

Shichang Zhang

CONTACT INFORMATION	Address: 32 Common St., Waltham 02451 E-mail: shzhang@hbs.edu Webpage: https://shichangzh.github.io/	
WORK EXPERIENCE	Harvard University <i>Postdoctoral Fellow</i>	Cambridge, MA Present
EDUCATION	University of California, Los Angeles <i>Ph.D. in Computer Science</i> Stanford University <i>M.S. in Statistics</i> University of California, Berkeley <i>B.A. in Statistics</i> Honors: Honors in Statistics, High Distinction	Los Angeles, CA June 2024 Stanford, CA Apr. 2019 Berkeley, CA May 2017
RESEARCH INTERESTS	Explainable AI, Data Attribution, Mechanistic Interpretability, Large Language Models, Graph Data Mining, Model Efficiency	
HONORS AND AWARDS	KDD Outstanding Reviewer (Top 10%) Amazon PhD Fellowship J.P.Morgan Chase AI PhD Fellowship KDD Excellence in Reviewing (30 in 1551) Snap Research Fellowship Honorable Mention ICML Top Reviewer (Top 10%) UCLA Graduate Division Fellowship	2025 2023 2023 2023 2022 2022 2021
PUBLICATIONS	Conference Papers: Automated Molecular Concept Generation and Labeling with Large Language Models Zimin Zhang*, Qianli Wu*, Botao Xia*, Fang Sun, Ziniu Hu, Yizhou Sun, Shichang Zhang (COLING 2025 , *equal contribution) FUSE: Measure-Theoretic Compact Fuzzy Set Representation for Taxonomy Expansion Fred Xu, Song Jiang, Zijie Huang, Xiao Luo, Shichang Zhang , Yuanzhou Chen, Yizhou Sun (ACL 2024 Findings) Predicting and Interpreting Energy Barriers of Metallic Glasses with Graph Neural Networks Haoyu Li*, Shichang Zhang* , Longwen Tang, Yizhou Sun (ICML 2024 , *equal contribution) SciBench Evaluating College-Level Scientific Problem-Solving Abilities of Large Language	

Models

Xiaoxuan Wang*, Ziniu Hu*, Pan Lu*, Yanqiao Zhu*, Jieyu Zhang, Satyen Subramaniam, Arjun R Loomba, **Shichang Zhang**, Yizhou Sun, Wei Wang (**ICML 2024**, *equal contribution)

Laplacian Score Benefit Adaptive Filter Selection for Graph Neural Networks
Yewen Wang, **Shichang Zhang**, Junghoo Cho, Yizhou Sun (**SDM 2024**)

Linkless Link Prediction via Relational Distillation
Zhichun Guo, William Shiao, **Shichang Zhang**, Yozen Liu, Nitesh Chawla, Neil Shah, Tong Zhao (**ICML 2023**)

PaGE-Link: Graph Neural Network Explanation for Heterogeneous Link Prediction
Shichang Zhang, Jiani Zhang, Xiang Song, Soji Adeshina, Da Zheng, Christos Faloutsos, Yizhou Sun (**WWW 2023**)

GStarX: Explaining Graph Neural Networks with Structure-Aware Cooperative Games
Shichang Zhang, Yozen Liu, Neil Shah, Yizhou Sun (**NeurIPS 2022**)

Graph-less Neural Networks, Teach Old MLPs New Tricks via Distillation
Shichang Zhang, Yozen Liu, Yizhou Sun, Neil Shah (**ICLR 2022**)

Graph Condensation for Graph Neural Networks
Wei Jin, Lingxiao Zhao, **Shichang Zhang**, Yozen Liu, Jiliang Tang, Neil Shah. (**ICLR 2022**)

Journal Papers:

An Explainable AI Approach using Graph Learning to Predict ICU Length of Stay
Tianjian Guo, Indranil Bardhan, Ying Ding, **Shichang Zhang** (**ISR Oct. 2024**)

Motif-driven Contrastive Learning of Graph Representations
Shichang Zhang*, Ziniu Hu*, Arjun Subramonian, Yizhou Sun (**TKDE Feb. 2024**, *equal contribution)

Workshop Papers and Pre-prints:

Building Bridges, Not Walls - Advancing Interpretability by Unifying Feature, Data and Model Component Attribution
Shichang Zhang, Tessa Han, Usha Bhalla, Himabindu Lakkaraju (Pre-print)

Generalized Group Data Attribution
Dan Ley, Suraj Srinivas, **Shichang Zhang**, Gili Rusak, Himabindu Lakkaraju (AT-TRIB@NeurIPS 2024)

Hierarchical Compression of Text-Rich Graphs via Large Language Models
Shichang Zhang, Da Zheng, Jiani Zhang, Qi Zhu, Xiang Song, Soji Adeshina, Christos Faloutsos, George Karypis, Yizhou Sun (pre-print)

Self-Control of LLM Behaviors by Compressing Suffix Gradient into Prefix Controller
Min Cai, Yuchen Zhang, **Shichang Zhang**, Fan Yin, Difan Zou, Yisong Yue, Ziniu Hu

(MI@ICML 2024)

Parameter-Efficient Tuning Large Language Models for Graph Representation Learning
Qi Zhu, Da Zheng, Xiang Song, **Shichang Zhang**, Bowen Jin, Yizhou Sun, George Karypis. (Pre-print)

Efficient Ensembles Improve Training Data Attribution
Junwei Deng*, Ting-Wei Li*, **Shichang Zhang**, Jiaqi Ma. (DMLR@ICML 2024, *equal contribution)

A Survey on Graph Neural Network Acceleration: Algorithms, Systems, and Customized Hardware
Shichang Zhang, Atefeh Sohrabizadeh, Cheng Wan, Zijie Huang, Ziniu Hu, Yewen Wang, Yingyan (Celine) Lin, Jason Cong, Yizhou Sun (pre-print)

INVITED TALKS	Explainable AI for Graph Data and More AI4LIFE Group at Harvard	Feb 2024
	Graph Neural Network Explanation for Heterogeneous Link Prediction Amazon Trans.AI Research Talks	July 2023
	International World Wide Web Conference	May 2023
	Structure-Aware Graph Neural Network Explanation AI Time NeurIPS Talk Series	Feb 2023
	Graph-less Neural Networks NVIDIA GNN Reading Group	May 2022
TEACHING EXPERIENCE	Instructor , University of California, Los Angeles CS97: Introduction to Data Science	Summer 2024
	Teaching Assistant , University of California, Los Angeles CS145: Introduction to Data Mining	Fall 2020, Fall 2021
	CS32: Introduction to Computer Science II	Spring 2021
ACADEMIC SERVICE	Conference Reviewer/Program Committee:	
	KDD - ACM SIGKDD Knowledge Discovery and Data Mining	2020, 2023 - 2025
	NeurIPS - Advances in Neural Information Processing Systems	2021 - 2024
	ICML - International Conference on Machine Learning	2022 - 2024
	ICLR - International Conference on Learning Representations	2024 - 2025
	AAAI - AAAI Conference on Artificial Intelligence	2023 - 2025
	WSDM - ACM International Web Search and Data Mining Conference	2023 - 2025
	SDM - SIAM International Conference on Data Mining	2024
	CIKM - ACM Conference on Information and Knowledge Management	2022 - 2023
	LOG - Learning on Graphs Conference	2023
	ICDM - IEEE International Conference on Data Mining	2021
	Journal Reviewer:	
	TPAMI - IEEE Transactions on Pattern Analysis and Machine Intelligence	
	TKDD - ACM Transactions on Knowledge Discovery from Data	

TKDE - IEEE Transactions on Knowledge and Data Engineering
TNNLS - IEEE Transactions on Neural Networks and Learning Systems
TAI - IEEE Transactions on Artificial Intelligence

Workshop Organizer:

Workshop on Regulatable Machine Learning @ NeurIPS 2024

Reading Group Organizer:

UCLA Data Mining Reading Group 2022 - 2024

Conference Volunteer:

KDD - ACM SIGKDD Knowledge Discovery and Data Mining 2023

MENTORSHIP	Arjun Subramonian (UCLA undergrad → UCLA PhD)	Mar. 2020 - Mar. 2021
	Qianli Wu (UCLA undergrad → Amazon SDE)	Mar. 2023 - Mar. 2024
	Haoyu Li (UCLA undergrad → UIUC PhD)	Mar. 2023 - July 2024
	Gaotang Li (UMich undergrad → UIUC PhD)	Oct. 2023 - June 2024
	Botao Xia (UCLA undergrad → UCLA Master)	Oct. 2023 - Aug 2024
	Zimin Zhang (UCLA undergrad → UIUC Master)	Oct. 2023 - Present
	Min Cai (Shenzhen University master)	Nov. 2023 - Present
	Hongzhe Du (UCLA master)	Mar. 2024 - Present
	Karim Saraipour (UCLA master)	Apr. 2024 - Present
Dan Ley (Harvard PhD)	Sept. 2024 - Present	

INDUSTRY WORK EXPERIENCE	Amazon Web Service (AWS)	Santa Clara, CA
	Applied Scientist Intern, Graph Machine Learning Team	June 2023 - Nov. 2023

- Proposed a framework for applying LLMs to text-rich graph data with hierarchical neighborhood compression, which allows LLMs to leverage the graph structure and handle long input text features gathered in a rich neighborhood.
- The proposed method outperformed traditional graph ML models on node classification benchmarks and will be incorporated into the Amazon DGL project.

Amazon Web Service (AWS)	Santa Clara, CA
Applied Scientist Intern, Graph Machine Learning Team	June 2022 - Oct. 2022

- Proposed a new framework to explain GNN link prediction for recommendation on graph data, which improves user trust in the model and helps developers debug the model. Work published in WWW 2023.
- The implemented framework will be incorporated into the Amazon Neptune ML project in production.

Snap Research	Los Angeles, CA
Research Intern, Computational Social Science Team	June 2021 - Sept. 2021

- Proposed a cross-model distillation framework to transfer knowledge from GNNs to MLPs, which speeds up model inference by 179 times and facilitates model deployment on latency-constraint applications. Work published in ICLR 2022.
- Worked on condensing large-scale training graphs to small synthetic graphs by over 90% reduction rate while maintaining competitive model performance for GNNs

trained from scratch, which significantly saves storage space and achieves efficient continue learning. Work published in ICLR 2022.

WeWork Inc.

Palo Alto, CA

Data Scientist Intern, Research and Applied Science Team

June 2019 - Sept. 2019

- Implemented a data processing pipeline in SQL and Python for data querying, data cleaning, and feature engineering.
- Trained a Gradient Boosted Tree model on two million customer data to predict occupancy rate for WeWork buildings and achieved 0.093 MAE on the test set.
- Presented the pricing model as a selected outstanding project to the Research and Applied Science team including the VP.

SKILLS

Programming: Python (PyTorch, Hugging Face, DGL), C++, R, Java, Linux, Git

Natural Language: Mandarin Chinese (Native), English (Proficient)