

Zhenyu Lei

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Research Interests

My primary research interests lie at solving real-world challenges with LLMs, graph models, spatial-temporal models, AI for science, and fairness algorithms. Currently, one paper about molecule language model and knowledge editing has been submitted to ACL rolling review.

Education

University of Virginia, Charlottesville, VA, USA 2023.8-present

Ph.D. in ECE

Advisor: Jundong Li

Xi'an Jiaotong University, Xi'an, Shaanxi, China 2019.8-2023.6

B.S. in Physics

GPA: 89.46/100 (3.82/4.3) (**Transcript**)

Advisor: Minnan Luo

Publications (* equal contribution)

[14] **Editing Multimodal Molecule Language Models**

Zhenyu Lei, Patrick Soga, Yaochen Zhu, Yinhan He, Yushun Dong, Jundong Li

Submitted to ARR

[13] **A Benchmark for Fairness-Aware Graph Learning**

Yushun Dong, Song Wang, **Zhenyu Lei**, Zaiyi Zheng, Jing Ma, Chen Chen, Jundong Li

Preprint

[12] **Harnessing Large Language Models for Disaster Management: A Survey**

Zhenyu Lei, Yushun Dong, Weiyu Li, Rong Ding, Qi Wang, Jundong Li

Preprint

[11] **BrainMAP: Learning Multiple Activation Pathways in Brain Networks**

Song Wang*, **Zhenyu Lei***, Zhen Tan, Jiaqi Ding, Xinyu Zhao, Yushun Dong, Guorong Wu, Tianlong Chen, Chen Chen, Aiyang Zhang, Jundong Li

AAAI'25 (Oral)

[10] **ST-FiT: Inductive Spatial-Temporal Forecasting with Limited Training Data**

Zhenyu Lei, Yushun Dong, Jundong Li, Chen Chen

AAAI'25 (Oral)

[9] **Deep Interactions for Multimodal Molecular Property Prediction**

Patrick Soga, **Zhenyu Lei**, Camille Bilodeau, and Jundong Li

PAKDD'25

[8] **Idea: A flexible framework of certified unlearning for graph neural networks**

Yushun Dong, Binchi Zhang, **Zhenyu Lei**, Na Zou, Jundong Li

KDD'24

[7] **PyGDebias: A Python Library for Debiasing in Graph Learning**

Yushun Dong, **Zhenyu Lei**, Zaiyi Zheng, Song Wang, Jing Ma, Alex Jing Huang, Chen Chen, Jundong Li
WWW'24

[6] **LMBot: Distilling Graph Knowledge into Language Model for Graph-less Deployment in Twitter Bot Detection**

Zijian Cai, Zhaoxuan Tan, **Zhenyu Lei**, Hongrui Wang, Zifeng Zhu, Qinghua Zheng, Minnan Luo
WSDM'24

[5] **HOFA: Twitter Bot Detection with Homophily-Oriented Augmentation and Frequency Adaptive Attention**

Sen Ye, Zhaoxuan Tan, **Zhenyu Lei**, Ruijie He, Hongrui Wang, Qinghua Zheng, Minnan Luo
arXiv'23

[4] **Twibot-22: Towards graph-based Twitter bot detection**

Shangbin Feng, Zhaoxuan Tan, Herun Wan, Ningnan Wang, Zilong Chen, Binchi Zhang, Qinghua Zheng, Wenqian Zhang, **Zhenyu Lei**, Shujie Yang, Xinshun Feng, Qingyue Zhang, Hongrui Wang, Yuhao Liu, Yuyang Bai, Heng Wang, Zijian Cai, Yanbo Wang, Lijing Zheng, Zihan Ma, Jundong Li, Minnan Luo
NeurIPS'23

[3] **KALM: Knowledge-Aware Integration of Local, Document, and Global Contexts for Long Document Understanding**

Shangbin Feng, Zhaoxuan Tan, Wenqian Zhang, **Zhenyu Lei**, Yulia Tsvetkov
ACL'23

[2] **BIC: Twitter Bot Detection with Text-Graph Interaction and Semantic Consistency**

Zhenyu Lei*, Herun Wan*, Wenqian Zhang, Shangbin Feng, Jundong Li, Qinghua Zheng, Minnan Luo
ACL'23

[1] **KCD: Knowledge Walks and Textual Cues Enhanced Political Perspective Detection in News Media**

Wenqian Zhang, Shangbin Feng, Zilong Chen, **Zhenyu Lei**, Jundong Li, Minnan Luo
NAACL'22

Honors and Awards

UVA Precision Health Initiative Trainee Travel Stipend	2025
UVA Engineering Academic Commitment to Excellence (ACE) Fellowship	2024
Scholarship for Outstanding Sichuan Students	2021
Provincial First Prize, CUMCM	2020
Dean's List, Xi'an Jiao Tong University	2020, 2021

Services

Reviewer for COLM	2024
Reviewer for KDD	2024
Reviewer for ACL Rolling Review	from 2023, Dec
Volunteer for ACL	2023
Reviewer for NeurIPS	2023

Mentorship

Sen Ye → first author in 1*WSDM 2024 submission, PhD student @ Peking University
Zijian Cai → first author in 1*WSDM, MS student @ The Institute of Automation, CAS

Teaching

Teaching Assistant of CS 3501 Foundation of Data Analysis, University of Virginia	2024 Spring
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Skills

- Programming Skills: Python, PyTorch, MATLAB, C/C++, bash, HTML/CSS, \LaTeX
- Language Skills: Mandarin (native), English (TOEFL 101: R 29, L 29, S 22, W 21)