Bowen Jin

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RESEARCH INTERESTS

Natural Language Processing · Graph Mining · Information Retrieval · Recommender System

My research interests lie in modeling unstructured data (e.g., text), structured data (e.g., table, graph) and their intersection. I strive to answer the following questions.

- **What structured knowledge do pretrained language models encode?**
- **How to leverage external/internal structure information to better address NLP tasks?**
- **How to empower structure learning (e.g., graph learning, table learning) with the associated textual semantics signal?**

EDUCATION

University of Illinois at Urbana-Champaign *2021.08 - Present*
Ph.D. Student in Computer Science. Advisor: Prof. Jiawei Han
GPA: 4.0/4.0.

Tsinghua University *2017.09 - 2021.07*
B.S. in Electrical Engineering & Statistics. Advisor: Prof. Yong Li
GPA: 3.9/4.0. Outstanding Graduates.

PROFESSIONAL EXPERIENCE

University of Illinois at Urbana-Champaign *2021.08 - Present*
- **Research Assistant. Data Mining Group. Advisor: Prof. Jiawei Han**
- Project: Representation Learning on Text-rich Networks with Pretrained Language Models.

Microsoft Research *2022.05 - 2022.08*
- **Research Intern. Information and Data Science Group. Mentors: Dr. Chenyan Xiong and Alec Berntson**
- Project: Dense Retrieval for Heterogeneous Data.

Microsoft Research *2020.09 - 2021.03*
- **Research Intern. Social Computing Group. Mentors: Dr. Zheng Liu and Dr. Xing Xie**
- Project: Knowledge-enpowered News Recommendation.

University of California Los Angeles *2020.07 - 2020.09*
- **Research Assistant. Data Mining Group. Mentor: Prof. Yizhou Sun**
- Project: Kernel-based Graph Pooling for Graph representation Learning.

Tsinghua University *2018.09 - 2020.07*
- **Research Assistant. Future Intelligence Lab. Advisor: Prof. Yong Li**
- Project: Recommendation with Graph Neural Networks (First-author paper in SIGIR'20)

University of Michigan *2019.07 - 2019.09*
- **Research Assistant. Michigan Institute for Data Science. Advisor: Prof. Ji Zhu**
- Project: Statistical Network Analysis

SELECTED PUBLICATIONS

Bowen Jin, Wentao Zhang, Yu Zhang, Yu Meng, Xinyang Zhang, Qi Zhu, and Jiawei Han.
Patton: Language Model Pretraining on Text-rich Networks.
(submitted to ACL 2023).

Bowen Jin, Yu Zhang, Qi Zhu, and Jiawei Han.
Heterformer: Transformer-based Deep Node Representation Learning on Heterogeneous Text-Rich Networks.
preprint arXiv:2205.10282, 2022 (submitted to KDD 2023).

Bowen Jin, Yu Zhang, Yu Meng, and Jiawei Han.
Edgeformers: Graph-Empowered Transformers for Representation Learning on Textual-Edge Networks.
The 11th International Conference on Learning Representations (ICLR 2023).

Yu Zhang, Bowen Jin, Qi Zhu, Yu Meng, and Jiawei Han.
The Effect of Metadata on Scientific Literature Tagging: A Cross-Field Cross-Model Study.
The 2023 ACM Web Conference (WWW 2023).

Bowen Jin, Chen Gao, Xiangnan He, Depeng Jin, and Yong Li.
Multi-behavior Recommendation with Graph Convolutional Networks.
The 43rd ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2020).

AWARDS

2021	**Outstanding Graduates (Top 1% in THU)**
2021	**"Star of Tomorrow" Award, Microsoft Research**
2020	**China National Scholarship (Top 1% in THU)**
2019	**China National Scholarship (Top 1% in THU)**
2019	**Honorable Mention (top 15.35%), Mathematical Contest in Modeling**
2018	**China National Scholarship (Top 1% in THU)**
2017	**First Prize, National Olympiad in Mathematics in Provinces**

TECHNICAL STRENGTHS

Skills	**Machine Learning, Natural Language Processing, Language Modeling, Graph Mining, Weakly Supervised Learning, Unsupervised Learning, Information Retrieval**
Programming Languages	**Python, C/C++, MATLAB, R, Linux, Markdown, Shell, SQL**
Machine Learning Packages	**PyTorch, Keras, HuggingFace Transformers, Scikit-learn, PyTorch-Geometric, Deep Graph Library**
Tools	**Bash, LaTeX, Git**