

JINNING LI

PHD IN COMPUTER SCIENCE, UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

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EDUCATION	University of Illinois at Urbana-Champaign <i>Ph.D. Candidate in Computer Science.</i> Advisor: Prof. Tarek Abdelzaher . University of Illinois at Urbana-Champaign <i>M.S. in Computer Science.</i> Advisor: Prof. Tarek Abdelzaher . Shanghai Jiao Tong University <i>B.S. in Computer Science (ACM Honors Class).</i> Advisors: Prof. Yong Yu and Prof. Xiaofeng Gao .	Aug 2020 - Dec 2024 Aug 2020 - Dec 2022 Sep 2015 - Jun 2019
RESEARCH INTERESTS	Knowledge Graph, Large Language Models, Explainable ML, Generative AI, Social Networks, Information Retrieval, Computer Vision, Autonomous Driving	
INDUSTRY	Google Research Intern <i>Google Search</i> • Multi-modal query intent understanding and query rewriting with LLM (Gemini). • Pseudo rater for multi-modal search with Gemini and LLM-based Dual-Encoder. Amazon Applied Scientist Intern <i>Alexa Intelligent Decision Research</i> • Developed a structure-aware large language model adapter for efficient fine-tuning of LLAMA. • Proposed a relational attention and the KG-induced reasoning path to fuse LLM with KG. • Outperformed existing LLM adapters like LoRA by 14% on QA benchmark datasets. • Distributed LLM training with deepspeed and accelerate libs. Paper submitted to ACL 📄 . Twitter Applied Research Intern <i>Cortex Research</i> • Enhanced tweet LLM representation learning with a large-scale knowledge graph of non-textual units using torchbiggraph lib. Achieved 5% improvements on all the 7 downstream tasks from both internal benchmarks and public datasets. Published a paper. 📄 Pony.ai Machine Learning Engineer (FTE) <i>Perception Team</i> • Deployed fused obstacles (cars, pedestrians, cyclists) classification system with ResNet and random forest. Real-time model inference with TensorRT. Reduced 8% hard brakes. • Proposed and deployed a real-time obstacle trajectory prediction for driveways with RNN and random forest. Solved 24% of driveway-related safety disengagements or hard brake issues. YITU Technology Research Intern <i>Face Recognition Team</i> • Improved face verification accuracy by 4.8% in internal dataset with the proposed identification-preserving super-resolution algorithm based on autoencoders. Published a paper. 📄	May 2024 - Present May - Aug 2023 May - Aug 2022 Jul 2019 - Aug 2020 Feb - Jun 2019
PUBLICATIONS	LLM-Guided Disentangled Belief Representation Learning on Social Graphs 📄 🔗 Jinning Li , Ruipeng Han, Chenkai Sun, D. Sun, R. Wang, J. Zeng, Y. Yan, H. Tong, T. Abdelzaher In <i>The 33rd International Conference on Computer Communications and Networks (ICCCN)</i> 2024 Decoding the Silent Majority: Inducing Belief Augmented Social Graph with Large Language Model for Response Forecasting 📄 🔗 Chenkai Sun, Jinning Li , Yi Fung, Hou Pong Chan, Tarek Abdelzaher, ChengXiang Zhai, Heng Ji In <i>The 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP)</i> 2023 Reconciling Competing Sampling Strategies of Network Embedding 📄 🔗 Yuchen Yan, Baoyu Jing, Lihui Liu, Ruijie Wang, Jinning Li , Tarek Abdelzaher, Hanghang Tong In <i>Conference on Neural Information Processing Systems (NIPS)</i> 2023 Influence Pathway Discovery on Social Media 📄 Xinyi Liu, Ruijie Wang, Dachun Sun, Jinning Li , C. Youn, Y. Lyu, J. Zhan, D. Wu, X. Xu, M. Liu, X. Lei,	

Z. Xu, Y. Zhang, Z. Li, Q. Yang, T. Abdelzaher

In *The 9th IEEE International Conference on Collaboration and Internet Computing (IEEE CIC)* 2023

Unsupervised Belief Representation Learning with Variational Graph Auto-Encoders  

Jinning Li, Huajie Shao, Dachun Sun, R. Wang, Y. Yan, J. Li, S. Liu, H. Tong, T. Abdelzaher

In *International ACM SIGIR Conference (SIGIR)* 2022

The Paradox of Information Access: On Modeling Polarization in the Age of Information 


Chao Xu, Jinyang Li, D. Sun, Jinning Li, T. Abdelzaher, J. Graham, M. Macy, C. Lebiere, B. Szymanski

In *IEEE Transactions on Control of Network Systems (TCNS)* 2023

Measuring the Effect of Influential Messages on Varying Personas  

Chenkai Sun, Jinning Li, Hou Pong Chan, ChengXiang Zhai and Heng Ji

In *Annual Meeting of the Association for Computational Linguistics (ACL)* 2023

Noisy Positive-Unlabeled Learning with Self-Training for Knowledge Graph Reasoning 

Ruijie Wang, Baoyu Li, Yichen Lu, Dachun Sun, Jinning Li, Y. Yan, S. Liu, H. Tong and T. Abdelzaher

In *Annual Meeting of the Association for Computational Linguistics (ACL)* 2023

Unsupervised Image Classification by Ideological Affil. from User-Content Interactions 

Xinyi Liu, Jinning Li, D. Sun, R. Wang, T. Abdelzaher, M. Brown, A. Barricelli, M. Kirchner and A. Basharat

In *PhoMemes Workshop at AAAI Conference on Web and Social Media (ICWSM)* 2023

NTULM: Enriching Social Media Text Representations with Non-Textual Units 

Jinning Li*, Shubhanshu Mishra*, Ahmed El-Kishky, Sneha Mehta, Vivek Kulkarni

In *W-NUT Workshop at International Conference on Computational Linguistics (COLING)* 2022

Learning to Sample and Aggregate: Few-shot Reasoning over Temporal Knowledge Graph 


Ruijie Wang, Zheng Li, Dachun Sun, Shengzhong Liu, Jinning Li, Bing Yin, Tarek Abdelzaher

In *Conference on Neural Information Processing Systems (NIPS)* 2022

Cost Function Learning in Memorized Social Nets with Cognitive Behavioral Asymmetry 

Yanbing Mao, Jinning Li, Naira Hovakimyan, Tarek Abdelzaher, Christian Lebiere

In *IEEE Transactions on Computational Social Systems (TCSS)* 2022

Dissecting Cross-Layer Dependency Inference on Multi-Layered Inter-Dependent Nets 

Yuchen Yan, Qinghai Zhou, Jinning Li, Tarek Abdelzaher, and Hanghang Tong

In *International Conference on Information and Knowledge Management (CIKM)* 2022

ID Preserving Face Super-Resolution Generative Adversarial Networks  

Jinning Li, Yichen Zhou, Jie Ding, Cen Chen, Xulei Yang

In *IEEE Access* 2020

Scribble-to-Painting Transformation with Multi-Task Generative Adversarial Networks  

Jinning Li, Yexiang Xue

In *International Joint Conference on Artificial Intelligence (IJCAI)* 2019

Senti2Pop: Sentiment-Aware Topic Popularity Prediction on Social Media 

Jinning Li, Yirui Gao, Xiaofeng Gao, Yan Shi, Guihai Chen

In *IEEE International Conference on Data Mining (ICDM)* 2019


DancingLines: An Analytical Scheme to Depict Cross-Platform Event Popularity  

Tianxiang Gao, Weiming Bao, Jinning Li, X. Gao, B. Kong, Y. Tang, G. Chen, X. Li

In *International Conference on Database and Expert Systems Applications (DEXA)* 2018

MANUSCRIPTS **Unsupervised Interpretable Ideological Embedding with Variational Graph Autoencoders** 

Jinning Li, Xinyi Liu, Ruijie Wang, Huajie Shao, Matthias Kirchner, Arslan Basharat, Dachun Sun, Yuchen Yan, Jinyang Li, Shengzhong Liu, Hanghang Tong, and Tarek Abdelzaher

Structure-Aware Adapter for Large Language Model 

Jinning Li, Pragaash Ponnusamy, Z. Sun, J. FitzGerald, J. Oh, C. Ma, W. Shen, C. Guo, T. Abdelzaher

RESEARCH EXPERIENCE	University of Illinois at Urbana-Champaign <i>Social Sensing, Knowledge Graph, NLP</i>	
	Ph.D. Student. Advisor: Prof. Tarek Abdelzaher	Aug 2020 - Present
	<ul style="list-style-type: none"> Unsupervised explainable belief representation learning for users and contents on social networks, based on variational graph autoencoders [1]. Led a team and developed the DARPA INCAS system [2] to automatically collect data from social medias, analyze and predict the belief and response of social entities using the proposed InfoVGAE and hierarchical regression model tree algorithms [3]. 	
	Purdue University <i>Computer Vision, GANs</i>	
	Research Assistant. Advisor: Prof. Yexiang Xue	Sep - Dec 2018
	<ul style="list-style-type: none"> Oil painting arts generation with proposed multi-task generative adversarial networks. 	
	Cornell University <i>Counterfactual Machine Learning, Recommendation Systems</i>	
	Research Assistant. Advisor: Prof. Thorsten Joachims	Jul - Aug 2018
	<ul style="list-style-type: none"> Counterfactual Risk Minimization Model with Logged Bandit Feedbacks. Rank 1 in Criteo Advertisement Placement Competition. 	
	Shanghai Jiao Tong University <i>NLP and Data Mining for Social Networks</i>	
	Research Assistant. Advisor: Prof. Xiaofeng Gao	Jul 2017 - Jun 2019
	<ul style="list-style-type: none"> Cross-platform social event popularity detection and alignment. Sentiment-aware topic popularity time series prediction on social media. 	
AWARDS	Zhiyuan International Research Scholarship (<i>First Prize</i>).	2019
	Han-Ying-Ju-Hua Scholarship.	2018
	Academic Excellence Scholarship of SJTU (<i>First Prize</i>).	2017, 2018
	International Interdisciplinary Contest in Modeling (<i>Meritorious Winner</i>).	2017
	Zhiyuan Honorary Scholarship.	2016, 2017
	International Mathematical Contest in Modeling (<i>Outstanding Winner</i>).	2015
	Dongrun-Yau International High School Science Award.	2015
ACADEMIC SERVICES	<i>Teaching Assistant</i> at CS122: Programming	
	<i>Teaching Assistant</i> at CS307: Operating System	
	<i>Teaching Assistant</i> at CS510: Information Retrieval	
	<i>Program Committee</i> at AAAI Conference	
PROGRAMMING	C, C++, Java, Python (TensorFlow, PyTorch, Huggingface)	
PROFICIENCIES	SQL, BigQuery, HTML, Javascript, MATLAB, L ^A T _E X,	