

# JINNING LI

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

jinning4@illinois.edu  
www.jinningli.cn

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EDUCATION	<b>University of Illinois at Urbana-Champaign</b> <i>Ph.D. Student 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> .	Aug 2020 - Dec 2024 Aug 2020 - Dec 2022
	<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> .	Sep 2015 - Jun 2019

RESEARCH INTERESTS Knowledge Graph, Natural Language Processing, and Generative AI for Social Networks, Recommendation Systems, Computer Vision, Autonomous Driving

INDUSTRY	<b>Amazon   Applied Scientist Intern</b> <i>Alexa Intelligent Decision Research</i> May - Aug 2023
	<ul style="list-style-type: none"><li>Developed a structure-aware large language model adapter for efficient fine-tuning of LLAMA.</li><li>Proposed a relational attention and the KG-induced reasoning path to fuse LLM with KG.</li><li>Outperformed existing LLM adapters like LoRA by <b>14%</b> on QA benchmark datasets.</li><li>Distributed LLM training with deepspeed and accelerate libs. Paper submitted to ACL <a href="#">📄</a>.</li></ul>
	<b>Twitter   Applied Research Intern</b> <i>Cortex Research</i> May - Aug 2022
	<ul style="list-style-type: none"><li>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></li></ul>
<b>Pony.ai   Machine Learning Engineer</b> (Full-Time) <i>Perception Team</i> Jul 2019 - Aug 2020	
<ul style="list-style-type: none"><li>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.</li><li>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.</li></ul>	
<b>YITU Technology   Research Intern</b> <i>Face Recognition Team</i> Feb - Jun 2019	
<ul style="list-style-type: none"><li>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></li></ul>	


PUBLICATIONS	<b>Decoding the Silent Majority: Inducing Belief Augmented Social Graph with Large Language Model for Response Forecasting</b> 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> 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> 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 <i>The 9th IEEE International Conference on Collaboration and Internet Computing (IEEE CIC)</i> 2023
	<b>Unsupervised Belief Representation Learning with Variational Graph Auto-Encoders</b> <a href="#">📄</a> <a href="#">🌐</a> <b>Jinning Li</b> , Huajie Shao, Dachun Sun, R. Wang, Y. Yan, J. Li, S. Liu, H. Tong, T. Abdelzaher In <i>International ACM SIGIR Conference (SIGIR)</i> 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**<sup>\*</sup>, Shubhanshu Mishra<sup>\*</sup>, 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  
Submission to *IEEE Transactions on Knowledge and Data Engineering (TKDE)*



**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  
Submission to *Annual Meeting of the Association for Computational Linguistics (ACL)* 2024

RESEARCH  
EXPERIENCE**University of Illinois at Urbana-Champaign Social Sensing, Knowledge Graph, NLP**

**Ph.D. Student.** Advisor: Prof. [Tarek Abdelzaher](#) Aug 2020 - Present

- Unsupervised explainable belief representation learning for users and contents on social networks, based on variational graph autoencoders .

- Led a team and developed the DARPA INCAS system  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 .

**Purdue University** *Computer Vision, GANs*

**Research Assistant.** Advisor: Prof. [Yexiang Xue](#)

Sep - Dec 2018

- Oil painting arts generation with proposed multi-task generative adversarial networks.

**Cornell University** *Counterfactual Machine Learning, Recommendation Systems*

**Research Assistant.** Advisor: Prof. [Thorsten Joachims](#)

Jul - Aug 2018

- Counterfactual Risk Minimization Model with Logged Bandit Feedbacks.
- Rank 1 in Criteo Advertisement Placement Competition.

**Shanghai Jiao Tong University** *NLP and Data Mining for Social Networks*

**Research Assistant.** Advisor: Prof. [Xiaofeng Gao](#)

Jul 2017 - Jun 2019

- Cross-platform social event popularity detection and alignment.
- Sentiment-aware topic popularity time series prediction on social media.

#### AWARDS

Zhiyuan International Research Scholarship (*First Prize*). 2019

Han-Ying-Ju-Hua Scholarship. 2018

Academic Excellence Scholarship of SJTU (*First Prize*). 2017, 2018

International Interdisciplinary Contest in Modeling (*Meritorious Winner*). 2017

Zhiyuan Honorary Scholarship. 2016, 2017

International Mathematical Contest in Modeling (*Outstanding Winner*). 2015

Dongrun-Yau International High School Science Award. 2015

#### ACADEMIC SERVICES

*Teaching Assistant* at CS122: Programming

*Teaching Assistant* at CS307: Operating System

*Teaching Assistant* at CS510: Information Retrieval

*Program Committee* at AAAI Conference

#### PROGRAMMING PROFICIENCIES

C, C++, Java, Python (TensorFlow, PyTorch, Huggingface)

SQL, BigQuery, HTML, Javascript, MATLAB,  $\LaTeX$ ,