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## ACADEMIC BACKGROUNDS

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**Department of Computer Science, Emory University**  
*Tenure-Track Assistant Professor*

*Aug. 2020 - present*  
*Atlanta, GA, US*

- Research interests: graph data mining, applied machine learning, knowledge graphs, federated learning; recommender systems, social networks, neuroscience, healthcare.
- Assistant Professor (courtesy appointment), Department of Biostatistics and Bioinformatics, Rollins School of Public Health (RSPH).
- Assistant Professor (courtesy appointment), Center for Data Science, Nell Hodgson Woodruff School of Nursing.
- Core Faculty, Emory Global Diabetes Research Center (EGDRC).
- Center Member, Georgia Center for Diabetes Translation Research (GCDTR).
- CS Chair Search Committee, CS Faculty Search Committee, CSI Ph.D. Admission Committee, Dean's Teaching Fellowship Faculty Committee, Academic Standards Committee (Natural Science and Mathematics).
- Mentor at the NSF REU/RET in Maths/CS at Emory; Mentor at the KDD Undergraduate Consortium.

**Intelligent Systems Lab, Oxford University**

*Apr. 2020 - Mar. 2022*

*Postdoctoral Research Fellow (part-time, remote), Supervisor: Thomas Lukasiewicz*      *Oxford, UK*

- Research interests: multi-modality knowledge extraction, question answering, commonsense reasoning.

**Data Mining Group, University of Illinois, Urbana Champaign**

*Aug. 2014 - Dec. 2020*

*Ph.D. in Computer Science, Research Assistant, Teaching Assistant*

*Committee: Jiawei Han (chair), Jian Peng, Chengxiang Zhai, Jure Leskovec*      *Urbana, IL, US*

- GPA 3.95/4.0; Research interests: graph data mining, network data science, applied machine learning.
- Thesis: Multi-Facet Graph Mining with Contextualized Projections.

**Chu Kochen Honors College, Zhejiang University**

*Sep. 2010 - Jun. 2014*

*B.Eng. in Computer Science & Technology, Advisor: Xiaofei He*

*Hangzhou, Zhejiang, China*

- GPA: Major: 3.97/4.0, Overall: 3.86/4.0; Ranking: Top 2% of 201 students.

## SELECTED HONORS

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- **ACM SIGKDD Rising Star Award** (one winner a year across the world), 2025.
- **NIH/CDC 1% Grant Awardee** (Cr. Dr. Hui Shao), 2025.
- **NSF CAREER Award** (No. 2442172), 2025.
- **Best Paper Award** (First Place) of MedInfo, 2025.
- Distinguished Vision Award of KDD Health Day, 2025.
- PennAITech A2 Pilot Award (Cr. Dr. Zhe He), 2025.
- dkNET AI Pilot Award (Cr. Dr. Jin Zhou), 2025.
- Tan Chin Tuan Exchange Fellowship for International Visiting Faculty, 2025.
- Outstanding Associate Editor for IEEE TNNLS, 2024.
- Stanford/Elsevier World's Top 2% Scientists List, 2024.
- EGDRC Doctoral Support Award (Cr. Ran Xu), 2024.
- MCBIOS Young Scientist Excellence Award (Cr. Jiaying Lu), 2024.

- Best Poster Runner-up of SDM Doctoral Forum (Cr. Han Xie), 2024.
- Best Paper Award of KDD-FedKDD, 2024.
- **NIH K25 (Career) Award** (No. K25DK135913), 2023.
- NSF NCS Foundations Award– Lead PI (No. 2319449), 2023.
- NSF IIS/III Core Medium Award– Emory PI (No. 2312502), 2023.
- DARPA AI Forward Scholarship, 2023.
- Microsoft Accelerating Foundation Models Research Award, 2023.
- OpenAI Researcher Access Award, 2023.
- **Best Paper Award** of ML4H, 2022.
- **Best Paper Award** of KDD Health Day, 2022.
- Best Paper Award of CIKM-FedGraph, 2022.
- Amazon Research Award, 2022.
- Emory University Research Committee Award, 2022.
- Halle Global Research Award, 2021.
- **Best Paper Award** of ICDM (1 from 930 submissions), 2020.
- UIUC Doctoral Dissertation Completion Fellowship (at most one per department), 2020.
- Yunni & Maxine Pao Memorial Fellowship for research accomplishments and leadership activities, 2019.

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## PEER-REVIEWED PUBLICATIONS

### Since 2021 (Tenure-Track):

- Xiaoda Wang, Kaiqiao Han, Yuhao Xu, Xiao Luo, Yizhou Sun, Wei Wang, **Carl Yang**: *SE-Diff: Simulator and Experience Enhanced Diffusion Model for Comprehensive ECG Generation*. Proceedings of the International Conference on Learning Representations (**ICLR**), 2026.
- Ran Xu, Yuchen Zhuang, Yishan Zhong, Yue Yu, Zifeng Wang, Xingru Tang, Hang Wu, May Dongmei Wang, Peifeng Ruan, Donghan Yang, Tao Wang, Guanghua Xiao, Xin Liu, **Carl Yang**, Yang Xie, Wenqi Shi: *MedAgentGym: A Scalable Agentic Training Environment for Code-Centric Reasoning in Biomedical Data Science*. Proceedings of the International Conference on Learning Representations (**ICLR**), 2026.
- Ran Xu, Jingjing Chen, Jiayu Ye, Yu Wu, Jun Yan, **Carl Yang**, Hongkun Yu: *Boosting Agentic Reasoning in LLM Judges via Tool-Integrated Reinforcement Learning*. Proceedings of the International Conference on Learning Representations (**ICLR**), 2026.
- Zheng Huang, Enpei Zhang, Yinghao Cai, Weikang Qiu, **Carl Yang**, Elynn Chen, Xiang Zhang, Rex Ying, Dawei Zhou, Yujun Yan: *Seeing Through the Brain: New Insights from Decoding Visual Stimuli with fMRI*. Proceedings of the International Conference on Learning Representations (**ICLR**), 2026.
- Yi-Fei Wen, Hang Liang, **Carl Yang**, Wen-Bo Xie, Yajun Du, Xianyong Li, Yan-Li Lee: *Spatio-Temporal Fusion in Graph Neural Network for Streaming Knowledge Tracing*. Proceedings of the International Conference on Database Systems for Advanced Applications (**DASFAA**), 2026.
- Lihui Liu, Jiayuan Ding, Subhabrata Mukherjee, **Carl Yang**: *MixRAG : Mixture-of-Experts Retrieval-Augmented Generation for Textual Graph Understanding and Question Answering*. Proceedings of the International World Wide Web Conference (**WWW**), 2026.
- Qirui Hao, Kewei Cheng, Tongze Zhang, Hongyuan Liu, Junming Shao, **Carl Yang**: *A Unified Framework for Rule Learning: Integrating Commonsense Knowledge from LLMs with Structured Knowledge from Knowledge Graphs*. Proceedings of the International World Wide Web Conference (**WWW**), 2026.
- Huaming Du, Tao Hu, Yijie Huang, Yu Zhao, Guisong Liu, Tao Gu, Gang Kou, **Carl Yang**: *Traceable Latent Variable Discovery Based on Multi-Agent Collaboration*. Proceedings of the International World Wide Web Conference (**WWW**), 2026.
- Yuzhang Xie, Yuhua Wu, Ruiyu Wang, Xiao Hu, **Carl Yang**: *Hypergraph-based Pre-training for Atrial Fibrillation Prediction in ESUS Patients*. Abstract in the International Stroke Conference, 2026.

- Yuzhang Xie, Yuhua Wu, Fadi Nahab, Xiao Hu, **Carl Yang**: *Personalized Blood Pressure Management After Endovascular Thrombectomy in Large Vessel Occlusion Stroke*. Abstract in the International Stroke Conference, 2026.
- Pengxiang Zhan, Binteng Cai, Jinxu Zhang, Hang Lv, Yanchao Tan, Zhigang Lin, Xiping Chen, **Carl Yang**: *CARE-Agent: Multi-Agent Collaboration with Conflict-Aware Routing Mechanism for Diagnosis Prediction*. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (**ICASSP**), 2026.
- Kaisong Zhang, Hang Lv, Yanchao Tan, Zhigang Lin, Hengyu Zhang, Xiping Chen, **Carl Yang**: *SHARK: Modeling Semantic Hierarchy of Medical Code via Residual k-means Quantization*. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (**ICASSP**), 2026.
- Zixuan Guo, Hang Lv, Yanchao Tan, Zhigang Lin, Hengyu Zhang, Xiping Chen, **Carl Yang**: *Compact Representation Learning for Multimodal Drug-Drug Interaction Event Prediction*. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (**ICASSP**), 2026.
- Keqi Han, Yao Su, Songlin Zhao, Charles Gillespie, Boadie Dunlop, Daniel Barron, Randy Hirschtick, Liang Zhan, Lifang He, Xiang Li, **Carl Yang**: *Atlas-Free Functional Brain Connectome Analysis via Task-Driven Parcellation*. Proceedings of the IEEE International Symposium on Biomedical Imaging (**ISBI**), 2026.
- Jingqi Lu, Keqi Han, Yun Wang, Lu Mi, **Carl Yang**: *A Benchmark Analysis of Graph and Non-Graph Methods for Caenorhabditis Elegans Neuron Classification*. Proceedings of the IEEE International Symposium on Biomedical Imaging (**ISBI**), 2026.
- Keqi Han, Yao Su, Lifang He, Liang Zhan, Sergey Plis, Vince Calhoun, **Carl Yang**: *Rethinking Functional Brain Connectome Analysis: Do Graph Deep Learning Models Help*. **npj Artificial Intelligence**, 2026.
- Minh H N Le, Khanh T Q Le, Tuan Vinh, Thanh-Huy Nguyen, Han H Huynh, Khoa D Pham, Anh Mai Vu, Hien Quang Kha, Phat Ky Nguyen, Ulas Bagci, Min Xu, **Carl Yang**, Phat Kim Huynh, Nguyen Quoc Khanh Le: *Ultra-ECP: Ellipse-Constrained and Point-Robust Foundation Model Adaptation for Fetal Cardiac Ultrasound Segmentation*. Proceedings of the International Conference on Medical Imaging with Deep Learning (**MIDL**), 2026.
- Hengyu Zhang, Xuyun Zhang, Pengxiang Zhan, Linhao Luo, Hang Lv, Yanchao Tan, Shirui Pan, **Carl Yang**: *EviCare: Enhancing Diagnosis Prediction with Deep Model-Guided Evidence for In-Context Reasoning*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2026.
- Hang Lv, Zixuan Guo, Yanchao Tan, Wanzi Shao, Hengyu Zhang, **Carl Yang**: *Awaken the Giant: Activating LLMs via Deep Model Guidance for Boundary-aware Medication Recommendation*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2026.
- Shengbo Gong, Mohammad Hashemi, Juntong Ni, **Carl Yang**, Wei Jin: *Scalable Graph Condensation with Evolving Capabilities*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2026.
- Dongxiao He, Yiqi Dong, Xiaobao Wang, Meng Ge, **Carl Yang**, Di Jin, Witold Pedrycz: *Unveiling Fine-grained Deceptive Patterns in Multi-modal Fake News: A Explainable Neuro-Symbolic Framework*. IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2026.
- **Carl Yang**, Senjuti Basu Roy, Zhenhui Jessie Li, Jaap Kamps, Meeyoung Cha, Chanyoung Park, Noseong Park: *Report on the 34th ACM Conference on Information and Knowledge Management (CIKM 2025)*. The ACM SIGIR Forum, 2025.
- Xincan Feng, Hejie Cui, Kazuki Hayashi, Huy Hien Vu, Kenta Suzuki, Noriki Nishida, Hidetaka Kamigaito, Yuji Matsumoto, Taro Watanabe, **Carl Yang**: *LLMKG+: Systematically Improving Knowledge Quality and Coverage in KGs using LLMs– A Case Study in Medical Domain*. **AI Open**, 2025.

- Huaming Du, Yijie Huang, Su Yao, Yiyang Wang, Yueyang Zhou, Jingwen Yang, Jinshi Zhang, Han Ji, Yu Zhao, Guisong Liu, Hegui Zhang, **Carl Yang**, Gang Kou: *Transferable Graph Condensation from the Causal Perspective*. Proceedings of the AAAI International Conference on Artificial Intelligence (**AAAI**), 2025.
- Zongliang Ji, Ziyang Zhang, Xincheng Tan, Matthew Thompson, Anna Goldenberg, **Carl Yang**, Rahul G Krishnan, Fan Zhang: *Dialogue to Question Generation for Evidence-based Medical Guideline Agent Development*. Proceedings of the Machine Learning for Health Symposium (**ML4H**), 2025.
- Guanchen Wu, Zuhui Chen, Yuzhang Xie, **Carl Yang**: *Towards Automatic Evaluation and Selection of PHI De-identification Models via Multi-Agent Collaboration*. Proceedings of the Open Conference of AI Agents for Science (**Agents4Science**), **Spotlight**, 2025.
- Xiaoda Wang, Yuji Zhao, Kaiqiao Han, Xiao Luo, Sanne van Rooij, Jennifer Stevens, Lifang He, Liang Zhan, Yizhou Sun, Wei Wang, **Carl Yang**: *Conditional Neural ODE for Longitudinal Parkinson's Disease Progression Forecasting*. Proceedings of the IEEE International Conference on Bioinformatics and Biomedicine (**BIBM**), 2025.
- Ran Xu, Yuchen Zhuang, Zihan Dong, Ruiyu Wang, Yue Yu, Joyce C Ho, Linjun Zhang, Haoyu Wang, Wenqi Shi, **Carl Yang**: *AceSearcher: Bootstrapping Reasoning and Search for LLMs via Reinforced Self-Play*. Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2025.
- Zitong Shi, Guancheng Wan, Haixin Wang, Ruoyan Li, Zijie Huang, Wanxia Zhao, Yijia Xiao, Xiao Luo, **Carl Yang**, Yizhou Sun, Wei Wang: *Don't Forget the Enjoin: FocalLoRA for Instruction Hierarchical Alignment in Large Language Models*. Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2025.
- Shengbo Gong, Juntong Ni, Naveen Sachdeva, **Carl Yang**, Wei Jin: *GC4NC: A Benchmark Framework for Graph Condensation on Node Classification with New Insights*. Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2025.
- Juntong Ni, Saurabh Kataria, Shengpu Tang, **Carl Yang**, Xiao Hu, Wei Jin: *PPG-Distill: Efficient Photoplethysmography Signals Analysis via Foundation Model Distillation*. Workshop on Learning from Time Series for Health: The Conference on Neural Information Processing Systems (**NeurIPS-TS4H**), 2025.
- Yuhao Xu, Xiaoda Wang, Yi Wu, Wei Jin, Xiao Hu, **Carl Yang**: *ECG-MoE: Mixture-of-Expert Electrocardiogram Foundation Model*. Workshop on Learning from Time Series for Health: The Conference on Neural Information Processing Systems (**NeurIPS-TS4H**), 2025.
- Ran Xu, Yuchen Zhuang, Yishan Zhong, Yue Yu, Xingru Tang, Hang Wu, May Dongmei Wang, Peifeng Ruan, Donghan Yang, Tao Wang, Guanghua Xiao, **Carl Yang**, Yang Xie, Wenqi Shi: *MedAgentGym: Training LLM Agents for Code-Based Medical Reasoning at Scale*. Workshop on GenAI for Health: The Conference on Neural Information Processing Systems (**NeurIPS-GenAI4Health**), 2025.
- Victoria Yan, Honor Chotkowski, Fengran Wang, Xinhui Li, **Carl Yang**, Jiaying Lu, Runze Yan, Xiao Hu, Alex Fedorov: *Towards Synthesizing Normative Data for Cognitive Assessments Using Generative Multimodal Large Language Models*. Workshop on GenAI for Health: The Conference on Neural Information Processing Systems (**NeurIPS-GenAI4Health**), 2025.
- Runze Yan, Hanqi Luo, Jiaying Lu, Darren Liu, Hannah Posluszny, Mehak Dhaliwal, Janice MacLeod, Yao Qin, **Carl Yang**, Terry Hartman, Xiao Hu: *DietAI24: A Framework for Comprehensive Nutrition Estimation using Multimodal Large Language Models*. **Communications Medicine**, 2025.
- Pareeta Kotecha, William Troy Donahoo, Naykky Singh Ospina, Anu Sharma, Ramon Sun, **Carl Yang**, Jiang Bian, Jingchuan Guo: *Preoperative GLP-1 RA Use and Postoperative Respiratory Complications in Patients Undergoing Elective Surgeries: A Target Trial Emulation Study*. American Journal of Respiratory and Critical Care Medicine (**AJRCCM**), 2025.
- Tuan Vinh, Tao Li, **Carl Yang**, Monika Raj: *Beyond Prediction: AI as a Creative Partner in Organic Synthesis*. **Synlett**, 2025.
- Meiyu Lin, Haichuan Zhang, Jiale Lao, Renyuan Li, Yuanchun Zhou, **Carl Yang**, Yang Cao, Mingjie

- Tang: *Are Your LLM-based Text-to-SQL Models Secure? Exploring SQL Injection via Backdoor Attacks*. Proceedings of the ACM International Conference on Management of Data (**SIGMOD**), 2025.
- Yanchao Tan, Hang Lv, Pengxiang Zhan, Shiping Wang, **Carl Yang**: *Graph-oriented Instruction Tuning of Large Language Models for Generic Graph Mining*. IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2025.
  - Ran Xu, Kaixin Ma, Wenhao Yu, Hongming Zhang, Joyce C Ho, **Carl Yang**, Dong Yu: *Retrieval-augmented GUI Agents with Generative Guidelines*. Proceedings of the Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2025.
  - Huaming Du, Lei Yuan, Guisong Liu, **Carl Yang**, Gang Kou: *Explainable Text Classification with LLMs: Enhancing Performance through Dialectical Prompting and Explanation-Guided Training*. Proceedings of the Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2025.
  - Jiachen Zhou, Han Xie, **Carl Yang**: *Graph Personalized Federated Learning via Client Network Learning*. Transactions on Machine Learning Research (**TMLR**), 2025.
  - Yuzhang Xie, Xu Han, Ran Xu, Xiao Hu, Jiaying Lu, **Carl Yang**: *HypKG: Hypergraph-based Knowledge Graph Contextualization for Precision Healthcare*. Proceedings of the International Semantic Web Conference (**ISWC**), 2025.
  - Ran Xu, Wenqi Shi, Yuchen Zhuang, Yue Yu, Joyce C Ho, Haoyu Wang, **Carl Yang**: *Collab-RAG: Boosting Retrieval-Augmented Generation for Complex Question Answering via White-Box and Black-Box LLM Collaboration*. Proceedings of the Conference on Language Modeling (**COLM**), 2025.
  - Hang Lv, Zixuan Guo, Zijie Wu, Yanchao Tan, Guofang Ma, Zhigang Lin, Xiping Chen, Hong Cheng, **Carl Yang**: *MedAlign: Enhancing Combinatorial Medication Recommendation with Multi-modality Alignment*. Proceedings of the ACM International Conference on Multimedia (**ACMMM**), 2025.
  - Yuzhang Xie, Hejie Cui, Ziyang Zhang, Jiaying Lu, Kai Shu, Fadi Nahab, Xiao Hu, **Carl Yang**: *KERAP: A Knowledge-Enhanced Reasoning Approach for Accurate Zero-shot Diagnosis Prediction Using Multi-agent LLMs*. Proceedings of the American Medical Informatics Association Annual Summit (**AMIA**), 2025.
  - Yuhao Xu, Xiaoda Wang, Jiaying Lu, Sirui Ding, Defu Cao, Huaxiu Yao, Yan Liu, Xiao Hu, **Carl Yang**: *EnECG: Efficient Ensemble Learning for Electrocardiogram Multi-task Foundation Models*. Proceedings of the American Medical Informatics Association Annual Summit (**AMIA**), 2025.
  - Hejie Cui, Jiaying Lu, Ran Xu, Shiyu Wang, Wenjing Ma, Yue Yu, Shaojun Yu, Xuan Kan, Chen Ling, Liang Zhao, Zhaohui S Qin, Joyce C Ho, Tianfan Fu, Jing Ma, Mengdi Huai, Fei Wang, **Carl Yang**: *A Review on Knowledge Graphs for Healthcare: Resources, Applications, and Promises*. Journal of Biomedical Informatics (**JBIM**), 2025.
  - Chen Ling, Xujiang Zhao, Jiaying Lu, Chengyuan Deng, Can Zheng, Junxiang Wang, Tanmoy Chowdhury, Yun Li, Hejie Cui, Xuchao Zhang, Tianjiao Zhao, Amit Panalkar, Dhagash Mehta, Stefano Pasquali, Wei Cheng, Haoyu Wang, Yanchi Liu, Zhengzhang Chen, Haifeng Chen, Chris White, Quanquan Gu, Jian Pei, **Carl Yang**, Liang Zhao: *Domain Specialization as the Key to Make Large Language Models Disruptive: A Comprehensive Survey*. ACM Computing Surveys (**CSUR**), 2025.
  - Huaming Du, Yujia Zheng, Baoyu Jing, Yu Zhao, Gang Kou, Guisong Liu, Tao Gu, Weimin Li, **Carl Yang**: *Causal Discovery through Synergizing Large Language Model and Data-Driven Reasoning*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
  - Jiayi Yang, Yiling Jia, **Carl Yang**, Yi Liang, Lu Lin: *Boosting E-commerce Content Diversity: A Graph-based RAG Approach with User Reviews*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
  - Ran Xu, Patrick Jiang, Linhao Luo, Cao Xiao, Adam Cross, Shirui Pan, Jimeng Sun, **Carl Yang**: *A Survey on Unifying Large Language Models and Knowledge Graphs for Medicine and Healthcare*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.

- Zewen Liu, Xiaoda Wang, Bohan Wang, Zijie Huang, **Carl Yang**, Wei Jin: *Graph ODEs and Beyond: A Comprehensive Survey on Integrating Differential Equations with Graph Neural Networks*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- Xiao Luo, Junyu Luo, Huiyu Jiang, Hang Zhou, Zhiping Xiao, Wei Ju, **Carl Yang**, Ming Zhang, Yizhou Sun: *Future Matters for Present: Towards Effective Physical Simulation over Meshes*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- Yuxuan Cao, Jiarong Xu, Chen Zhao, Jiaan Wang, **Carl Yang**, Chunping Wang, Yang Yang: *How to use Graph Data in the Wild to Help Graph Anomaly Detection?*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- Yuanchen Bei, Weizhi Chen, Hao Chen, Sheng Zhou, **Carl Yang**, Jiapei Fan, Longtao Huang, Jiajun Bu: *Correlation-Aware Graph Convolutional Networks for Multi-Label Node Classification*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- Peipei Ping, Wei Ding, **Carl Yang**: *KDD 2025 Health Day: Harnessing AI Opportunities in Biomedicine and Healthcare*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- **Carl Yang**, Guancheng Wan, Zhuangdi Zhu, Zheng Xu, Junyuan Hong, Nathalie Baracaldo, Neil Shah, Salman Avestimehr, Jiayu Zhou: *FedKDD 2025: The 2025 International Joint Workshop on Federated Learning for Data Mining and Graph Analytics*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- Songyuan Liu, Ziyang Zhang, Runze Yan, Wei Wu, **Carl Yang**, Jiaying Lu: *Measuring Spiritual Values and Bias of Large Language Models*. Workshop on Large Language Models for Scientific and Societal Advances: The ACM International Conference on Knowledge Discovery and Data Mining (**KDD-SciSocLLM**), 2025.
- Zhenghong Lin, Yanchao Tan, Jiamin Chen, Hengyu Zhang, Chaochao Chen, Shiping Wang, **Carl Yang**: *Unified Heterogeneous Hypergraph Construction for Incomplete Multimedia Recommendation*. ACM Transactions on Information Systems (**TOIS**), 2025.
- Yanchao Tan, Hang Lv, Yunfei Zhan, Guofang Ma, Bo Xiong, **Carl Yang**: *BoxLM: Unifying Structures and Semantics of Medical Concepts for Diagnosis Prediction in Healthcare*. Proceedings of the International Conference on Machine Learning (**ICML**), 2025.
- Zhen Xiang, Linzhi Zheng, Yanjie Li, Junyuan Hong, Qinbin Li, Han Xie, Jiawei Zhang, Zidi Xiong, Chulin Xie, **Carl Yang**, Dawn Song, Bo Li: *GuardAgent: Safeguard LLM Agents via Knowledge-Enabled Reasoning*. Proceedings of the International Conference on Machine Learning (**ICML**), 2025.
- Zitong Shi, Guancheng Wan, Guibin Zhang, Wenke Huang, He Li, **Carl Yang**, Mang Ye: *EAGLES: Towards Effective, Efficient, and Economical Federated Graph Learning via Unified Sparsification*. Proceedings of the International Conference on Machine Learning (**ICML**), 2025.
- Zitong Shi, Guancheng Wan, Wenke Huang, Guibin Zhang, Jiawei Shao, Mang Ye, **Carl Yang**: *Privacy-Enhancing Paradigms within Federated Multi-Agent Systems*. Workshop on Collaborative and Federated Agent Workflows: The International Conference on Machine Learning (**ICML-CFAgentic**), 2025.
- Hong kyu Lee, Qiuchen Zhang, **Carl Yang**, Jian Lou, Li Xiong: *Contrastive Unlearning: A Contrastive Approach to Machine Unlearning*. Proceedings of the International Joint Conference on Artificial Intelligence (**IJCAI**), 2025.
- Wenxi Huang, Yuru Zhu, Stephen E Kimmel, Mustafa M Ahmed, Steven M Smith, Yao An Li, **Carl Yang**, Jiang Bian, Yong Cheng, Jingchuan Guo: *Effect of Neighborhood Deprivation on Racial Disparities in Heart Failure Outcomes Using A Counterfactual Framework*. Journal of American College of Cardiology: Advances (**JACC: Advances**), 2025.
- Jiawei Nie, Keqi Han, Tianyi Zhang, Chenyu You, Sanne van Rooij, Jennifer Stevens, Boadie Dunlop, Charles Gillespie, **Carl Yang**: *Brain Network State Transformer: Leveraging State Functional Connectivity for Enhanced Brain Network Analysis*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society (**EMBC**), 2025.

- Xinpeng Wang, Rong Zhou, Han Xie, Xiaoying Tang, Lifang He, **Carl Yang**: *ClusMFL: A Cluster-Enhanced Framework for Modality-Incomplete Multimodal Federated Learning in Brain Imaging Analysis*. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society (**EMBC**), 2025.
- Tianyi Zhang, Keqi Han, Jiawei Nie, Chenyu You, Sanne van Rooij, Jennifer Stevens, Boadie Dunlop, Charles Gillespie, **Carl Yang**: *Causal Brain Connectivity: Integrating Granger Directed Graphs in fMRI Analysis*. Proceedings of the International Conference of Artificial Intelligence in Medicine (**AIME**), 2025.
- Xiaoda Wang, Yuji Zhao, Kaiqiao Han, Xiao Luo, Sanne van Rooij, Jennifer Stevens, Lifang He, Liang Zhan, Yizhou Sun, Wei Wang, **Carl Yang**: *Conditional Neural ODE for Longitudinal Parkinson's Disease Progression Forecasting*. Late-Breaking Abstract in the Organization for Human Brain Mapping Annual Meeting (**OHBM**), 2025.
- Keqi Han, Yao Su, Songlin Zhao, Charles Gillespie, Boadie Dunlop, Randy Hirschtick, Daniel Barron, Liang Zhan, Lifang He, Xiang Li, **Carl Yang**: *Atlas-Free Functional Brain Connectome Analysis via Task-Driven Parcellation*. Late-Breaking Abstract in the Organization for Human Brain Mapping Annual Meeting (**OHBM**), 2025.
- Cheng Wang, Yu Jiang, Zhihao Peng, Chenxin Li, Changbei Bang, **Carl Yang**, Lifang He, Daniel Barron, Randy Hirschtick, Byung-Hoon Kim, Xiang Li, Yixuan Yuan: *Towards A General-Purpose Foundation Model for fMRI Analysis*. Late-Breaking Abstract in the Organization for Human Brain Mapping Annual Meeting (**OHBM**), 2025.
- Xiaoyu Wang, Haoyong Ouyang, Balu Bhasuran, Xiao Luo, Karim Hanna, Mia Liza A Lustria, **Carl Yang**, Zhe He: *Lab-AI: Using Retrieval Augmentation to Enhance Language Models for Personalized Lab Test Interpretation in Clinical Medicine*. Proceedings of the IEEE International Conference on Healthcare Informatics (**ICHI**), 2025.
- Ziyang Zhang, Lily Wang, Weimin Meng, Chang Liu, Hui Shao, Yan Sun, Jingchuan Guo, Jiang Bian, Rui Yin, **Carl Yang**: *Type 2 Diabetes Subtyping via Phenotype and Genotype Co-Learning*. Proceedings of the World Congress on Medical and Health Informatics (**MedInfo**), **Best Paper Award (First Place)**, 2025.
- Guanchen Wu, Linzhi Zheng, Han Xie, Zhen Xiang, Jiaying Lu, Darren Liu, Delgersuren Bold, Bo Li, Xiao Hu, **Carl Yang**: *Large Language Model Empowered Privacy-Protected Framework for PHI Annotation in Clinical Notes*. Proceedings of the World Congress on Medical and Health Informatics (**MedInfo**), 2025.
- Yuhao Xu, Jiaying Lu, Sirui Ding, Defu Cao, Xiao Hu, **Carl Yang**: *Are Foundation Models Useful for Electrocardiogram Analysis? A Multi-task Benchmark with Comprehensive Evaluations and Insightful Findings*. Proceedings of the World Congress on Medical and Health Informatics (**MedInfo**), 2025.
- Hejie Cui, Xinyu Fang, Ran Xu, Xuan Kan, Joyce C Ho, **Carl Yang**: *Multimodal Fusion of EHR in Structures and Semantics: Integrating Clinical Records and Notes with Hypergraph and LLM*. Proceedings of the World Congress on Medical and Health Informatics (**MedInfo**), 2025.
- Yanchao Tan, Jie Zhang, Jiamin Zhuang, Guofeng Ma, **Carl Yang**: *Medical Retrieval-Augmentation Generation Framework for Healthcare Prediction*. Proceedings of the World Congress on Medical and Health Informatics (**MedInfo**), 2025.
- Mingchen Shao, Youjeong Kang, Xiao Hu, Hyunjung Gloria Kwak, **Carl Yang**, Jiaying Lu: *Mining Social Determinants of Health for Heart Failure Patient 30-Day Readmission via Large Language Model*. Proceedings of the World Congress on Medical and Health Informatics (**MedInfo**), 2025.
- Balu Bhasuran, Qiao Jin, Yuzhang Xie, **Carl Yang**, Karim Hanna, Jennifer Costa, Cindy Shavor, Zhiyong Lu, Zhe He: *Preliminary Analysis of the Impact of Lab Results on Large Language Model Generated Differential Diagnoses*. **npj Digital Medicine**, 2025.
- Zihan Tan, Guancheng Wan, Wenke Huang, Guibin Zhang, He Li, **Carl Yang**, Mang Ye: *FedSPA: Generalizable Federated Graph Learning under Homophily Heterogeneity*. Proceedings of the Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025.

- **Carl Yang**, Ran Xu, Linhao Luo, Shirui Pan: *Knowledge Graph and Large Language Model Co-learning via Structure-oriented Retrieval Augmented Generation*. **IEEE Data Engineering Bulletin**, 2025.
- Ran Xu, Hui Liu, Sreyashi Nag, Zhenwei Dai, Yaochen Xie, Xianfeng Tang, Chen Luo, Yang Li, Joyce C Ho, **Carl Yang**, Qi He: *SimRAG: Self-Improving Retrieval-Augmented Generation: Adapting Large Language Models to Domain-Specific QA*. Proceedings of the Annual Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL**), 2025.
- Sungwon Kim, Yoonho Lee, Yunhak Oh, Namkyeong Lee, Sukwon Yun, Junseok Lee, Sein Kim, **Carl Yang**, Chanyoung Park: *Subgraph Federated Learning for Local Generalization*. Proceedings of the International Conference on Learning Representations (**ICLR**), **Oral, Best Paper Award of 2024 KDD-FedKDD Workshop**, 2025.
- Linhao Luo, **Carl Yang**, Shirui Pan: *Integrating Large Language Models and Knowledge Graphs for Next-level AGI*. Tutorial at the International World Wide Web Conference (**WWW**), 2025.
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  - **Carl Yang**, Qi Zhu, Yidan Xu, Haonan Wang, Chao Zhang, Jiawei Han: *Transfer Learning of Graph Neural Networks with Ego-graph Information Maximization*. Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2021.
  - Jamie Cui, Chaochao Chen, Lingjuan Lyu, **Carl Yang**, Wang Li: *Exploiting Data Sparsity in Secure Cross-Platform Social Recommendation*. Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2021.
  - Chaoyang He, Keshav Balasubramanian, Emir Ceyani, **Carl Yang**, Han Xie, Lichao Sun, Lifang He, Liangwei Yang, Philip S. Yu, Yu Rong, Peilin Zhao, Junzhou Huang, Murali Annavaram, Salman Avestimehr: *FedGraphNN: A Federated Learning System and Benchmark for Graph Neural Networks*. Workshop on Distributed and Private Machine Learning: The International Conference on Learning Representations (**ICLR-DPML**); Workshop on Graph Neural Networks and Systems: The Conference on Machine Learning and Systems (**MLSys-GNNSys**), 2021.
  - Di Jin, Zhizhi Yu, Dongxiao He, Carl Yang, Philip S. Yu, Jiawei Han: *GCN for HIN via Implicit Utilization of Attention and Meta-paths*. IEEE Transactions on Knowledge and Data Engineering (**TKDE**), 2021.
  - Chen Ling, **Carl Yang**, Liang Zhao: *Deep Generation of Heterogeneous Networks*. Proceedings of the IEEE International Conference on Data Mining (**ICDM**), 2021.
  - Sai Vidharanya Nuthalapati, Ramraj Chandradevan, Eleonora Giunchiglia, Bowen Li, Maxime Kayser, Thomas Lukasiewicz, **Carl Yang**: *Lightweight Visual Question Answering using Scene Graphs*. Proceedings of the ACM International Conference on Information and Knowledge Management (**CIKM**), 2021.
  - Xuan Kan, Hejie Cui, **Carl Yang**: *Zero-Shot Scene Graph Relation Prediction through Commonsense Knowledge Integration*. Proceedings of the European Conference on Machine Learning and Principles

and Practice of Knowledge Discovery in Databases (**ECML-PKDD**), 2021.

- **Carl Yang**, Haonan Wang, Ke Zhang, Liang Chen, Lichao Sun: *Secure Deep Graph Generation with Link Differential Privacy*. Proceedings of the International Joint Conference on Artificial Intelligence (**IJCAI**), 2021.
- Gongxu Luo, Hao Peng, Jianxin Li, Lichao Sun, **Carl Yang**, Philip Yu, Lifang He: *Graph Entropy Guided Node Embedding Dimension Selection for Graph Neural Networks*. Proceedings of the International Joint Conference on Artificial Intelligence (**IJCAI**), 2021.
- Liang Chen, Jintang Li, Qibiao Peng, Yang Liu, Zibin Zheng, **Carl Yang**: *Understanding Structural Vulnerability in Graph Convolutional Networks*. Proceedings of the International Joint Conference on Artificial Intelligence (**IJCAI**), 2021.
- Haonan Wang, Chang Zhou, **Carl Yang**, Hongxia Yang, Jingrui He: *Controllable Gradient Item Retrieval*. Proceedings of the International World Wide Web Conference (**WWW**), 2021.
- Wenjie Hu, Yang Yang, Ziqiang Cheng, **Carl Yang**, Xiang Ren: *Time-Series Event Prediction with Evolutionary State Graph*. Proceedings of the ACM International Conference on Web Search and Data Mining (**WSDM**), 2021.
- Yuanzhen Xie, Zijing Ou, Liang Chen, Yang Liu, Kun Xu, **Carl Yang**, Zibin Zheng: *Learning and Updating Node Embedding on Dynamic Heterogeneous Information Network*. Proceedings of the ACM International Conference on Web Search and Data Mining (**WSDM**), 2021.
- Yanchao Tan, **Carl Yang**, Xiangyu Wei, Yun Ma, Xiaolin Zheng: *Multi-Facet Recommender Networks with Spherical Optimization*. Proceedings of the IEEE International Conference on Data Engineering (**ICDE**), 2021.

#### **Before 2021 (Ph.D. Graduation):**

- **Carl Yang**: *Multi-Facet Graph Mining with Contextualized Projections*. Graduate Dissertations and Theses at Illinois, 2020.
- **Carl Yang**, Jieyu Zhang, Jiawei Han: *Co-Embedding Network Nodes and Hierarchical Labels with Taxonomy Based Generative Adversarial Nets*. Proceedings of the IEEE International Conference on Data Mining (**ICDM**), **Best Paper Award**, 2020.
- **Carl Yang**, Yuxin Xiao, Yu Zhang, Yizhou Sun, Jiawei Han: *Heterogeneous Network Representation Learning: A Unified Framework with Survey and Benchmark*. IEEE Transactions on Knowledge and Data Engineering (**TKDE**), 2020.
- **Carl Yang**, Aditya Pal, Andrew Zhai, Nickil Pancha, Jure Leskovec, Jiawei Han: *MultiSage: Empowering GCN with Contextualized Multi-Embeddings on Web-Scale Multipartite Networks*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2020.
- **Carl Yang**, Jieyu Zhang, Haonan Wang, Bangzheng Li, Jiawei Han: *Neural Concept Map Generation for Effective Document Classification with Interpretable Structured Summarization*. Proceedings of the ACM International Conference on Research and Development in Information Retrieval (**SIGIR**), 2020.
- **Carl Yang**, Jieyu Zhang, Haonan Wang, Sha Li, Myunghwan Kim, Matthew Walker, Yiyou Xiao, Jiawei Han: *Relation Learning on Social Networks with Multi-Modal Graph Edge Variational Autoencoders*. Proceedings of the ACM International Conference on Web Search and Data Mining (**WSDM**), 2020.
- **Carl Yang**, Liyuan Liu, Mengxiong Liu, Zongyi Wang, Chao Zhang, Jiawei Han: *Graph Clustering with Embedding Propagation*. Proceedings of the IEEE International Conference on Big Data (**BigData**), 2020 (arXiv, 2017).
- **Carl Yang**, Peiye Zhuang, Wenhan Shi, Alan Luu, Pan Li: *Conditional Structure Generation through Graph Variational Generative Adversarial Nets*. Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2019.
- **Carl Yang**, Mengxiong Liu, Frank He, Jian Peng, Jiawei Han: *cube2net: Efficient Quality Network Construction with Data Cube Organization*. Doctoral Forum of the IEEE International Conference on Data Mining (**ICDM**), 2019.

- **Carl Yang**, Jieyu Zhang, Jiawei Han: *Neural Embedding Propagation on Heterogeneous Networks*. Proceedings of the IEEE International Conference on Data Mining (**ICDM**), 2019.
- **Carl Yang**, Lingrui Gan, Zongyi Wang, Jiaming Shen, Jinfeng Xiao, Jiawei Han: *Query-Specific Knowledge Summarization with Entity Evolutionary Networks*. Proceedings of the ACM International Conference on Information and Knowledge Management (**CIKM**), 2019.
- **Carl Yang**, Dai Teng, Siyang Liu, Sayantani Basu, Jieyu Zhang, Jiaming Shen, Chao Zhang, Jingbo Shang, Lance Kaplan, Timothy Harratty, Jiawei Han: *CubeNet: Multi-Facet Hierarchical Heterogeneous Network Construction, Analysis, and Mining*. Demo in the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2019.
- **Carl Yang**, Do Huy Hoang, Tomas Mikolov, Jiawei Han: *Place Deduplication with Embeddings*. Proceedings of the International World Wide Web Conference (**WWW**), 2019.
- **Carl Yang**, Kevin Chang: *Relationship Profiling over Social Networks: Reverse Smoothness from Similarity to Closeness*. Proceedings of the SIAM International Conference on Data Mining (**SDM**), 2019.
- **Carl Yang**, Yichen Feng, Pan Li, Yu Shi, Jiawei Han: *Meta-Graph Based HIN Spectral Embedding: Methods, Analyses and Insights*. Proceedings of the IEEE International Conference on Data Mining (**ICDM**), 2018.
- **Carl Yang**, Mengxiong Liu, Frank He, Xikun Zhang, Jian Peng, Jiawei Han: *Similarity Modeling on Heterogeneous Networks via Automatic Path Discovery*. Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD**), 2018.
- **Carl Yang**, Mengxiong Liu, Vincent Zheng, Jiawei Han: *Node, Motif and Subgraph: Leveraging Network Functional Blocks Through Structural Convolution*. Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (**ASONAM**), 2018.
- **Carl Yang**, Xiaolin Shi, Jie Luo, Jiawei Han: *I Know You'll Be Back: Interpretable New User Clustering and Churn Prediction on a Mobile Social Application*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2018.
- **Carl Yang**, Chao Zhang, Xuewen Chen, Jieping Ye, Jiawei Han: *Did You Enjoy the Ride: Understanding Passenger Experience via Heterogeneous Network Embedding*. Proceedings of the IEEE International Conference on Data Engineering (**ICDE**), 2018.
- **Carl Yang**, Hanqing Lu, Kevin Chang: *CONE: Community Oriented Network Embedding*. Proceedings of the International Joint Conference on Neural Networks (**IJCNN**), 2018 (arXiv, 2017).
- **Carl Yang**, Lanxiao Bai, Chao Zhang, Quan Yuan, Jiawei Han: *Bridging Collaborative Filtering and Semi-Supervised Learning: A Neural Approach for POI Recommendation*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2017.
- **Carl Yang**, Zhong Lin, Li-Jia Li, Jie Luo: *Bi-directional Joint Inference for User Links and Attributes on Large Social Graphs*. Proceedings of the International World Wide Web Conference (**WWW**), 2017.
- **Ji Yang**, Bin Xu, Binbin Lin, Xiaofei He: *Multi-Query Parallel Field Ranking for Image Retrieval*. Neurocomputing, 2014.
- Yingkui Wang, Di Jin, **Carl Yang**, Jianwu Dang: *Integrating Group Homophily and Individual Personality of Topics Can Better Model Network Communities*. Proceedings of the IEEE International Conference on Data Mining (**ICDM**) 2020.
- Chanyoung Park, **Carl Yang**, Qi Zhu, Donghyun Kim, Hwanjo Yu, Jiawei Han: *Unsupervised Differentiable Multi-aspect Node Representation Learning*. Proceedings of the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2020.
- Yang Liu, Xianzhuo Xia, Liang Chen, Xiangnan He, **Carl Yang**, Zibin Zheng: *Certifiable Robustness to Discrete Adversarial Perturbations for Factorization Machines*. Proceedings of the ACM International Conference on Research and Development in Information Retrieval (**SIGIR**), 2020.

- Yiqing Xie, Sha Li, **Carl Yang**, Raymond Chi-Wing Wong, Jiawei Han: *When Do GNNs Work: Understanding and Improving Neighborhood Aggregation*. Proceedings of the International Joint Conference on Artificial Intelligence (**IJCAI**), 2020.
- Jiayi Liu, Quan Yuan, **Carl Yang**, He Huang, Chao Zhang, Philip Yu: *DAPred: Dynamic Attention Location Prediction with Long-Short Term Movement Regularity*. Proceedings of the AAAI International Conference on Innovative Applications of Artificial Intelligence (**IAAI**), 2020.
- Yuxin Xiao, Zecheng Zhang, **Carl Yang**, ChengXiang Zhai: *Non-local Attention Learning on Large Heterogeneous Information Networks*. Proceedings of the IEEE International Conference on Big Data (**BigData**), 2019.
- Aravind Sankar, Adit Krishnan, Zongjian He, **Carl Yang**: *RASE: Relationship Aware Social Embedding*. Proceedings of the International Joint Conference on Neural Networks (**IJCNN**), 2019.
- Yu Shi, Xinwei He, Naijing Zhang, **Carl Yang**, Jiawei Han: *User-Guided Clustering in Heterogeneous Information Networks via Motif-Based Comprehensive Transcription*. Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD**), 2019.
- Jiaming Shen, Jinfeng Xiao, Yu Zhang, **Carl Yang**, Jingbo Shang, Jinda Han, Saurabh Sinha, Peipei Ping, Richard Weinshilboum, Zhiyong Lu, Jiawei Han: *SetSearch+: Entity-Set-Aware Search and Mining for Scientific Literature*. Demo in the ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2018.
- Chao Zhang, Mengxiong Liu, Zhengchao, Liu, **Carl Yang**, Luming Zhang, Jiawei Han: *Spatiotemporal Activity Modeling Under Data Scarcity: A Graph-Regularized Cross-Modal Embedding Approach*. Proceedings of the AAAI International Conference on Artificial Intelligence (**AAAI**), 2018.
- Binbin Lin, **Ji Yang**, Xiaofei He, Jieping Ye: *Geodesic Distance Function Learning via Heat Flows on Vector Fields*. Proceedings of the International Conference on Machine Learning (**ICML**), 2014.
- Haifeng Liu, Zheng Yang, **Ji Yang**, Zhaohui Wu, Xuelong Li: *Local Coordinate Concept Factorization for Image Representation*. IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2014.

## TEACHING EXPERIENCES

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- **Instructor**, CS444 Deep Learning, Emory University, 2025 Fall.
- **Instructor**, CS485 Topics in Computer Science: Deep Learning, Emory University, 2024 Fall.
- **Instructor**, CS253 Data Structures and Algorithms, Emory University, 2023 Fall.
- **Instructor**, CS570 Data Mining, Emory University, 2023 Spring.
- **Instructor**, CS253 Data Structures and Algorithms, Emory University, 2022 Fall.
- **Instructor**, CS570 Data Mining, Emory University, 2022 Spring.
- **Instructor**, CS253 Data Structures and Algorithms, Emory University, 2021 Fall.
- **Instructor**, CS253 Data Structures and Algorithms, Emory University, 2021 Spring.
- **Instructor**, CS584 Topics: Graph Data Mining, Emory University, 2020 Fall.
- **Teaching Assistant**, CS412: Introduction to Data Mining, UIUC/Coursera, 2020 Spring.
- **Lead Teaching Assistant**, CS512: Data Mining: Principles and Algorithms, UIUC, 2019 Spring.
- **Lead Teaching Assistant**, CS512: Data Mining: Principles and Algorithms, UIUC, 2018 Spring.
- **Lead Teaching Assistant**, CS412: Introduction to Data Mining, UIUC, 2017 Spring.
- **Teaching Assistant**, CS511: Advanced Data Management, UIUC, 2016 Spring.
- **Teaching Assistant**, CS412: Introduction to Data Mining, UIUC, 2015 Fall.

## SERVICES AND ACTIVITIES

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### Event Organizations

- Inaugural Track Chair, AI for Sciences, The ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2026.
- Chair-Elect, Knowledge Discovery and Data Mining Working Group (**KDDM**), The American Medical Informatics Association Annual Summit (**AMIA**), 2026.
- Organizer, Ordinary Differential Equation (ODE)-based Brain Connectomics Workshop, NSF Institute for Mathematical and Statistical Innovation (**IMSI**), 2026.
- Special Track Chair, Large Language Model in Data Science, The Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**), 2026.
- Program Committee Chair, The ACM International Conference on Information and Knowledge Management (**CIKM**), 2025.
- Organizer, The International Forum on Biomedical Informatics, Data Science, and AI, 2025.
- Local Chair, Knowledge Discovery and Data Mining Workshop (**KDDM**), The American Medical Informatics Association Annual Summit (**AMIA**), 2025.
- Special Session Chair, LLM-Empowered Data and Knowledge Ecosystem for Healthcare, The IEEE-EMBS International Conference on Biomedical and Health Informatics (**BHI**).
- Track Chair, Knowledge Graph and Large Language Model, The IEEE International Conference on Knowledge Graph (**ICKG**), 2025.
- Organizer of Health Day, The ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- Social Media and Publicity Chair, The ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2024-2025.
- Lead Organizer and General Chair, The 2024 International Joint Workshop on Federated Learning for Data Mining and Graph Analytics (**FedKDD**), 2024-2025.
- AnalytiCup Chair, The ACM International Conference on Information and Knowledge Management (**CIKM**), 2024.
- Lead Organizer and General Chair, The 2023 IEEE International Workshop on Federated Learning with Graph Data (**FedGraph**), 2022-2023.
- Proceedings Chair, The ACM International Conference on Information and Knowledge Management (**CIKM**), 2023.
- KDD Cup Chair, The ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2023.
- Track Chair, The Conference on Health, Inference, and Learning (**CHIL**), 2023.
- Lead Organizer and General Chair, The 2022 ACM International Workshop on Federated Learning with Graph Data (**FedGraph**), 2022.
- Lead Organizer and General Chair, The 2022 IEEE International Workshop on Neural Network Models for Brain Connectome Analysis (**BrainNN**), 2022.
- Workshop Chair, The ACM International Conference on Information and Knowledge Management (**CIKM**), 2022.
- Web Chair, The ACM International Conference on Knowledge Discovery and Data Mining (**KDD**), 2022.
- Session Chair, The ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2025.
- Session Chair, The International World Wide Web Conference (**WWW**), 2025.
- Session Chair, The ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2024.
- Session Chair, The ACM International Conference on Information and Knowledge Management (**CIKM**), 2023.
- Session Chair, The ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2023.
- Session Chair, The IEEE International Conference on Data Engineering (**ICDE**), 2023.
- Session Chair, The ACM International Conference on Information and Knowledge Management (**CIKM**), 2022.

- Session Chair, The International World Wide Web Conference (**WWW**), 2022.
- Session Chair, The ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2021.
- Session Chair, The IEEE International Conference on Data Engineering (**ICDE**), 2021.
- Session Chair, The International World Wide Web Conference (**WWW**), 2021.
- Session Chair, The IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (**ASONAM**), 2018.

### Conference (Senior) Program Committees

- The International Conference on Computer Vision (**ICCV**), since 2025.
- The Conference on Computer Vision and Pattern Recognition (**CVPR**), since 2025.
- The American Medical Informatics Association Annual Summit (**AMIA**), since 2025.
- The International Conference on Artificial Intelligence and Statistics (**AISTATS**), since 2024.
- The Annual Meeting of the Association for Computational Linguistics (**ACL**), since 2024.
- The Conference on Empirical Methods in Natural Language Processing (**EMNLP**), since 2024.
- The Annual Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL**), since 2024.
- The ACM International Conference on Multimedia (**ACMMM**), since 2024.
- The International Conference on Machine Learning (**ICML**), since 2024.
- The Pacific Symposium on Biocomputing (**PSB**), since 2024.
- The International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), since 2023.
- The Conference on Health, Inference, and Learning (**CHIL**), since 2023.
- The ACM International Conference on Research and Development in Information Retrieval (**SIGIR**), since 2023.
- The International Conference on Learning Representations (**ICLR**), since 2022.
- The IEEE International Conference on Data Engineering (**ICDE**), since 2021.
- The IEEE International Conference on Data Mining (**ICDM**), since 2021.
- The Conference on Neural Information Processing Systems (**NeurIPS**), since 2020.
- The ACM International Conference on Web Search and Data Mining (**WSDM**), since 2020.
- The AAAI Conference on Artificial Intelligence (**AAAI**), since 2019.
- The International Joint Conference on Artificial Intelligence (**IJCAI**), since 2019.
- The ACM Conference on Knowledge Discovery and Data Mining (**KDD**), since 2018.
- The International World Wide Web Conference (**WWW**), since 2018.
- The SIAM International Conference on Data Mining (**SDM**), since 2018.
- The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD**), since 2017.
- The ACM International Conference on Information and Knowledge Management (**CIKM**), since 2017.

### Editorial Boards

- Associate Editor, ACM Transactions on Knowledge Discovery from Data (**TKDD**), since 2024.
- Associate Editor, ACM Transactions on Computing for Healthcare (**HEALTH**), since 2024.
- Associate Editor, IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), since 2022.
- Associate Editor, Big Data Journal, Mary Ann Liebert, Inc., since 2021.
- Associate Editor, IEEE Transactions on Big Data (**TBD**), 2021-2025.
- Guest Editor, Physiological Measurement, 2024-2025.
- Guest Editor, Frontiers in Big Data and Artificial Intelligence, 2021-2022.

### Journal Reviews

- Communications Medicine, Nature, since 2025.
- Journal of the American Medical Informatics Association (**JAMIA**), since 2025.
- Patterns, Cell Press, since 2025.
- The IEEE Transactions on Biomedical Engineering (**TBME**), since 2025.
- Nature Machine Intelligence, since 2024.
- Nature Communications, since 2024.
- Scientific Data, Nature, since 2024.
- National Science Review, Oxford Academic, since 2024.
- ACM Computing Surveys, since 2024.
- The IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), since 2024.
- The IEEE Transactions on Medical Imaging (**TMI**), since 2024.
- The IEEE Transactions on Computational Biology and Bioinformatics (**TCBB**), since 2024.
- The IEEE Transactions on Computational Social Systems (**TCSS**), since 2024.
- Neurocomputing, Elsevier, since 2024.
- Scientific Reports, Nature, since 2024.
- World Wide Web: Internet and Web Information Systems, Springer, since 2024.
- Psychiatry Research, Elsevier, since 2023.
- Medical Image Analysis, Elsevier, since 2023.
- The IEEE Journal of Biomedical and Health Informatics (**JBHI**), since 2023.
- Bioinformatics, Oxford Academic, since 2022.
- The IEEE Transactions on Network Science and Engineering (**TNSE**), since 2020.
- The IEEE Transactions on Big Data (**TBD**), since 2019.
- The ACM Transactions on Information Systems (**TOIS**), since 2019.
- The ACM Transactions on Intelligent Systems and Technology (**TIST**), since 2019.
- The IEEE Multidisciplinary Open Access Journal (**Access**), since 2018.
- The IEEE Transactions on Knowledge and Data Engineering (**TKDE**), since 2018.
- The IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), since 2017.

### **Grant Reviews**

- Emory University Research Committee (URC), since 2021.
- National Science Foundation (NSF), since 2021.

### **Research Talks**

- Keynote, Workshop on Trustworthy Agent AI, AAAI 2026, Singapore, January 2026.
- Keynote, Singapore ACM SIGKDD Symposium, Singapore, January 2026.
- Keynote, Workshop on Advancing Data for Better Health, BIBM 2025, virtual, December 2025.
- Invited talk, International Forum on Biomedical Informatics, Data Science, and AI, Georgia, USA, November 2025.
- Invited talk, Department of Biomedical Informatics, Emory School of Medicine, Georgia, USA, October 2025.
- Invited talk, Emory Global Diabetes Research Center of the Woodruff Health Sciences Center, Georgia, USA, September 2025.
- Bluesky talk, KDD 2025 Health Day, Ontario, Canada, August 2025.
- Tutorial on Unifying Large Language Models and Knowledge Graphs for Medicine and Healthcare, KDD 2025, Ontario, Canada, August 2025.
- Tan Chin Tuan Seminar, Nanyang Technological University, Singapore, June 2025.
- Invited talk, Health Day of DASFAA 2025, Singapore, May 2025.

- Invited talks, School of Computer Science and School of Biomedical Engineering, University of Sydney, New South Wales, Australia, May 2025.
- Tutorial on Integrating Large Language Models and Knowledge Graphs for Next-level AGI, WWW 2025, New South Wales, Australia, May 2025.
- Tutorial on Graph Learning for Dynamic Brain Network Analysis, ISBI 2025, Texas, USA, April 2025.
- Invited talks, National University of Singapore, Nanyang Technological University, and Singapore Management University, Singapore, March 2025.
- Invited talk, David Geffen School of Medicine, UCLA, California, USA, January 2025.
- Invited talk, Department of Computer Science, Brigham Young University, Utah, USA, January 2025.
- Flash talk, NIH AI in Precision Medicine Workshop, Maryland, USA, November 2024.
- Perspective talk, NIH CFDE 2024 Fall Meeting, Maryland, USA, October 2024.
- Invited talk, AI for Healthcare Invited Talk Series, UT Austin, Texas, USA, September 2024.
- Invited talk, School of CSE Seminar Series, Georgia Tech, Georgia, USA, September 2024.
- Keynote, Deep Learning and Large Language Models for Knowledge Graphs Workshop, KDD 2024, Spain, August 2024.
- Invited talk, 2024 IMSI Workshop on Challenges in Neuroimaging Data Analysis, Illinois, USA, August 2024.
- Invited talk, Data Science & Artificial Intelligence Laboratory, KAIST, Korea, July 2024.
- Invited talk, IEEE Seminar Series, Lehigh Valley Section, Pennsylvania, USA, June 2024.
- Tutorial on GNNs for Brain Connectome Analysis, ISBI 2024, Greece, June 2024.
- Invited talk, AMIA KDDM Webinar, Florida, USA, April 2024.
- Invited talk, NSF CREST Dynamic Multiscale & Multimodal Brain Mapping across the Lifespan (D-MAP) Center, Georgia, USA, April 2024.
- Keynote, Asia Conference on Cognitive Engineering and Intelligent Interaction (CEII2023), Hong Kong, China, December 2023.
- Invited talk, Department of Computer Science, University of Oxford, UK, October 2023.
- Invited talk, School of Informatics, University of Edinburgh, UK, October 2023.
- Keynote, International Workshop on Federated Learning for Distributed Data Mining, KDD 2023, California, USA, August 2023.
- Invited talk, Digital and Data Science Group, Kaiser Permanente, Georgia, USA, April 2023.
- Invited talk, ScAi Lab, University of California, Los Angeles, California, USA, April 2023.
- Guest lecture, Trustworthy Machine Learning Class, Yale University, Connecticut, USA, March 2023.
- Invited talk, Data Science Team, Home Depot Headquarter, Georgia, USA, March 2023.
- Invited talk, Natural Language Processing Laboratory, Nara Institute of Science and Technology, Japan, December 2022.
- Invited talk, Secchia Center, Michigan State University, Michigan, USA, November 2022.
- Invited talk, Rollins School of Public Health, Emory University, Georgia, USA, October 2022.
- Invited talk, Nell Hodgson Woodruff School of Nursing, Emory University, Georgia, USA, September 2022.
- Invited talk, The Computational Neuroimage Science (CNS) Lab, Stanford University, California, USA, May 2022.
- Invited talk, Data Science for Mental Health Group, Alan Turing Institution, London, UK, March 2022.
- Invited talk, Weill Cornell Medical College, Cornell University, New York, USA, February 2022.
- Invited talk, Department of Computer Science, Purdue University, Indiana, USA, November 2021.
- Invited talk, DGL User Group, California, USA, November 2021.
- Amazon ML Tech Talk, Washington, USA, October 2021.
- Invited talk, Information Theory and Machine Learning (vITAL) Research Lab, University of South California, California, USA, July 2021.

- Invited talk, School of Computer Science, University of Sydney, New South Wales, Australia, March 2020.
- Invited talk, Department of Computer Science, University of Florida, Florida, USA, March 2020.
- Invited talk, School of Computing Science, Simon Fraser University, British Columbia, Canada, February 2020.
- Invited talk, Department of Computer Science, Emory University, Georgia, USA, February 2020.
- Invited talk, College of Computer Science and Technology, Zhejiang University, Zhejiang, China, January 2020.
- Invited talk, Department of Computer Science, University of British Columbia, British Columbia, Canada, December 2019.
- Invited talk, Center for Science of Science and Innovation (CSSI), Northwestern University, Illinois, USA, November 2019.
- Invited talk, Great Lakes Workshop on Data Science, University of Notre Dame, Indiana, USA, September 2019.
- Invited talks, Fudan University and Shanghai Jiao Tong University, Shanghai, China, November 2018.
- Invited talk, Snap Research, Snap Inc., California, USA, March 2018.
- Invited talk, Tsinghua University and University of Science and Technology, Beijing, China, August 2017.

## INDUSTRIAL EXPERIENCES

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### **Research & DeepMind, Google LLC**

*Feb. 2024 - Aug. 2024*

*Visiting Faculty Researcher, Supervisors: Dr. Yi Liang, Dr. Michael Bendersky New York, NY, US*

- Participated in and advised on the development and evaluations of several graph-enhanced LLMs such as regarding efficient distillation, aligned reward, logical planning and diversified search.

### **Research Lab, Pinterest Inc**

*May. 2019 - Aug. 2019*

*Research Intern, Supervisors: Dr. Aditya Pal, Prof. Jure Leskovec San Francisco, CA, US*

- Empowered GraphSage for web-scale Pinterest graph embedding through efficient graph down-sampling and context-aware conditional aggregation on heterogeneous pin-board networks.

### **Places Data & AI Research, Facebook Inc.**

*May. 2018 - Aug. 2018*

*Research Intern, Supervisors: Dr. Do Huy Hoang, Dr. Tomas Mikolov New York, NY, US*

- Developed a two-step data-driven pipeline of feature generation and metric learning for place embedding to leverage ad-hoc place attributes and noisy training data towards efficient place deduplication.

### **Economic Graph Research, LinkedIn Co.**

*Aug. 2018 - Jul. 2019*

*Remote Research Contractor, Supervisors: Dr. Myungwan Kim, Dr. Shipeng Yu Sunnyvale, CA, US*

- Developed a relation profiling algorithm based on multiple signals including user attributes, link structures and diffusive messages in the social network with novel multi-modal graph autoencoders.

### **Big Data Research, Didichuxing Inc.**

*Jun. 2017 - Aug. 2017*

*Research Intern, Supervisors: Prof. Xuwen Chen, Prof. Jieping Ye Beijing, China*

- Constructed the transportation HIN (heterogeneous information network) based on DiDi's unique travel data and developed a pattern-aware HIN embedding algorithm for passenger experience prediction.

### **Research Lab, Snap Inc.**

*May. 2016 - Aug. 2016*

*Research Intern, Supervisors: Dr. Jie Luo, Dr. Xiaolin Shi, Dr. Li-Jia Li Los Angeles, CA, US*

- Developed a joint learning framework of user links and attributes for friend recommendation and interest targeting. Implemented a Spark pipeline and scaled up to millions of nodes and billions of edges.

**Demographics ads serving, Google LLC**

*Software Engineer Intern, Supervisor: Dr. Tianyi Wu*

*May. 2015 - Aug. 2015*

*Seattle, WA, US*

- Implemented data extraction and inventory analysis pipeline using flume C++. Implemented an online simulation of ads serving and an offline optimal algorithm based on max flow to analyze the inventory.