KAIXIONG ZHOU

CONTACT INFORMATION

ADDRESS: 2121 Hepburn Street, Apt. 907, Houston, TX, USA, 77054.
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EDUCATION

Rice University, Houston, USA *August 2021 - Now*
PhD Student in Computer Science
Department of Computer Science Advisor: Dr. Xia Hu

Texas A&M University, College Station, USA *August 2018 - August 2021*
Graduate Student in Computer Science
Department of Computer Science and Engineering Advisor: Dr. Xia Hu

University of Science and Technology of China, Hefei, China *September 2015 - June 2018*
Master of Science in Information and Communication Engineering
Department of Information Science and Technology Advisor: Dr. Chen Gong and Zhengyuan Xu

Sun Yat-Sen University, Guangzhou, China *September 2011 - June 2015*
Bachelor in Electronic Information Science and Technology
School of Information Science and Technology Advisor: Dr. Lin Zhang and Ming Jiang

Double Major in Mathematics and Applied Mathematics
Department of Mathematics GPA: 3.8/4.0

RESEARCH INTERESTS

Data Mining & Machine Learning to advance graph network analysis, including deep graph neural networks, large-scale graph computation, graph meta learning, graph machine learning systems, and graph modeling for Euclidian data.

PUBLICATIONS

[Recsys' 22] Huiyuan Chen, Xiaoting Li, **Kaixiong Zhou**, Xia Hu, Chin-Chia Michael Yeh, Yan Zheng, Hao Yang. TinyKG: Memory-Efficient Training Framework for Knowledge Graph Neural Recommender Systems. In *Proceedings of the 16th ACM Recommender Systems Conference, 2022.*

[KDD' 22] **Kaixiong Zhou***, Ming-chen Sun*, Xin He, Ying Wang, and Xin Wang. GPPT: Graph Pre-training and Prompt Tuning to Generalize Graph Neural Networks. In *Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2022.*

[TPAMI] **Kaixiong Zhou***, Tianlong Chen*, Keyu Duan, Wenqing Zheng, Peihao Wang, Xia Hu, Zhangyang Wang. Bag of Tricks for Training Deeper Graph Neural Networks: A Comprehensive Benchmark Study. *IEEE Transactions on Pattern Analysis and Machine Intelligence.*

[IJCAI' 22] **Kaixiong Zhou**, Zirui Liu, Rui Chen, Li Li, Soo-Hyun Choi, and Xia Hu. Table2Graph: Transforming Tabular Data to Unified Weighted Graph. In *Proceedings of the 31th International Joint Conference on Artificial Intelligence, 2022.*

[AutoML-Conf' 22] Duc N.M Hoang, **Kaixiong Zhou**, Tianlong Chen, Xia Hu, and Zhangyang Wang. AutoCoG: A Unified Data-Model Co-Search Framework for Graph Neural Networks. In *Proceedings of 1st International Conference on Automated Machine Learning, 2022.*

[SIGIR' 22] Huiyuan Chen, **Kaixiong Zhou**, Kwei-Herng Lai, Xia Hu, Fei Wang, and Hao Yang. Adversarial Graph Perturbations for Recommendations at Scale (short paper). In *Proceedings of the 45th International ACM SIGIR Conference on Research and Development in Information Retrieval.*

[GLB' 22] Keyu Duan, Zirui Liu, Wenqing Zheng, Peihao Wang, **Kaixiong Zhou**, Tianlong Chen, Zhangyang Wang, and Xia Hu. Benchmarking Large-Scale Graph Training Over Effectiveness And Efficiency. In *Workshop of the Graph Learning Benchmarks of The Web Conference, 2022.*

[ICLR' 22] Zirui Liu, **Kaixiong Zhou**, Fan Yang, Li Li, Rui Chen, and Xia Hu. EXACT: Scalable Graph Neural Networks Training via Extreme Activation Compression. In *Proceedings of The Tenth International Conference on Learning Representation, 2022.*

[ICLR' 22] Zhimeng Jiang, **Kaixiong Zhou**, Zirui Liu, Li Li, Rui Chen, Soo-Hyun Choi, and Xia Hu. An Information Fusion Approach to Learning with Instance-Dependent Label Noise. In *Proceedings of The Tenth International Conference on Learning Representation, 2022.*

[SDM' 22] Daochen Zha, Kwei-Herng Lai, **Kaixiong Zhou**, and Xia Hu. Towards Similarity-Aware Time-Series Classification with Graph Neural Networks. In *Proceedings of SIAM International Conference on Data Mining (SDM22).*

[AAAI' 22] Kai Guo, **Kaixiong Zhou**, Xia Hu, Yu Li, Yi Chang, Xin Wang. Orthogonal Graph Neural Networks. In *Proceedings of the 36th AAAI Conference on Artificial Intelligence.*

[NeurIPS' 21] **Kaixiong Zhou**, Xiao Huang, Daochen Zha, Rui Chen, Li Li, Soo-Hyun Choi, and Xia Hu. Dirichlet Energy Constrained Learning for Deep Graph Neural Networks. In *Proceedings of the 35th Conference on Neural Information Processing Systems.*

[ICCV' 21] Zirui Liu, Haifeng Jin, Ting-Hsiang Wang, **Kaixiong Zhou**, and Xia Hu. DivAug: Plug-in Automated Data Augmentation with Explicit Diversity Maximization. In *Proceedings of 2021 International Conference on Computer Vision.*

[TNNLS] Yuening Li, Zhengzhang Chen, Daochen Zha, **Kaixiong Zhou**, Haifeng Jin, Haifeng Chen, and Xia Hu. AutoAD: Automated Anomaly Detection via Curiosity-guided Search and Self-imitation Learning. IEEE Transactions on Neural Networks and Learning Systems.

[SIGIR' 21] Huachi Zhou, Qiaoyu Tan, Xiao Huang, **Kaixiong Zhou**, and Xiaoling Wang. Temporal Augmented Graph Neural Networks for Session-Based Recommendations (short paper). In *Proceedings of the 44th International ACM SIGIR Conference on Research and Development in Information Retrieval.*

[NeurIPS' 20] **Kaixiong Zhou**, Xiao Huang, Yuening Li, Daochen Zha, Rui Chen, and Xia Hu. Towards Deeper Graph Neural Networks with Differentiable Group Normalization. In *Proceedings of the 34th Conference on Neural Information Processing Systems.*

[NeurIPS' 20] Zirui Liu, Qingquan Song, **Kaixiong Zhou**, Ting-Hsiang Wang, Xia Hu. Detecting Interactions from Neural Networks via Topological Analysis. In *Proceedings of the 34th Conference on Neural Information Processing Systems.*

[ICDE' 20] Yuening Li, Zhengzhang Chen, Daochen Zha, **Kaixiong Zhou**, Haifeng Jin, Haifeng Chen, and Xia Hu. Neural Architecture Search for Outlier Detction (short paper). In *Proceedings of the 36th International Conference on Data Engineering.*

[KDD' 20] Kwei Herng Lai, Daochen Zha, **Kaixiong Zhou**, and Xia Hu. Aggregation Optimization for Graph Neural Networks. In *Proceedings of the 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining.*

[IJCAI' 20] **Kaixiong Zhou**, Qingquan Song, Xiao Huang, Daochen Zha, Na Zou, Xia Hu. Multi-Channel Graph Convolutional Networks. In *Proceedings of the 29th International Joint Conference on Artificial Intelligence.*

[SDM' 20] Fan Yang, Ninghao Liu, Mengnan Du, **Kaixiong Zhou**, Shuiwang Ji, and Xia Hu. Deep Neural Networks with Knowledge Instillation. In *Proceedings of the SIAM International Conference on Data Mining, 2020.*

[IJCAI' 19] Daochen Zha, Kwei-Herng Lai, **Kaixiong Zhou**, and Xia Hu. Experience Replay Optimization. In *Proceedings of the 28th International Joint Conference on Artificial Intelligence.*

Papers before 2019

[JOCN] **Kaixiong Zhou**, Chen Gong, Nan Wu, Zhengyuan Xu. Distributed Channel Allocation and Rate Control for Hybrid FSO/RF Vehicular Ad Hoc Networks. IEEE/OSA Journal of Optical Communications and Networking, vol. 9, no. 8, pp. 669-681, Aug. 2017.

[JLT] **Kaixiong Zhou**, Chen Gong, Zhengyuan Xu. Color Planning and Inter-Cell Interference Coordination for Multi-Color Visible Light Communication Networks. IEEE/OSA Journal of Lightwave Technology, vol. 35, issue 22, pp. 4980-1993, Nov. 2017.

[WCSP' 17] Mian Zeng, **Kaixiong Zhou**, Chen Gong, Shun Lou, Xianqing Jin, Zhengyuan Xu. Design and Demonstration of An Indoor Visible Light Communication Network with Dynamic User Access and Resource Allocation. In *Proceedings of IEEE International Conference on Wireless Communication and Signal Processing*, Oct. 2017.

[GlobalSIP' 16] **Kaixiong Zhou**, Chen Gong, Qian Gao, Zhengyuan Xu. Inter-Cell Interference Coordination for Multi-Color Visible Light Communication Networks. In *Proceedings of IEEE Global Conference on Signal and Information Processing*, Dec. 2016, pp. 6-10.

[ICCC' 15] **Kaixiong Zhou**, Lin Zhang, and Ming Jiang. Enhanced Effective SNR Prediction for LTE Downlink. In *Proceedings of IEEE International Conference in Communication in China*, Nov. 2015, pp. 1-6.

PREPRINTS

[Under review] **Kaixiong Zhou**, Ninghao Liu, Fan Yang, Zirui Liu, Rui Chen, Li Li, Soo-Hyun Choi, and Xia Hu. Adaptive Label Smoothing To Regularize Large-Scale Graph Training.

[Under review] **Kaixiong Zhou**, Qingquan Song, Xiao Huang, Xia Hu. Auto-GNN: Neural Architecture Search of Graph Neural Networks.

[Under review] Haotian Xue, **Kaixiong Zhou**, Tianlong Chen, Kai Guo, Xia Hu, Yi Chang, Xin Wang. CAP: Co-Adversarial Perturbation on Weights and Features for Improving Generalization of Graph Neural Networks.

[Under review] Daochen Zha, Kwei-Herng Lai, **Kaixiong Zhou**, and Xia Hu. Simplifying Deep Reinforcement Learning via Self-Supervision: A Pilot Study.

WORK EXPERIENCE

Google. Title: Research Scientist Intern. *May 2022-August 2022*
Visa Research. Title: Research Scientist Intern. *May 2021-August 2021*
Samsung Research America. Title: Research Scientist Intern. *May 2020-August 2020*

RESEARCH EXPERIENCE

PhD, Rice University *August 2021-Now*
Large-scale graph computing, efficient graph neural networks, graph machine learning systems.

PhD, Texas A&M University *August 2018-August 2021*
Automated graph neural networks, deep graph neural networks, biochemical graph analysis, tabular data computing with graph modeling.

Master, University of Science and Technology of China *September 2015 - June 2018*
Medium access control and channel coding for wireless visible light communication.

Bachelor, Sun Yat-Sen University *2013 - June 2015*
Medium access control for wireless communication.

TECHNISCAL STRENGTHS

Programming Languages	Python, C, C++, R, Matlab
Libraries & Tools	PyTorch, TensorFlow, Keras

ACADEMIC SERVICES

Program Committee Member: CIKM' 20, AAAI' 21, ICML' 21, NeurIPS' 21, SIGKDD' 21, AAAI' 22, ICLR' 22, SIGKDD' 22, ICML' 22, IJCAI' 22, NeurIPS 2022.

HONORS, AWARDS, & FELLOWSHIPS

- Student Travel Award, KDD 2022.
- Excellent Graduates in Anhui Province, China, 2018.
- Outstanding Graduates Awards, USTC, 2018.
- National Scholarship for Outstanding Graduate Student, 2017.
- First Prize of Excellent Student Scholarship of SYSU, 2012,2013 (top 5%).