Yu Wang

CONTACT INFORMATION	Phone: (+1) 6153972786 E-mail: yuwang@uoregon.edu	Personal Homepage: https://yuwang0103.github.io/ Google Scholar: https://scholar.google.com/citations?user=XPCmiz4AAAAJ

POSITIONS	**Assistant Professor**, University of Oregon Department of Computer Science	Sep 2024- Present

EDUCATION	**Vanderbilt University**	
	Doctor of Philosophy (**Ph.D.**) in Computer Science	May 2024
	• Thesis: Data-quality-aware Graph Machine Learning • Advisor: Dr. Tyler Derr • Cumulative GPA: 3.95 / 4.00 • Selected Awards: Vanderbilt Outstanding Doctoral Student Award (2024)	
	Harbin Institute of Technology	
	Bachelor of Engineering (**B.E.**)	May 2019
	• Thesis: Machine Learning for Bridge Crack Detection • Advisor: Dr. Qingfei Gao • Cumulative GPA: 4.0 / 4.0, Rank: 1/92 • Selected Awards: First-class People's Scholarship×4, National Scholarship×2	

HONORS & AWARDS		
	• **2025 ACM SIGKDD Best Dissertation Award Honorable Mention**	Aug 2025
	• Outstanding Reviewer at Applied Data Science Track at ECML-PKDD'24	Dec 2024
	• Best Doctoral Forum Poster Runner-Up at SDM'24	Apr 2024
	• Vanderbilt Outstanding Doctoral Student Award	Feb 2024
	• Best Paper Award at GLFrontiers Workshop in Neurips'23	Dec 2023
	• Vanderbilt Graduate Leadership Anchor Award for Research	May 2023
	• Vanderbilt's C.F.Chen Best Paper Runner-up Award (as co-author)	May 2023
	• American Bureau of Shipping Scholarship Award	Jan 2023
	• NSF Student Travel Award (To attend ICDM'22)	Nov 2022
	• SIGIR Student Travel Grant (To attend CIKM'22)	Nov 2022
	• NSF Student Registration & Travel Award (To attend KDD'22/SDM'21)	Jun 2022 Mar 2021
	• **Vanderbilt's C.F.Chen Best Paper Award**	Apr 2022
	• IJCAI'20/21 Volunteers & Grants Program	Aug 2020/2021
	• Vanderbilt University Graduate School Travel Grant	Oct 2020 Nov 2022
	• Best Paper Award in 2020 Smoky Mountain Data Challenge Competition by ORNL	Sep 2020
	• Outstanding Research and Presentation Skills Award by UCLA-CSST Program	Aug 2018
	• First-class People's Scholarship×4	Sep 2016 Apr 2017 Sep 2017 Apr 2018
	• National Scholarship×2	Sep 2016 Sep 2017
	• Second Prize in the National College Student Mathematics Competition	Sep 2017

FUNDING	**Summarization**
	Funded **Total**: $500k, **My Share**: $280k **Pending** **Total**: $1.3m, **My Share**: $700k **Preparation** **Total**: $2.6m, **My Share**: $1.1m

[F1] Collaborative Research-Towards Well-Rounded Graph Retrieval for Retrieval-Augmented Generation
- **Team: Dr. Yu Wang (Lead)**, Dr. Tyler Derr
- **Status: Funded**
- **Agency:** NSF-IIS-III Core-Program
- **Equivalent Award Amount:** Total $400k, My share $200k
- **Project Period:** 08/01/25-07/31/28

[F2] Foundational Graph Retrieval for Retrieval-augmented Generation
- **Team: Dr. Yu Wang (Lead)**, Dr. Yao Ma
- **Status: Funded**
- **Agency:** NSF-NAIRR Program
- **Computation Cloud Credit:** 8,800 GPU-hours
- **Equivalent Award Amount:** Total $100k, My share $80k
- **Project Period:** 08/01/25-07/31/26

[F3] A Dependency-Aware Framework for Modeling and Mitigating Network Infrastructure Threats
- **Team: Dr. Yu Wang (Lead)**, Dr. Ramakrishnan Durairajan
- **Status:** Submitted-Pending
- **Agency:** NSF-SaTC 2.0 Program Fall 2025
- **Award Amount:** Total $800k, My share $400k
- **Project Period:** 08/01/26-07/31/29

[F4] Interpretable Agentic Social Intervention via Generative Social Simulation and Optimization
- **Team: Dr. Yu Wang (Lead)**, Dr. Tyler Derr
- **Status:** Submitted-Pending
- **Agency:** NSF-HNDS Program
- **Award Amount:** Total $500k, My share $300k
- **Project Period:** 08/01/26-07/31/29

[F5] Towards Well-rounded Graph Diffusion Generation
- **Team: Dr. Yu Wang (Lead)**, Dr. Harry Shomer, Dr. Jiliang Tang
- **Status:** In Preparation
- **Agency:** NSF-IIS-III Core-Program
- **Award Amount:** Total $1m, My share $400k
- **Project Period:** 08/01/26-07/31/29

[F6] Enhance Relational Data Exploration with Large Language Model Agent
- **Team: Dr. Yao Ma (Lead)**, Dr. Yu Wang, Dr. Xiao Luo
- **Status:** In Preparation
- **Agency:** NSF-IIS-III Core-Program
- **Award Amount:** Total $1m, My share $300k
- **Project Period:** 08/01/26-07/31/29

[F7] Risk-Averse Agent for Reliable Reasoning and Planning
- **Team: Dr. Yu Wang**
- **Status:** Submitted-Pending
- **Agency:** OpenAI Research Program Winter 2025
- **Computation Cloud Credit:** $2k OpenAI API Credits

[F8] Graph Agentic Retrieval Workflow for Faithful Generation
- **Team: Dr. Yu Wang**
- **Status:** Submitted-Pending
- **Agency:** Cisco Research Gift Funding Winter 2025
- **Computation Cloud Credit:** $60k

[F9] Graphing your Knowledge: A Topological Perspective on Knowledge Management
- **Team: Dr. Yu Wang**
- **Status:** Submitted-Pending
- **Agency:** OpenAI Research Program Winter 2025
- **Computation Cloud Credit:** $2k OpenAI API Credits

[F10] Safeguarding Structured Knowledge Retrieval-augmented Generation System
- **Team: Dr. Yu Wang (Lead)**, Dr. Joe Li
- **Status:** In Preparation
- **Agency:** NSF-SaTC 2.0 Winter 2026
- **Award Amount:** Total $600k, My share $400k
- **Project Period:** 08/01/26-07/31/29

INDUSTRIAL EXPERIENCE	**Document Intelligence Team**, Adobe Research	May 2023 – Dec 2023

Research Scientist Intern
- Knowledge Graph Prompting for Multi-Document Question Answering [Paper1][Paper2][News][Product]
- **2023 NeurIPS GLFrontiers Workshop Best Paper Award (1/70)**
- Mentors: Dr. Nedim Lipka, Dr. Ryan Rossi, Dr. Alexa Siu, Dr. Ruiyi Zhang, Manager: Dr. Tong Sun

Recommendation Data Science Team, The Home Depot   May 2022 – Dec 2022

Research Data Scientist
- Knowledge Graph-enhanced Session Recommendation [Paper]
- Prototyping the Knowledge Graph-enhanced Session Recommendation Framework in A/B test.
- 2024 Web Conference Industrial-Track Oral Presentation
- Mentors: Dr. Amin Javari, Dr. Walid Shalaby, Manager: Dr. Xiquan Cui

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PUBLICATIONS	Please note the following symbols below to signify certain author types in the below lists:

*	denotes co-first authors
†	denotes *graduate student mentored* by Yu Wang
††	denotes *undergraduate researcher/intern mentored* by Yu Wang

Citations 2143, h-index 21, i10-index 33

First/Last Author Conference Papers (acceptance based on peer review of full paper):

[FC17] Yongjia Lei[†], Mahantesh M Halappanavar, <u>Yu Wang</u>. "Rule Mining and Learning for Structured Knowledge Retrieval."
[WSDM 2026] ACM International Conference on Web Search and Data Mining
[Paper][Code]

[FC16] Utkarsh Sahu[†], Zhisheng Qi[†], Mahantesh M Halappanavar, Nedim Lipka, Ryan A Rossi, Franck Dernoncourt, Yu Zhang, Yao Ma, <u>Yu Wang</u>. "Knowledge Homophily in Large Language Models."
[WSDM 2026] ACM International Conference on Web Search and Data Mining
Acceptance rate 35%
[Paper][Code]

[FC15] Riya Ponraj[†], Ram Durairajan, <u>Yu Wang</u>. "Building Transparency in Deep Learning-Powered Network Traffic Classification: A Traffic-Explainer Framework."
[KDD 2026] ACM SIGKDD Conference on Knowledge Discovery & Data Mining
Acceptance Rate 22%
[Paper]

[FC14] Yongjia Lei[†], Haoyu Han, Ryan A Rossi, Franck Dernoncourt, Nedim Lipka, Mahantesh M Halappanavar, Jiliang Tang, <u>Yu Wang</u>. "Mixture of Structural-and-Textual Retrieval over Text-rich Graph Knowledge Bases."
[ACL 2025] Annual Meeting of the Association for Computational Linguistics
Acceptance Rate 37%, **Best Poster Honorable Mention at SDM'25 Doctorum Forum**
[Paper][Code]

[FC13] <u>Yu Wang</u>, Ryan A Rossi, Namyong Park, Nesreen K Ahmed, Danai Koutra, Franck Dernoncourt, Tyler Derr. "Demystifying the Power of LLMs in Graph Generation."
[NAACL 2025] Nations of Americans Chapter of Association for Computational Linguistics
Acceptance Rate 37%
[Paper][Code]

[FC12] <u>Yu Wang</u>, Ryan A. Rossi, Namyong Park, Huiyuan Chen, Nesreen K. Ahmed, Puja Trivedi, Franck Dernoncourt, Danai Koutra, Tyler Derr. "Large Graph Generative Models."
[ICLR 2025] International Conference on Learning Representation
Acceptance Rate 32.08%
[Paper][Code][Demo]

[FC11] <u>Yu Wang</u>[*], Xueqi Cheng[*,†], Yuying Zhao[†], Charu Aggarwal, and Tyler Derr. "Edge Classification: New Directions in Topological Imbalance."
[WSDM 2025] ACM International Conference on Web Search and Data Mining
Acceptance rate 17.3%
[Paper][Code]

[FC10] <u>Yu Wang</u>, Nedim Lipka, Ruiyi Zhang, Alexa Siu, Yuying Zhao[†], Bo Ni[†], Xin Wang[†], Ryan Rossi, Tyler Derr. "Augmenting Textual Generation via Topology Aware Retrieval."
[CIKM 2024] ACM International Conference on Information and Knowledge Management
Acceptance rate 23.00%
[Paper][Code][Slides][Poster]

[FC9] <u>Yu Wang</u>, Amin Javari, Janani Balaji, Walid Shalaby, Tyler Derr, Xiquan Cui "Knowledge Graph-Based Sequential Recommendation with Session-Adaptive Propagation."
[WWW 2024] In Proceedings of the ACM Web Conference.
Acceptance Rate 21.30%
[Paper]

[FC8] <u>Yu Wang</u>, Tong Zhao, Yuying Zhao[†], Yunchao Liu[†], Xueqi Cheng[†], Neil Shah, Tyler Derr. "A Topological Perspective on Demystifying GNN-based Link Prediction Performance.".
[ICLR 2024] International Conference on Learning Representation
[Paper][Code]

[FC7] Yu Wang, Nedim Lipka, Ryan Rossi, Alexa Siu, Ruiyi Zhang, Tyler Derr "Knowledge Graph Prompting for Multi-Document Question Answering."
[AAAI 2024] AAAI Conference on Artificial Intelligence
Acceptance Rate 23.75%, **Best Paper Award at GLFrontiers Workshop in Neurips'23**
[Paper][Code]

[FC6] Yu Wang, Yuying Zhao[†], Yi Zhang[†], and Tyler Derr. "Collaboration-aware Graph Convolutional Networks for Recommender Systems."
[WWW 2023] In Proceedings of the ACM Web Conference.
Acceptance Rate 19.2%, **Top-10 most influential paper in WWW'23 by Paper Digest**
[Paper][Code][Slides]

[FC5] Yu Wang, Yuying Zhao[†], Neil Shah, and Tyler Derr. "Imbalanced Graph Classification via GNNs on Graph of Graphs."
[CIKM 2022] ACM International Conference on Information and Knowledge Management.
Acceptance rate 27.51%, **Top-10 most influential paper in CIKM'22 by Paper Digest**
[Paper][Code][Slides][Poster]

[FC4] Yu Wang, Yuying Zhao[†], Yushun Dong, Huiyuan Chen, Jundong Li and Tyler Derr. "Improving Fairness in GNNs via Mitigating Sensitive Attribute Leakage."
[KDD 2022] ACM SIGKDD Conference on Knowledge Discovery & Data Mining.
Acceptance rate 14.9%
[Paper][Code][Slides][Poster]

[FC3] Yu Wang. "Fair Graph Learning with Imbalanced and Biased Data."
[WSDM 2022] ACM International Conference on Web Search and Data Mining.
[Paper][Slides]

[FC2] Yu Wang and Tyler Derr. "Tree Decomposed Graph Neural Network."
[CIKM 2021] ACM International Conference on Information and Knowledge Management.
Acceptance rate 21.7%
[Paper][Code][Slides][Poster]

[FC1] Yu Wang, Jinzhu Yu, and Hiba Baroud. "Quantifying the Interdependency Strength Across Critical Infrastructure Systems Using a Dynamic Network Flow Redistribution Model."
[ESRC 2020] Proceedings of the 30th European Safety and Reliability Conference.
[Paper]

Other Conference Papers (acceptance based on peer review of full paper):

[C17] Haoyu Han, Kai Guo, Harry Shomer, Yu Wang[†], Yucheng Chu, Hang Li, Li Ma, Jiliang Tang. "Reasoning by Exploration: A Unified Approach to Retrieval and Generation over Graphs."
[WWW 2026] In Proceedings of the ACM Web Conference.
Acceptance Rate 20.1%
[Paper]

[C16] Bo Ni[†], Leyao Wang, Yu Wang, Intermediate Authors Omitted, Yue Zhao, Tyler Derr, Ryan A.Rossi. "A Survey on LLM-based Conversational User Simulation."
[EACL 2026] Conference of European Chapter of Association for Computational Linguistics
Acceptance Rate 20.1%
[Paper]

[C15] Leyao Wang[†], Yu Wang, Bo Ni, Yuying Zhao, Haoyu Wang, Yao Ma, Tyler Derr. "SaVe-TAG: Semantic-aware Vicinal Risk Minimization for Long-Tailed Text-Attributed Graphs."
[KDD 2026] ACM SIGKDD Conference on Knowledge Discovery & Data Mining
Acceptance Rate 20%
[Paper]

[C14] Steven Au, Cameron Dimacali, Ojasmitha Pedirappagari, Namyong Park, Franck Dernoncourt, Yu Wang, Nikos Kanakaris, Hanieh Deilamsalehy, Ryan A. Rossi and Nesreen K. Ahmed. "Personalized Graph-Based Retrieval for Large Language Models."
[PACLIC 39] The 39th Pacific Asia Conference on Language, Information and Computation
[Paper]

[C13]   Kai Guo, Harry Shomer, Shenglai Zeng, Haoyu Han, Yu Wang, Jiliang Tang."Empowering GraphRAG with Knowledge Filtering and Integration."
[EMNLP 2025] Empirical Methods in Natural Language Processing
Acceptance Rate 22.16%
[Paper]

[C12]   Dang Nguyen, Viet Dac Lai, Seunghyun Yoon, Ryan A. Rossi, Handong Zhao, Ruiyi Zhang, Puneet Mathur, Nedim Lipka, Yu Wang, Trung Bui, Franck Dernoncourt, Tianyi Zhou "DynaSaur: Large Language Agents Beyond Predefined Actions."
[COLIM 2025] Second Conference on Language Modeling
Acceptance Rate 32%
[Paper][Code]

[C11]   Yu Xia, Subhojyoti Mukherjee, Zhouhang Xie, Junda Wu, Xintong Li, Ryan Aponte, Hanjia Lyu, Joe Barrow, Hongjie Chen, Franck Dernoncourt, Branislav Kveton, Tong Yu, Ruiyi Zhang, Jiuxiang Gu, Nesreen K. Ahmed, Yu Wang, Xiang Chen, Hanieh Deilamsalehy, Sungchul Kim, Zhengmian Hu, Yue Zhao, Nedim Lipka, Seunghyun Yoon, Ting-Hao Kenneth Huang, Zichao Wang, Puneet Mathur, Soumyabrata Pal, Koyel Mukherjee, Zhehao Zhang, Namyong Park, Thien Huu Nguyen, Jiebo Luo, Ryan A. Rossi, Julian McAuley."From Selection to Generation: A Survey of LLM-based Active Learning." 2025
[ACL 2025] Annual Meeting of the Association for Computational Linguistics
Acceptance Rate 37%
[Paper]

[C10]   Xueqi Cheng[†], Catherine Yang, Yuying Zhao, Yu Wang, Hamid Karimi, Tyler Derr. "BTS: A Comprehensive Benchmark for Tie Strength Prediction."
[KDD 2025] ACM SIGKDD Conference on Knowledge Discovery & Data Mining
Acceptance Rate 22%
[Paper][Code]

[C9]   Bo Ni[†], Yu Wang, Lu Cheng, Erik Blasch, Tyler Derr. "Towards Trustworthy Knowledge Graph Reasoning: An Uncertainty Aware Perspective."
[AAAI 2025] AAAI Conference on Artificial Intelligence
Acceptance Rate 23.4%
[Paper][code]

[C8]   Yunchao Liu[†], Ha Dong, Xin Wang[†], Rocco Moretti, Yu Wang, Zhaoqian Su, Jiawei Gu, Bobby Bodenheimer, Charles Weaver, Jens Meiler, Tyler Derr. "WelQrate: Defining the Gold Standard in Small Molecule Drug Discovery Benchmarking."
[NeurIPS 2024] Conference on Neural Information Processing Systems
Acceptance rate 25.3%
[Paper][Code][Slides][Poster]

[C7]   Yuying Zhao[†], Minghua Xu, Huiyuan Chen, Yuzhong Chen, Yiwei Cai, Rashidul Islam, Yu Wang, Tyler Derr. "Can One Embedding Fit All? A Multi-interest Learning Paradigm Towards Improving User Interest Diversity Fairness."
[WWW 2024] In Proceedings of the ACM Web Conference
Acceptance Rate 20.20%,
[Paper]

[C6]   Yuying Zhao[†], Yu Wang, Yi Zhang, Pamela Wisniswski, Charu Aggarwal, and Tyler Derr. "Fair dating recommendations for sexually fluid users via opposite gender interaction ratio."
[AAAI 2024] AAAI Conference on Artificial Intelligence
Acceptance Rate 24.20%
[Paper]

[C5]   Yuying Zhao[†], Yu Wang and Tyler Derr. "Fairness and Explainability: Bridging the Gap Towards Fair Model Explanations."
[AAAI 2023] AAAI Conference on Artificial Intelligence
Acceptance Rate 19.6%
[Paper][Code][Slides][Poster]

[C4]   Yunchao Liu[†], Yu Wang, Oanh Vu, Rocco Moretti, Bobby Bodenheimer, Jens Meiler and Tyler Derr. "Interpretable Chirality-Aware Graph Neural Network for Quantitative Structure-Activity Relationship Modeling in Drug Discovery."
[AAAI 2022] AAAI Conference on Artificial Intelligence
Acceptance Rate 19.6%
[Paper] [Code][Slides][Poster]

[C3]   Yushun Dong, Song Wang, Yu Wang, Tyler Derr, and Jundong Li. "On Structural Explanation of Bias in Graph Neural Networks."
[KDD 2022] ACM SIGKDD Conference on Knowledge Discovery & Data Mining
Acceptance rate 14.9%
[Paper][Code]

[C2]   Benedek Rozemberczki, Charles Tapley Hoyt, Anna Gogleva, Piotr Grabowski, Klas Karis, Andrej Lamov, Andriy Nikolov, Sebastian Nilsson, Michael Ughetto, Yu Wang, Tyler Derr, Benjamin M Gyori. "ChemicalX: A Deep Learning Library for Drug Pair Scoring."
[KDD 2022] ACM SIGKDD Conference on Knowledge Discovery and Data Mining
Acceptance rate 25.9% (Applied Track)
[Paper][Code][Slides][Poster]

[C1]   Ao Qu[††], Yu Wang, Yue Hu, Yanbing Wang, and Hiba Baroud. "A Data-Integration Analysis on Road Emissions and Traffic Patterns."
Smoky Mountains Computational Sciences and Engineering Conference. Springer, 2020.
[Paper][News] **Best Paper Award at Oak Ridge Urban Computation Challenge**

Book Chapters

[B1]   Yu Wang, Wei Jin, and Tyler Derr. "Graph Neural Networks: Self-supervised Learning." In Graph Neural Networks: Foundations, Frontiers, and Applications. Springer, (2021).
[Paper]

Journal Papers

[J8]   Hongjie Chen, Ryan A. Rossi, Nesreen K. Ahmed, Namyong Park, Yu Wang, Tyler Derr. "Edges Matter: Analyzing Graph Time-Series Representations for Temporal Networks."
[TNSE 2025] IEEE Transactions on Network Science and Engineering
[Paper]

[J7]   Zhehao Zhang, Ryan A. Rossi, Branislav Kveton, Yijia Shao, Diyi Yang, Hamed Zamani, Franck Dernoncourt, Joe Barrow, Tong Yu, Sungchul Kim, Ruiyi Zhang, Jiuxiang Gu, Tyler Derr, Hongjie Chen, Junda Wu, Xiang Chen, Zichao Wang, Subrata Mitra, Nedim Lipka, Nesreen Ahmed, Yu Wang. "Personalization of Large Language Models: A Survey."
[TMLR 2025] Transactions on Machine Learning Research
[Paper]

[J6]   Yunchao Liu[†], Rocco Moretti, Yu Wang, Ha Dong, Bobby Bodenheimer, Tyler Derr, Jens Meiler, "Advancements in Ligand-Based Virtual Screening through the Synergistic Integration of Graph Neural Networks and Expert-Crafted Descriptors."
[JCIM 2025] Journal of Chemical Information and Modeling
[Paper]

[J5]   Yi Zhang[†], Yuying Zhao[†], Zhaoqing Li, Xueqi Cheng[†], Yu Wang, Olivera Kotevska, Philip S. Yu, Tyler Derr. "A Survey on Privacy in Graph Neural Networks: Attacks, Preservation, and Applications" 2023.
[TKDE 2024] IEEE Transactions on Knowledge and Data Engineering
[Paper]

[J4]   April Chen, Ryan A. Rossi, Namyong Park, Puja Trivedi, Yu Wang, Tong Yu, Sungchul Kim, Franck Dernoncourt, Nesreen K. Ahmed "Fairness-Aware Graph Neural Networks: A Survey".
[TKDD 2023] IEEE Transactions on Knowledge and Data Engineering
[Paper]

[J3] Yuying Zhao[†], Yu Wang, Yunchao Liu[†], Xueqi Cheng[†], Charu Aggarwal, Tyler Derr "Fairness and Diversity in Recommender Systems: A Survey"
[TIST 2023] ACM Transactions on Intelligent Systems and Technology
[Paper]

[J2] Yu Wang, Jin-Zhu Yu, and Hiba Baroud. "Generating Synthetic Systems of Interdependent Critical Infrastructure Networks."
IEEE System Journals 2021
[Paper]

[J1] Qingfei Gao, Yu Wang, Jun Li, Kejian Sheng, and Chenguang Liu. "An Enhanced Percolation Method for Automatic Detection of Cracks in Bridges."
Advances in Civil Engineering, 2020.
[Paper]

Preprints and Submissions

[P4] Zhisheng Qi[†], Utkarsh Sahu[†], Li Ma, Haoyu Han, Ryan Rossi, Franck Dernoncourt, Mahantesh Halappanavar, Nesreen Ahmed, Yushun Dong, Yue Zhao, Yu Zhang, Yu Wang. "Benchmarking Knowledge-Extraction Attack and Defense on Retrieval-Augmented Generation."
[Paper][Code]

[P4] Yongjia Lei[†], Mahantesh Halappanavar, Yu Wang. "Structural Rule Mining and Learning for Knowledge Retrieval."
[Paper]

[P3] Yu Wang, Jin-Zhu Yu, Hiba Baroud. "A Bayesian Approach to Reconstructing Interdependent Infrastructure Networks from Cascading Failures."
[Paper]

[P2] Yu Wang, Haoyu Han, Harry Shomer, Kai Guo, Jiayuan Ding, Yongjia Lei[†], Mahantesh Halappanavar, Ryan A. Rossi, Subhabrata Mukherjee, Xianfeng Tang, Qi He, Zhigang Hua, Bo Long, Tong Zhao, Neil Shah, Amin Javari, Yinglong Xia, Jiliang Tang. "Retrieval-augmented generation with graphs (GraphRAG)." 2025
[Paper][Code]

[P1] Haoyu Han, Harry Shomer, Yu Wang, Yongjia Lei, Kai Guo, Zhigang Hua, Bo Long, Hui Liu, Jiliang Tang. "RAG vs. GraphRAG: A Systematic Evaluation and Key Insights." 2025
[Paper][Code]

SYMPOSIUMS / WORKSHOPS	**Workshops**

[W9] Riya Ponraj[†], Yu Wang, Ramakrishnan Durairajan. "Unveiling Submarine Cable Paths: A Self-Supervised Contrastive Learning Approach."
[IMC-SW 2025] ACM Internet Measurement Conference Student Workshop.
[Paper]

[W8] Yongjia Lei[†], Yu Wang. "Mixture of Structural-and-Textual Retrieval over Text-rich Graph."
[NAACL-SRM 2025] Nations of the Americas Chapter of the Association for Computational Linguistics, Student Research Workshop.
[Paper]

[W7] Riya Ponraj[†], Ram Durairajan, Yu Wang. "Building Trust in Deep Learning-Powered Network Traffic Classification: A Traffic-Explainer Framework."
[SDM-AI4TS 2026] SIAM International Conference on Data Mining, AI for Time Series
[Paper]

[W6] Yu Wang, Ram Durairajan. "Network Management with Graph Machine Learning."
[SECDAI 2024] Security Datasets for AI Workshop

[W5] Yu Wang. "Data-quality Aware Graph Machine Learning."
[SDM-DF 2024] International Conference on Data Mining Doctoral Forum.
Best Poster Award Runner-ups

[W4]   Yu Wang, Nedim Lipka, Ryan Rossi, Alexa Siu, Ruiyi Zhang, Tyler Derr. "Knowledge Graph Prompting for Multi-Document Question Answering."
[NeurIPS-GLFrontiers 2023] Conference on Neural Information Processing Systems, New Frontiers in Graph Learning.
[Paper] **Best Paper Award (1/70)**

[W3]   Yu Wang and Tyler Derr. "Degree-Related Bias in Link Prediction."
[ICDMW 2022] IEEE International Conference on Data Mining Workshops
[Paper]

[W2]   Yu Wang. "Overcoming Data Quality Issues of Graph Neural Networks."
[SDM-DF 2022] SIAM International Conference on Data Mining Doctoral Forum

[W1]   Yu Wang, Charu Aggarwal, and Tyler Derr. "Distance-wise Prototypical Graph Neural Network in Node Imbalance Classification."
[KDD-MLoG 2021] ACM SIGKDD Conference on Knowledge Discovery and Data Mining
[Paper][Code]

TUTORIALS	Rigorizing Retrieval-augmented Generation with Structural Intelligence [Tutorial]	2025
	• Zhisheng Qi, Yongjia Lei, Haoyu Han, Harry Shomer, Kaize Ding, Yu Zhang, Ryan Rossi, Hui Liu, Yu Wang	
	• **[WSDM 2026]** ACM International Conference on Web Search and Data Mining	
	Empowering Retrieval-augmented Generation with Graph-structured Knowledge [Tutorial]	2024
	• Yu Wang, Haoyu Han, Harry Shomer, Kai Guo, Yongjia Lei, Jiayuan Ding, Xianfeng Tang, Qi He, Jiliang Tang.	
	• **[SDM 2025]** SIAM International Conference on Data Mining	
	Data Quality-Aware Graph Machine Learning [Tutorial]	2024
	• Yu Wang, Kaize Ding, Xiaorui Liu, Jian Kang, Ryan Rossi, and Tyler Derr.	
	• **[CIKM 2024]** ACM International Conference on Information and Knowledge Management	
	Data Quality-Aware Graph Machine Learning [Tutorial]	2023
	• Yu Wang, Yijun Tian, Tong Zhao, Xiaorui Liu, Jian Kang, and Tyler Derr.	
	• **[SDM 2024]** SIAM International Conference on Data Mining	
SELECTED OPEN SOURCE PROJECTS	ChemicalX: A Deep Learning Library for Drug Pair Scoring	2022
	• **[KDD 2022]** ACM SIGKDD International Conference on Knowledge Discovery and Data Mining	
	• **Received 760+ GitHub stars.**	
	• [GitHub][Paper]	
	Knowledge Graph Prompting for Multi-Document Question Answering	2022
	• **[AAAI 2024]** Annual AAAI Conference on Artificial Intelligence	
	• **Received 320+ GitHub stars.**	
	• [GitHub][Paper]	
	Retrieval-Augmented Generation with Graphs	2024
	• **[arXiv 2024]** In Submission	
	• **Received 530+ GitHub stars.**	
	• [GitHub][Paper]	
	In total, my research projects contributed 8 GitHub repositories and **received 2000+ GitHub stars**	
TALKS	**Academic Talks:**	

[AT10]   Rigorizing Neural Thinking with Structural Intelligence   Nov 2025
AI Seminar
Oregon State University, OR

[AT9]   Towards Well-Rounded Graph Retrieval-Augmented Generation   Oct 2024
Learning on Graphs, Seattle Local Meetup
University of Washington, WA

[AT8]   Data-quality-aware Graph Machine Learning for Multi-Purpose-Driven Applications   Oct 2024
Online Machine Learning Seminar
Vanderbilt University, TN

[AT7]   Data-quality-aware Graph Machine Learning   Sep 2024
Intelligent Data Engineering and Analytics Lab
University of North Texas, TX

[AT6]   Relational-aware Retrieval Augmentation for Text Generation (Remote)   May 2024
Large Language Models for Graph Learning Workshop
The World Wide Web Conference, Sentosa, Singapore

[AT5]	Data-quality-aware Graph Machine Learning Data Science for Smart Manufacturing and Healthcare Workshop SIAM International Conference on Data Mining, Houston, TX	Apr 2024
[AT4]	Data-quality-aware Graph Machine Learning School of Information University of Arizona, Tucson, AZ	Feb 2024
[AT3]	Data-quality-aware Graph Machine Learning Department of Computer Science, Data Science Center University of Memphis, Memphis, TN	Feb 2024
[AT2]	Data-quality-aware Graph Machine Learning Department of Computer Science and Data Science University of Oregon, Eugene, Oregon	Jan 2024
[AT1]	Relational-aware Retrieval Augmentation for Text Generation (Remote) Learning of Graphs at MidNorth, Notre Dame, Indiana	Jan 2024

Industry Talks:

[IT2]	Knowledge Graph Prompt Learning for Multi-Document QA Document Intelligence Team, Adobe Research Adobe Inc., SanJose, CA	Aug 2023
[IT1]	Knowledge Graph-based Session Recommendation Online Recommendation Data Science Team The Home Depot, Atlanta, GA	Aug 2022

Guest Talks:

[GT5]	Welcome to Grad School Seminar Computer Science Department University of Oregon, Eugene, OR	Nov 2025
[GT4]	Welcome to Grad School Seminar Computer Science Department University of Oregon, Eugene, OR	Oct 2024
[GT3]	Graph Partitioning with Spectral Methods Social Network Analysis, Computer Science Department Vanderbilt University, Nashville, TN	Mar 2024
[GT2]	Scalability of Graph Neural Networks (GNNs) Social Network Analysis, Computer Science Department Vanderbilt University, Nashville, TN	Nov 2023
[GT1]	Measuring Node Centrality in Social Network Analysis Social Network Analysis, Computer Science Department Vanderbilt University, Nashville, TN	Oct 2021

MENTORING IN KIND LAB	**Knowledge Intelligence for Discovery and Decision-Making Lab (KIND)**, University of Oregon **Ph.D. Students**

- Yongjia Lei, Ph.D. Computer Science   Fall 2024 – Present
  - Research topic: Reasoning, Information Retrieval, Structured Knowledge
  - Publication: [ACL 2025][WSDM 2026][ArXiv1][ArXiv2]
  - Award: SIAM Student Travel Award 2025, **SDM 2025 Doctorial Forum Honorable Mention** UO Best TA Award, UO OpenHouse Poster 3rd Prize
- Riya Ponraj, Ph.D. Computer Science   Fall 2024 – Present
  - Research topic: Graph Machine Learning for Trustworthy Networking Management
  - Publication: [KDD 2026][IMC-SW]
  - Award: **2025 Pulse Research Fellow**, Juilfs Scholarship
- Zhisheng Qi, Ph.D. Computer Science   Fall 2025 – Present
  - Research topic: Safety of Information Retrieval, AI for Natural Science
  - Publication: [WSDM 2026]

Master Students

- Utkarsh Sahu, Master. Computer Science   Spring 2025 – Present
  - Research topic: Agentic Social Network Modeling, Steering and Intervention
  - Publication: [WSDM 2026]

MENTORING IN NDS LAB	**Network and Data Science Lab**, Vanderbilt University **Ph.D. Students**

- Bo Ni, Ph.D. Computer Science   Fall 2023 – Present
  - Research Topic: Knowledge Graphs, Large Language Models
  - Publication: [AAAI 2025]
- Xueqi Cheng, Ph.D. Computer Science   Fall 2023 – Present
  - Research Topic: Deep Learning on Complex Graphs
  - Publication: [KDD 2025][WSDM 2025]
  - Award: Vanderbilt IBM Fellowship Award

- Yuying Zhao, Ph.D. Computer Science   Fall 2021 – Present
  - Research Topic: Graph Machine Learning beyond Utility Metrics
  - Publication: [AAAI 2023][AAAI 2024][WWW 2024][TIST 2025]
  - Award: Vanderbilt IBM Fellowship Award, C.F. Chen Best Paper Runner-Up
  - Next Position: Advanced AI Research Scientist Manager at Accenture
- Yunchao (Lance) Liu, Ph.D. Computer Science   Spring 2021 – Present
  - Research Topic: Geometric Deep Learning for Drug Discovery
  - Publication: [AAAI 2023][NeurIPS 2024]
  - Next Position: Broad Institute of MIT and Harvard

M.S. Students

- Xin Wang, M.S. Computer Science,   Jan 2024 – Present
  - Research Topic: Topological Graph Generative Models
  - Publication: [NeurIPS 2023][CIKM 2024]
  - Award: Vanderbilt's Engineering Graduate Fellowship
  - Next Position: Ph.D. Student at Yale University
- Benjamin Van Sleen, B.S. and M.S. Computer Science,   Dec 2020 – May 2023
  - Research Topic: "Analyzing Language Use in Autism Communities on Reddit."
  - Award: Data Science Institute Summer Research Program Fellow
  - Next Position: Business Analyst at McKinsey & Company

B.S. Students

- Leyao Wang, B.S. Computer Science, B.S. Mathematics   Mar 2024 – Present
  - Research Topic: Large Language Model on Graphs
  - Publication: [KDD 2026]
  - Award: CRA Outstanding Undergraduate Research Award
  - Next Position: Master Student at Yale University
- Macharia Kanyatte, B.S. Electrical and Computer Engineering   Nov 2022 – May 2023
  - Research Topic: Preprocessing signed network datasets and basic network analysis toolkit
  - Tennessee Louis Stokes Alliance Program
  - Georgia Tech REU program during Summer'23
- Ao Qu, B.S. Computer Science, B.S. Economics, B.S. Mathematics   Aug 2020 – Jun 2022
  - Research Topic: Adaptive views in contrastive learning for GNNs
  - Publication: [CCIS]
  - Award: **Best Paper at Oak Ridge Smoky Mountain Urban Computational Challenge**
  - Next Position: Ph.D. student at Massachusetts Institute of Technology

High School Students

- Xinran Pan   Jun 2021 – May 2022
  - Research Topic: Social Good and Simpson's Paradox
  - Next position: Undergraduate Student at Carnegie Mellon University

TEACHING EXPERIENCE	**University of Oregon**

University of Oregon

Professor, Department of Computer Science   Oct 2024 – Present

- CS 410/510: Mining and Learning on Graphs (Undergraduate/Graduate Level, Fall 2024) [Website][Evaluation]
- CS 453: Data Mining (Undergraduate/Graduate Level, Winter 2025) [Website][Evaluation]
- CS 610: Advanced Machine Learning (Graduate Level, Spring 2025)
- CS 607: Seminar in Geometric Machine Learning (Graduate Level, Spring 2025)

Vanderbilt University

Teaching Assistant, Department of Computer Science   Jan 2021 – Present

- CS4260: Artificial Intelligence (Undergraduate/Graduate Level, Spring 2023)
- DS5720: Social Network Analysis (Graduate Level, Fall 2022)
- CS3891/5891-03: Social Network Analysis (Undergraduate/Graduate Level, Fall 2021)

Teaching Assistant, Department of Civil and Environmental Engineering   Aug 2019 – Jan 2021

- CE3300: Risk, Reliability and Resilience Engineering (Undergraduate Level, Spring 20)
- CE2101-01: Civil Engineering Information Systems (Undergraduate Level, Fall 19)

EXTERNAL SERVICES	**Workshop Organizer**	
	• SURGeLLM: Structured Understanding, Retrieval, and Generation in LLMs Era [Website]	2026
	- Collocated at ACL'26	
	• Machine Learning on Graphs in the Era of Artificial General Intelligence [Website]	2025
	- Collocated at KDD'25	
	• Workshop Co-organizer and Web Chair, Machine Learning on Graphs (MLoG)	2024
	- Collocated at ACM WSDM'24	
	• Workshop Co-organizer and Web Chair, Machine Learning on Graphs (MLoG)	2022
	- Collocated at ACM WSDM'22	
	Conference Organizer Chairships	
	• Student Travel Awards Co-chair, CIKM'24	2024
	- ACM International Conference on Information and Knowledge Management	
	Program Committee Member	
	• The 19th ACM International Conference on Web Search and Data Mining (WSDM)	2026
	• Association for the Advancement of Artificial Intelligence (AAAI)	2026
	• The 34th ACM International Conference on Information and Knowledge Management	2025
	• The 28th Artificial Intelligence and Statistics Conference (AISTATS)	2025
	• The 16th Asian Conference on Machine Learning (ACML)	2025
	• ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)	2025
	• ACM International Conference on Web Search and Data Mining (WSDM)	2025
	• Association for the Advancement of Artificial Intelligence (AAAI)	2025
	• European Conference on Machine Learning and Data Mining (ECML PKDD)	2024
	• SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)	2024
	• Association for the Advancement of Artificial Intelligence (AAAI)	2024
	• SIAM International Conference on Data Mining (SDM)	2024
	• ACM International Conference on Web Search and Data Mining (WSDM)	2024
	• SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)	2023
	• ACM International Conference on Web Search and Data Mining (WSDM)	2023
	• Association for the Advancement of Artificial Intelligence (AAAI)	2022
	• SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)	2022
	Conference (Sub-)Reviewer	
	• Neural Information Processing Systems (NeurIPS)	2025
	• International Conference on Machine Learning (ICML)	2025
	• AISTATS 2025 Conference Reviewers	2025
	• International Conference on Learning Representation (ICLR)	2025
	• Learning on Graphs Conference (LOG)	2024
	• Neural Information Processing Systems	2024
	• International AAAI Conference on Web and Social Media (AAAI ICWSM)	2024
	• Learning on Graphs Conference (LOG)	2023
	• Association for the Advancement of Artificial Intelligence (AAAI)	2023
	• ACM International Conference on Web Search and Data Mining (WSDM)	2023
	• International Conference on Machine Learning (ICML)	2023
	• International Conference on Web and Social Media (ICWSM)	2023
	• SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)	2022
	• Neural Information Processing Systems (NeurIPS)	2022
	• Learning on Graphs Conference (LOG)	2022
	• SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)	2021
	• Conference on Information and Knowledge Management (CIKM)	2021
	• Advances in Social Networks Analysis and Mining (ASONAM)	2021
	• SIAM International Conference on Data Mining(SDM)	2021
	• International ACM Conference on Web Science (WebSci)	2021
	• The Web Conference (WWW)	2021

Journal Reviewer

• Transactions on Information Systems	2025 – Present
• Social Network Analysis and Mining	2025 – Present
• IEEE Transactions on Interactive Intelligent Systems	2024 – Present
• IEEE Transactions on Artificial Intelligence	2024 – Present
• ACM Transactions on Intelligent Systems and Technology (TIST)	2023 – Present
• IEEE Transactions on Big Data (TBD)	2023 – Present
• ACM Transactions on Knowledge Discovery from Data (TKDD)	2023 – Present
• Neural Networks	2023 – Present
• IEEE Transactions on Knowledge and Data Engineering (TKDE)	2022 – Present
• Data Mining and Knowledge Discovery (DAMI)	2022 – Present
• Journal of Combinatorial Optimization (JOCO)	2022 – Present

Grant Proposal Panelist

• National Science Foundation (NSF-GRFP Program)	2024

Conference Volunteering

• Session chair at SDM 2025	2025
"CP4 Graph Models and Algorithms"	
• Session chair at CIKM 2024	2024
"Graph Learning II"	
• Session chair at SDM 2024	2024
"Social Networks/Graphs"	
• Session chair at ICDM 2022	2022
"Graph Mining and Embedding"	
• Volunteer at ICDM 2022	2022
• Volunteer at CIKM 2022	2022
• Volunteer at KDD 2022	2022
• Session chair at KDD 2021	2021
"Recommender System"	
• Volunteer at IJCAI 2021	2021
• Volunteer at IJCAI 2020	2020

INTERNAL SERVICES	**Department of Computer Science**

• Computer Science Department Open House	May 2025
• Computer Science Department Faculty Recruiting Dinner with Alex, Kai, Jacobs Jules	Jan 2025
• Graduate Education Committee	Oct 2024- Oct 2025
• Graduate Program Handbook	Oct 2024- Oct 2025
• Gave a Talk at Welcome to CS-610 Grad School Seminar	Oct 2024

PhD Preliminary Exam Committee

• Joseph Colton	(Computer Science)	2025
• River Bartz	(Computer Science)	2025
• Chien Nguyen	(Computer Science)	2025
• Hieu Man	(Computer Science)	2025
• Nghia Ngo	(Computer Science)	2025

University of Oregon

• SCDC Executive Director Onsite Interview with Dr. Vasant Honavar	Dec 2024
• SCDC Executive Director Onsite Interview with Dr. Beth A. Plale	Dec 2024

[*CV compiled on 2026-02-21*]