

# Tianze LUO

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<b>Research Interest</b>	<b>Graph Representation Learning:</b> Graph Neural Networks; Graph Signal Processing; Graph Generation; Graph-based Recommender Systems. <b>Foundation Models:</b> Diffusion Models; LLMs; Foundation Models for Graph-Structural Data.
<b>Education</b>	<div><div><b>Nanyang Technological University (NTU)</b> Jan 2020 - Present <i>Ph.D. Candidate in Computer Science, with Alibaba-NTU-IPP programme</i> Supervisor: Prof. Sinno Jialin Pan Thesis: “Improving Representation Learning on Graph-Structural Data for Classifications, Generations and Recommendations”</div><div><b>Nanyang Technological University (NTU)</b> Aug 2017 - Dec 2019 <i>Master of Engineering in Computer Science (part-time)</i> Supervisor: Prof. Ah-Hwee Tan Thesis: “Autonomous Multi-agent Collaborative Environment Exploration”</div><div><b>Nanyang Technological University (NTU)</b> Aug 2013 - Aug 2017 <i>B.Eng. in Electrical and Electronic Engineering (<b>First Class Honours</b>)</i></div><div><b>Université de Technologie de Troyes, France (UTT)</b> Aug 2015 - Jan 2016 <i>Exchange Programme</i></div></div>
<b>Working Experiences</b>	<div><div><b>TikTok</b> (Singapore) Apr 2024 - Present <i>Machine Learning Engineer</i> Developing Large Multimodal Models (LMM) for TikTok Live to perform various tasks. The LMM development involves large-scale dataset preparation, multi-node multi-GPU training, efficient online inferencing, etc.</div><div><b>Alibaba</b> (Hangzhou, China &amp; Singapore) Jan 2020 - Present <i>Alibaba-NTU-IPP Ph.D Programme</i> Developed recommender systems and algorithms for Ali-Express with transfer learning, to share the knowledge between the homepage and the item details page, and enhance the recommendation performance on both pages. Developed re-ranking models for modeling mutual influence between items within and across channels, to improve the click-through rate on the homepage for Ali-Express. Developed cross-country recommender systems for Lazada using graph-based recommendation models, to enhance the recommendation performance in the Southeast Asia market, and mitigate the data deficiency and cold start problem. Applying for the patent “<i>An Adaptive Data Augmentation Method For Deep Graph Representation Learning</i>”. Applying for the patent “<i>A Fast Graph Generation Method Based On A Deep Diffusion Model</i>”.</div><div><b>Alibaba</b> (Hangzhou, China) Oct 2019 - Dec 2019 <i>Algorithm Engineer</i> Developed recommender systems and algorithms for Ali-Express.</div><div><b>Nanyang Technological University</b> (Singapore) Aug 2017 - Oct 2019 <i>Project Officer</i> Built up real-time exploration and navigation methods for multi-robot systems. Researched on reinforcement learning methods for multi-agent systems.</div></div>

**Rakuten** (Tokyo, Japan)

May 2016 - Jul 2016

*Software Engineer Intern*

Developed Android SDK for Rakuten E-money App “Edy”, which supports online transactions and payments.

**ST-Engineering** (Singapore)

May 2015 - Jul 2015

*Intern*

Developed a taxi navigation Android App and tested a newly developed bus system.

## Publications

1. **Tianze Luo**, Yong Liu, Sinno Jialin Pan. “Collaborative Sequential Recommendations via Multi-view GNN-Transformers”. Accepted by ACM Transactions on Information Systems (ACM TOIS). (2024)
2. Zhanfeng Mo\*, **Tianze Luo**\* (co-first author), Sinno Jialin Pan. “Conditional Graph Generation with Graph Principal Flow Network”. Accepted by ACM Web Conference (WWW). (2024)
3. **Tianze Luo**, Zhanfeng Mo, Sinno Jialin Pan. “Learning Adaptive Multiresolution Transforms via Meta-Framelet-based Graph Convolutional Network”. Accepted by the International Conference on Learning Representations (ICLR). (2024)
4. Bosheng Ding, Chengwei Qin, Ruochen Zhao, **Tianze Luo**, Xinze Li, Guizhen Chen, Wenhan Xia, Junjie Hu, Anh Tuan Luu, Shafiq Joty. “Data Augmentation using LLMs: Data Perspectives, Learning Paradigms and Challenges”. Accepted by ACL findings. (2024)
5. **Tianze Luo**, Zhanfeng Mo, Sinno Jialin Pan. “Fast Graph Generation via Spectral Diffusion”. Accepted by IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI) (2023). <https://arxiv.org/abs/2211.08892>
6. **Tianze Luo**, Zhanfeng Mo, Sinno Jialin Pan. “Conditional Graph Generation with Graph Principal Flow Network”. International Conference on Machine Learning (ICML-23) Workshop on Structured Probabilistic Inference & Generative Modeling. (2023)
7. **Tianze Luo**, Qiu hao Zeng, Tianbo Li, Sinno Jialin Pan. “Meta-Contrast for Graph Representation Learning”. Major revision at IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI). (2022)
8. Quanyu Long, **Tianze Luo**, Wenya Wang, Sinno Jialin Pan. “Domain Confused Contrastive Learning for Unsupervised Domain Adaptation”. Proceedings of the North American Chapter of the Association for Computational Linguistics (NAACL-22). (2022)
9. Qiu hao Zeng, **Tianze Luo**, Boyu Wang. “Domain-Augmented Domain Adaptation”. arXiv preprint. (2022)
10. **Tianze Luo**, Zichen Chen, Budhitama Subagdja, Ah-Hwee Tan. “Real-time Hierarchical Map Segmentation for Coordinating Multi-Robot Exploration”. IEEE Access 11 (2022): 15680-15692.
11. Hao, Qi, **Tianze Luo**, and Guangda Huzhang. “Re-ranking with constraints on diversified exposures for homepage recommender system.” arXiv preprint arXiv:2112.07621. (2021)
12. Tianbo Li\*, **Tianze Luo**\* (co-first author), Yiping Ke, Sinno Jialin Pan. “Mitigating Performance Saturation in Neural Marked Point Processes: Architectures and Loss Functions.” Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining. (2021)
13. **Tianze Luo**, Budhitama Subagdja, Di Wang, Ah-Hwee Tan. “Multi-agent collaborative exploration through graph-based deep reinforcement learning.” 2019 IEEE International Conference on Agents (ICA-19). (2019)

Teaching Experiences	<b>Singapore University of Social Sciences</b> <i>Associate Lecturer</i> CET175 Introduction to Generative AI MKT365 Social Media Metrics & Analytics	Mar 2023 - Present
	<b>NTU School of Computer Science and Engineering</b> <i>Teaching Assistant</i> CZ3005 Artificial Intelligence SC1015 Introduction to Data Science & Artificial Intelligence CZ3005 Artificial Intelligence	Jan 2022 - May 2022 Jan 2022 - May 2022 Aug 2020 - Dec 2020
Honors & Awards	<b>Best Paper Award</b> “Multi-agent collaborative exploration through graph-based deep reinforcement learning.” 2019 IEEE International Conference on Agents (ICA-19). IEEE (2019)	
	Complete 2014–2015 and 2015-2016 NTU Undergraduate Research on Campus (URECA) with <b>distinction</b> .	
	Senior Middle Two (SM2) Scholarship (2012-2017), Singapore Ministry of Education.	
Open Source Projects	<b>PandaLLM</b> (Large Language Model for Chinese) with more than <b>1,000</b> stars. <a href="https://github.com/dandelionsllm/pandallm">https://github.com/dandelionsllm/pandallm</a>	
	<i>Released Base Models</i> (Pretrain and SFT): Panda-7B, Panda-Instruct-7B, Panda-13B, Panda-Instruct-13B, Flan-LLaMA-7B, Panda-OpenLLaMA-7B	
	<i>Released Models for Chat</i> (SFT): Panda-LLaMA-13B-Chat, Panda-LLaMA2-13B-Chat (v2)	
	<i>Released Models for Legal Services</i> (Pretrain and SFT): Legal-Panda-13B-Chat	
	<i>Released Models for Code Generation</i> (Pretrain and SFT): Code-Panda-13B-Python	
	<i>Released Models for Information Retrieval</i> : Panda-Index-large-zh, Panda-Index-large-en	
Professional Services	<i>Technical report</i> : Jiao, Fangkai*, Bosheng Ding*, <b>Tianze Luo*</b> (co-first author), and Zhanfeng Mo*. “Panda LLM: Training Data and Evaluation for Open-Sourced Chinese Instruction-Following Large Language Models.” arXiv preprint arXiv:2305.03025 (2023). <a href="https://arxiv.org/abs/2305.03025">https://arxiv.org/abs/2305.03025</a>	
	<b>Reviewer for Journals</b>  IEEE Transactions on Automation Science and Engineering (T-ASE) IEEE Transactions on Neural Networks and Learning Systems (TNNLS)	
	<b>Reviewer for Conferences</b>  International Joint Conference on Artificial Intelligence (IJCAI) Association for the Advancement of Artificial Intelligence (AAAI) International Conference on Machine Learning (ICML) International Conference on Learning Representations (ICLR) International World Wide Web Conference (WWW)	