

# JINNING LI

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

jinning4@illinois.edu


www.jinningli.cn

+1 217-200-2694

EDUCATION	<b>University of Illinois at Urbana-Champaign</b> <i>Ph.D. Candidate in Computer Science.</i> Advisor: Prof. <a href="#">Tarek Abdelzaher</a> . <b>University of Illinois at Urbana-Champaign</b> <i>M.S. in Computer Science.</i> Advisor: Prof. <a href="#">Tarek Abdelzaher</a> . <b>Shanghai Jiao Tong University</b> <i>B.S. in Computer Science (ACM Honors Class).</i> Advisors: Prof. <a href="#">Yong Yu</a> and Prof. <a href="#">Xiaofeng Gao</a> .	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	<b>Google   Research Intern</b> <i>Google Search</i> • Multi-modal query intent understanding and query rewriting with LLM (Gemini). • Pseudo-rater and model distillation for multi-modal search quality. <b>Amazon   Applied Scientist Intern</b> <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 <b>14%</b> on QA benchmark datasets. • Distributed LLM training with deepspeed and accelerate libs. Paper submitted to ACL <a href="#">📄</a> . <b>Twitter   Applied Research Intern</b> <i>Cortex Research</i> • Enhanced tweet LLM representation learning with a large-scale knowledge graph of non-textual units using torchbiggraph lib. Achieved <b>5%</b> improvements on all the 7 downstream tasks from both internal benchmarks and public datasets. Published a paper. <a href="#">📄</a> <b>Pony.ai   Machine Learning Engineer (FTE)</b> <i>Perception Team</i> • Deployed fused obstacles (cars, pedestrians, cyclists) classification system with ResNet and random forest. Real-time model inference with TensorRT. Reduced <b>8%</b> hard brakes. • Proposed and deployed a real-time obstacle trajectory prediction for driveways with RNN and random forest. Solved <b>24%</b> of driveway-related safety disengagements or hard brake issues. <b>YITU Technology   Research Intern</b> <i>Face Recognition Team</i> • Improved face verification accuracy by <b>4.8%</b> in internal dataset with the proposed identification-preserving super-resolution algorithm based on autoencoders. Published a paper. <a href="#">📄</a>	May 2024 - Present  May - Aug 2023  May - Aug 2022  Jul 2019 - Aug 2020  Feb - Jun 2019
PUBLICATIONS	<b>LLM-Guided Disentangled Belief Representation Learning on Social Graphs</b> <a href="#">📄</a> <a href="#">🔗</a> <b>Jinning Li</b> , 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 <b>Decoding the Silent Majority: Inducing Belief Augmented Social Graph with Large Language Model for Response Forecasting</b> <a href="#">📄</a> <a href="#">🔗</a> Chenkai Sun, <b>Jinning Li</b> , 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 <b>Reconciling Competing Sampling Strategies of Network Embedding</b> <a href="#">📄</a> <a href="#">🔗</a> Yuchen Yan, Baoyu Jing, Lihui Liu, Ruijie Wang, <b>Jinning Li</b> , Tarek Abdelzaher, Hanghang Tong In <i>Conference on Neural Information Processing Systems (NIPS)</i> 2023 <b>Influence Pathway Discovery on Social Media</b> <a href="#">📄</a> Xinyi Liu, Ruijie Wang, Dachun Sun, <b>Jinning Li</b> , 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	<b>University of Illinois at Urbana-Champaign</b> <i>Social Sensing, Knowledge Graph, NLP</i>			
	<b>Ph.D. Student.</b> Advisor: Prof. <a href="#">Tarek Abdelzaher</a>	Aug 2020 - Present		
	<ul style="list-style-type: none"><li>Unsupervised explainable belief representation learning for users and contents on social networks, based on variational graph autoencoders <a href="#">[1]</a>.</li><li>Led a team and developed the DARPA INCAS system <a href="#">[2]</a> 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 <a href="#">[3]</a>.</li></ul>			
	<b>Purdue University</b> <i>Computer Vision, GANs</i>			
	<b>Research Assistant.</b> Advisor: Prof. <a href="#">Yexiang Xue</a>	Sep - Dec 2018		
	<ul style="list-style-type: none"><li>Oil painting arts generation with proposed multi-task generative adversarial networks.</li></ul>			
	<b>Cornell University</b> <i>Counterfactual Machine Learning, Recommendation Systems</i>			
	<b>Research Assistant.</b> Advisor: Prof. <a href="#">Thorsten Joachims</a>	Jul - Aug 2018		
	<ul style="list-style-type: none"><li>Counterfactual Risk Minimization Model with Logged Bandit Feedbacks.</li><li>Rank 1 in Criteo Advertisement Placement Competition.</li></ul>			
	<b>Shanghai Jiao Tong University</b> <i>NLP and Data Mining for Social Networks</i>			
	<b>Research Assistant.</b> Advisor: Prof. <a href="#">Xiaofeng Gao</a>	Jul 2017 - Jun 2019		
	<ul style="list-style-type: none"><li>Cross-platform social event popularity detection and alignment.</li><li>Sentiment-aware topic popularity time series prediction on social media.</li></ul>			
	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 PROFICIENCIES	C, C++, Java, Python (TensorFlow, PyTorch, Huggingface)			
	SQL, BigQuery, HTML, Javascript, MATLAB, $\LaTeX$ ,			