Xu\*, Junyang Lin, Qi Zeng, Xu Sun.  
In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP)*. 2018.

#### Manuscripts

7. Improve Mathematical Reasoning in Language Models by Automated Process Supervision.  
**Liangchen Luo\***, Yinxiao Liu\*, Rosanne Liu, Samrat Phatale, Harsh Lara, Yunxuan Li, Lei Shu, Yun Zhu, Lei Meng, Jiao Sun, Abhinav Rastogi.  
*arXiv preprint arXiv:2406.06592*. 2024.
6. SiRA: Sparse Mixture of Low Rank Adaptation.  
Yun Zhu, Nevan Wichers, Chu-Cheng Lin, Xinyi Wang, Tianlong Chen, Lei Shu, Han Lu, Canoe Liu, **Liangchen Luo**, Jindong Chen, Lei Meng.  
*arXiv preprint arXiv:2311.09179*. 2023.
5. Critique Ability of Large Language Models.  
**Liangchen Luo**, Zi Lin, Yinxiao Liu, Lei Shu, Yun Zhu, Jingbo Shang, Lei Meng.  
*arXiv preprint arXiv:2310.04815*. 2023.
4. Bridging the Gap Between Object Detection and User Intent via Query-Modulation.  
Marco Fornoni, Chaochao Yan, **Liangchen Luo**, Kimberly Wilber, Alex Stark, Yin Cui, Boqing Gong, Andrew Howard.  
*arXiv preprint arXiv:2106.10258*. 2021.
3. Large-Scale Generative Data-Free Distillation.  
**Liangchen Luo**, Mark Sandler, Zi Lin, Andrey Zhmoginov, Andrew Howard.  
*arXiv preprint arXiv:2012.05578*. 2020.
2. Image Segmentation via Cellular Automata.  
Mark Sandler, Andrey Zhmoginov, **Liangchen Luo**, Alexander Mordvintsev, Ettore Randazzo, Blaise Agüera y Arcas.  
*arXiv preprint arXiv:2008.04965*. 2020.
1. MUSE: Parallel Multi-Scale Attention for Sequence to Sequence Learning.  
Guangxiang Zhao, Xu Sun, Jingjing Xu, Zhiyuan Zhang, **Liangchen Luo**.  
*arXiv preprint arXiv:1911.09483*. 2019.

#### Professional Service

- Program committee member, the AAAI Conference on Artificial Intelligence (AAAI). 2020.
- Program committee member, the Annual Meeting of the Association for Computational Linguistics (ACL). 2019.
- Program committee member, the Conference on Language Modeling (COLM). 2024, 2025.

- Program committee member, the Conference on Empirical Methods in Natural Language Processing (EMNLP). 2019.
- Program committee member, the International Conference on Learning Representations (ICLR). 2021, 2024, 2025.
- Program committee member, the International Conference on Machine Learning (ICML). 2023, 2024, 2025.
- Program committee member, the Conference on Neural Information Processing Systems (NeurIPS). 2023, 2024.