RAN XU

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EDUCATION

Laney Graduate School, Emory University   **Atlanta, GA, USA**
Ph.D. in Computational Science and Informatics   *Aug. 2021 - Present*

- Ph.D. Advisors: Dr. Carl Yang and Dr. Joyce Ho;

- **Research Interest**: Health Informatics, Natural Language Processing, Large Language Models, Graph Learning

Department of Computer Science and Mathematics, Emory University   **Atlanta, GA**
B.S. in Computer Science; B.S. in Applied Mathematics   *Aug. 2017 - May 2021*

- GPA: 3.969/4.00;

- Research Assistant advised by Dr. Jinho Choi working on early detection of Alzheimer's Disease from patients' speech recordings.

INDUSTRY EXPERIENCE

Meta Platforms, Inc. (formerly named Facebook, Inc.)   **Menlo Park, CA, USA**
Enterprise Engineer, Mentor: *Zexi Zhang*   *May. 2020 - Aug. 2020*

- Designed a brand-new user interface for Facebook's procurement platform to facilitate Facebook employees communicate and collaborate with its thousands of suppliers using React, Relay, JavaScript and CSS.

- Enhanced backend flow using Hack to support three-way communication between employees and suppliers.

- Wrapped up data queries from backend to frontend using GraphQL.

PUBLICATIONS

1. **Ran Xu**, Yue Yu, Joyce C. Ho and Carl Yang. "Weakly-supervised Scientific Document Classification via Retrieval-Augmented Multi-stage Training." In *Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, 2023.

2. **Ran Xu**, Yue Yu, Hejie Cui, Xuan Kan, Yanqiao Zhu, Joyce C Ho, Chao Zhang, and Carl Yang. "Neighborhood-regularized Self-Training for Learning with Few Labels." In *Proceedings of the Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, 2023.

3. **Ran Xu**, Mohammed K Ali, Joyce Ho, Carl Yang. "Hypergraph Transformers for EHR-based Clinical Predictions.". In *Proceedings of the American Medical Informatics Association Informatics Summit (AMIA)*, 2023.

4. **Ran Xu**, Yue Yu, Chao Zhang, Mohammed K Ali, Joyce C Ho, and Carl Yang. "Counterfactual and Factual Reasoning over Hypergraphs for Interpretable Clinical Predictions on EHR". In *Proceedings of the 2nd Machine Learning for Health symposium (ML4H)*, 2022. **Best Paper Award.**

5. Yue Yu, Rongzhi Zhang, **Ran Xu**, Jieyu Zhang, Jiaming Shen and Chao Zhang. "Cold-Start Data Selection for Few-shot Language Model Fine-tuning: A Prompt-Based Uncertainty Propagation Approach." In *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL)*, 2023.

6. Hejie Cui, Xinyu Fang, Zihan Zhang, **Ran Xu**, Xuan Kan, Xin Liu, Manling Li, Yangqiu Song, Carl Yang. "Open Visual Knowledge Extraction via Relation-Oriented Multimodality Model Prompting" To appear at *Proceedings of the Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS)*, 2023.

7. Yue Yu, Xuan Kan, Hejie Cui, **Ran Xu**, Yujia Zheng, Xiangchen Song, Kun Zhang, Raziel Nabi, Ying Guo, Chao Zhang and Carl Yang. "Deep DAG Learning of Effective Brain Connectivity for fMRI Analysis." In *Proceedings of the 20th IEEE International Symposium on Biomedical Imaging (ISBI)*, 2023.

8. Xuan Kan, Zimu Li, Hejie Cui, Yue Yu, **Ran Xu**, Shaojun Yu, Zilong Zhang, Ying Guo, Carl Yang, "R-Mixup: Riemannian Mixup for Biological Networks", In *Proceedings of the 29th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2023.

9. Hejie Cui, Jiaying Lu, Shiyu Wang, **Ran Xu**, ..., Carl Yang (12 authors in total), "A Survey on Knowledge Graphs for Healthcare: Resources, Applications, and Promises", In *the 3rd Workshop on Interpretable Machine Learning in Healthcare*, 2023.

10. **Ran Xu**, Hejie Cui, Yue Yu, Xuan Kan, Wenqi Shi, Yuchen Zhuang, Wei Jin, Joyce Ho, Carl Yang. "Knowledge-Infused Prompting Improves Clinical Text Generation with Large Language Models", Under Review, 2023.

HONORS AND AWARDS

- Best Paper Award at Machine Learning for Health 2022 (Top 2) *Nov. 2022*
- Women in Natural Sciences Fellowship *Fall 2021*
- The Chair's Award for Achievements (Top 1) *2020, 2021*
- Highest Honor in Honor thesis *Spring 2021*
- Dean's List *Fall 2017, Spring 2018, Fall 2018, Spring 2019*

PROFESSIONAL SKILLS

- Programming language: Python, Java, MATLAB, Latex.
- Deep learning frameworks: Pytorch, Keras.

SERVICES

- **Teaching Experience**:

  Teaching Assistant for CS570: Data Mining. *Spring 2023, Spring 2022*

  Teaching Assistant for CS253: Data Structures and Algorithms. *Spring 2021, Fall 2021*

- **Conference and Journal Review**: ICLR 2024; NeurIPS 2023; LoG 2023; KDD 2023, 2022; MLHC 2023; CHIL 2023; WWW 2023, 2022; AMIA 2023; TBD 2022; TKDE 2021.