Yuyang Ye

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Education

Rutgers University, New Jersey, United States **Sep 2020 - May 2025**
Ph.D. in Information Technology, Rutgers Data Mining Group Advisor: Prof. Hui Xiong

University of Science and Technology of China, Hefei, China **Aug 2017 - Jun 2020**
M.Eng. in Computer Science, State Key Laboratory of Cognitive Intelligence Advisor: Prof. Hui Xiong & Prof. Qi Liu

University of Science and Technology of China, Hefei, China **Sep 2013 - Jun 2017**
B.Eng. in Computer Science

Research Domain

Data Mining, Large Language Model, Graph Learning, Recommender System, Reinforcement Learning

Professional Experience

Rutgers Business School, The Center of Data Mining and Business Analytics **Sep 2020 – May 2025**
Research Assistant Piscataway, NJ

- **Influence-based Graph AutoEncoder**: Developed a university evaluation framework focusing on graduate employment. Designed novel attentive aggregation and dual self-attention modules to extract structural-temporal patterns from dynamic heterogeneous graphs. Introduced HITS-inspired architecture to maintain institutional influence through graph reconstruction. Enhanced prediction performance (8.2% ↑ AUC for links, 10.1% ↓ RMSE for weights), providing robust analysis for university influence.[TKDE'24]
- **MLLM based Multimodal Recommendation**: Developed a two-stage multimodal prompting framework for multimodal sequential recommendations, addressing the challenge of handling lengthy multimodal sequences in MLLMs.. Proposed recurrent preference inference to segment user interactions and dynamically model temporal behavior patterns. Applied SFT to optimize MLLMs for recommendation scenarios, achieving 3.71% ↑ AUC and 9.7% ↑ Recall@5, surpassing SOTA baselines across datasets.[AAAI'25]
- **Risk-aware Dynamic Treatment Regimes**: Developed SAFER, a risk-aware multimodal framework for precision treatment optimization, integrating structured EHR with clinical notes through cross-modal learning. Designed an uncertainty-aware fine-tuning strategy to resolve label ambiguity brought by deceased patients, and implemented conformal prediction for statistically guaranteed safety. Achieved 6.5% ↑ AUC and 13.5% ↓ counterfactual mortality versus SOTA across sepsis cohorts.[ICML'25]
- **RLHF based Personalized Advertisements**: Developed an a multi-stage training method which deploys SFT and GRPO to align Large Language Models for generating personalized advertisements, optimized by click-through rate rewards. (Ongoing)

Baidu USA, Baidu Research Institute, Silicon Valley AI Lab **June 2024 – Sep 2024**
Research Intern, Supervisor: Dr. Xin Zhou Sunnyvale, CA

- **Environment-aware Motion Generation**: Developed a diffusion-based motion synthesis system for virtual characters in obstacle-filled environments. Leveraged pre-trained diffusion models to generate human motion sequence animations from textual prompts of action descriptions, combined with multimodal navigation system (obstacle avoidance algorithms & LVLM agents) for context-aware path planning. Achieved real-time adaptive movement via training-free optimization.(Ongoing)

NEC Laboratories, Data Science and System Security Department **May 2023 - Sep 2023**
Research Intern, Supervisor: Dr. Lu-An Tang Princeton, NJ

- **Performance based Adversarial Imitation Learning**: Developed a PAIL engine for optimize an Industry 4.0 carbon neutrality, tackling historical dependency, complex action space and sequence diversity. Designed a Transformer based policy generator to predict the actions with historical data. Designed a Q-learning based performance estimator with a discriminator to assess the impact of distinct actions on optimized objectives. Achieved 36.9% ↑ performance over SOTA across industrial environments.[KDD'24]

Baidu Inc., Talent Intelligence Center **Jul 2018 - Aug 2021**
Research Intern, Supervisor: Dr. Hengshu Zhu Beijing, China

- **Neural Network based Dynamic Social Profiling**: Developed NNDSP approach to quantitatively identify high-potential talents (HIPOs) among newly onboarded employees. Proposed to combine social centrality analysis and Graph Convolutional Networks (GCN) to model both local and global social dynamics of employees, and utilized an attentive LSTM to capture the evolution of their social profiles over time. Achieved an average 10.8% ↑ AUC and 28.3% ↑ F1-Score for HIPO identification.[ICDM'19]
- **Multiplex Attentive Network Embedding**: Developed MANE method to model employee behaviors across organizational networks. Designed an attributed random walk approach and hierarchical attention mechanisms for preserving the attributed and structural information of the network. Applied learned embeddings to multiple HR tasks achieving a 7.5% ↑ AUC for employee performance prediction, a 3.2% ↑ AUC in turnover prediction, and a 5.7% ↑ AUC in department performance prediction.[TKDE'22]

SELECTED PUBLICATIONS [GOOGLE SCHOLAR]

- **Ye, Y.***, Shen, Y.*, , Xiong, H.& Chen, Y. SAFER: A Calibrated Risk-Aware Multimodal Recommendation Model for Dynamic Treatment Regimes. Accepted by the 42nd Internation Conference on Machine Learning (ICML). 2025.
- **Ye, Y.**, Zheng, Z., Shen, Y., Wang, T., Zhang, H., Zhu, P., ... & Xiong, H. Harnessing multimodal large language models for multimodal sequential recommendation. The 39th Annual AAAI Conference on Artificial Intelligence (AAAI). 2025.
- **Ye, Y.**, Tang, L. A., Wang, H., Yu, R., Yu, W., ... & Xiong, H. PAIL: Performance based Adversarial Imitation Learning Engine for Carbon Neutral Optimization. The 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD). 2024.
- **Ye, Y.**, Zhu, H., Cui, T., Yu, R., Zhang, L., & Xiong, H. University Evaluation through Graduate Employment Prediction: An Influence based Graph Autoencoder Approach. IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE). 2024.
- **Ye, Y.**, Dong, Z., Zhu, H., Xu, T., Song, X., Yu, R., & Xiong, H. MANE: Organizational network embedding with multiplex attentive neural networks. IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE), 2022.
- **Ye, Y.**, Zhu, H., Xu, T., Zhuang, F., Yu, R., & Xiong, H. Identifying high potential talent: A neural network based dynamic social profiling approach. The 19th IEEE International Conference on Data Mining (ICDM). 2019. (full paper)
- Hu, B., Zhang, K., Zhang, Y., **Ye, Y**. Adaptive Multimodal Fusion: Dynamic Attention Allocation for Intent Recognition The 39th Annual AAAI Conference on Artificial Intelligence (AAAI). 2025.
- Yang, M., Zhang, K., **Ye, Y**, Zhang, Y., Yu, R., Hou, M. Decoupling and Reconstructing: a Multimodal Sentiment Analysis Framework Towards Robustness. The 34th International Joint Conference on Artificial Intelligence (IJCAI), 2025.
- Chen, L., Sun, Y., Zhang, S., **Ye, Y.**, Wu, W., & Xiong, H. Tackling uncertain correspondences for multi-modal entity alignment. The 38th Annual Conference on Neural Information Processing Systems (NeurIPS). 2024.
- Xu, D., Zhang, Z., Zhu, Z., Lin, Z., Liu, Q., **Ye, Y.**, ..., & Chen, E. Editing factual knowledge and explanatory ability of medical large language models. The 33rd ACM International Conference on Information and Knowledge Management (CIKM). 2024.
- Wang, Y., Wang, Y., Fu, Z., Li, X., Wang, W., **Ye, Y.**, ... & Tang, R. Llm4msr: An llm-enhanced paradigm for multi-scenario recommendation. The 33rd ACM International Conference on Information and Knowledge Management (CIKM). 2024.
- Yu, R., Xu, X., **Ye, Y.**, Liu, Q., & Chen, E. Cognitive Evolutionary Search to Select Feature Interactions for Click-Through Rate Prediction. The 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD). 2023.
- Yu, R., **Ye, Y.**, Liu, Q., Wang, Z., Yang, C., Hu, Y., & Chen, E. Xcrossnet: Feature structure-oriented learning for click-through rate prediction. Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD). 2021.
- Yu, R., Liu, Q., **Ye, Y.**, Cheng, M., Chen, E., & Ma, J. Collaborative list-and-pairwise filtering from implicit feedback. IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE). 2021.
- Liu, Q., Wu, H., **Ye, Y.**, Zhao, H., Liu, C., & Du, D. Patent Litigation Prediction: A Convolutional Tensor Factorization Approach. The 27th International Joint Conference on Artificial Intelligence (IJCAI), 2018.
- Lian, D., **Ye, Y.**, Zhu, W., Liu, Q., Xie, X., & Xiong, H. Mutual reinforcement of academic performance prediction and library book recommendation. The 16th International Conference on Data Mining (ICDM). 2016.

PROFESSIONAL ACTIVITIES

Talks:

- Presentation of the paper "PAIL: Performance based Adversarial Imitation Learning Engine for Carbon Neutral Optimization" in the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Barcelona, Spain, 2024.
- Presentation of the paper "Cognitive Evolutionary Search to Select Feature Interactions for Click-Through RatePrediction" in the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Long Beach, CA, USA, 2023.
- Presentation of the paper "MANE: Organizational Network Embedding with Multiplex Attentive Neural Networks." in the 4th International Workshop on Talent and Management Computing, Long Beach, CA, USA, 2023.
- Presentation of the paper "Identifying high potential talent: A neural network based dynamic social profiling approach" in the IEEE 19th International Conference on Data Mining, Beijing, China, 2019.

Teaching Experience:

- Lecturer of undergraduate courses, Management Science and Information Systems Department, Rutgers University Production and Operation Management (Fall 2024), Management Information System (Spring 2025).

Conference/Journal Reviewer: ICLR, NIPS, KDD, AAAI, IJCAI, ICDM, SDM, CIKM, ICASSP, TKDE, TKDD, TBD, DMLR.

Award: KDD CUP 2019 Regular ML Track PaddlePaddle Special Award, "Long-term Joint Scheduling for Urban Traffic".

SKILLS

Language: Python, C, Java, MATLAB, SQL, Shell, R, HTML, JavaScript
Tools: PyTorch, Tensorflow, Hadoop, Spark MLlib, Sklearn, Pandas, Numpy, Matplotlib, Seaborn, Hugging Face