Yuhan Yang

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EDUCATION

Major in Information Management, Sichuan University, Sichuan, China Sep.2022—Present

- GPA: 3.92/4.0 (91.58/100); Ranking: **1/54**
- Outstanding Student Award (Top 3%)
- National First Prize (Top 3%) — National Mathematics Competition for College Students
- Core Courses: C Programming (98) / Probability Statistics (98) / Mathematical Modeling and Experiment (97) / Information Analysis (95) / Statistics (94) / Computer Network (93) / Calculus (92) / Linear Algebra (92)

Department of Computer Science and Engineering, University of Michigan, United States Sep.2025—Present

- Research intern advised by Prof. Alexander Rodríguez
- Conduct the project: LLM-Driven Framework for Comparative Simulation and Explainable Meta-Analysis

Department of Computer Science, University of Virginia, United States Feb.2025—Aug.2025

- Research intern advised by Prof. Jundong Li
- Submitted a paper to ICLR 2026 as the first author

Department of Computer Science, University of Oxford, United Kingdom Jul.2023—Aug.2023

- Full-time summer research intern, supervised by Professor Bernardo Cuenca Grau

Research Interests: Machine Learning, Data Mining, Large Language Models, Graph Learning, Natural Language Processing

PUBLICATION

- **Yuhan Yang**, Xingbo Fu, Jundong Li.
  Adaptive Dual Prompting: Hierarchical Debiasing for Fairness-aware Graph Neural Networks
  Under review at the The Fourteenth International Conference on Learning Representations (ICLR 2026)
- **Yuhan Yang**, Jiahui Wang, Xiaojuan Zhang.
  Hybrid Topology Representation and SAO-enhanced Semantics for Time-aware Link Prediction in Co-word Network
  Under review at Scientometrics. (SCI Q1)
- Haiqin Li, **Yuhan Yang**, Jun Zeng, Min Gao, and Junhao Wen.
  Multi-Scale Transformers with Dual Attention and Adaptive Masking for Sequential Recommendation
  Information Processing & Management (SCI Q1, IF=7.4) , Full Paper
- Peixuan Sun, Zhida Zheng, **Yuhan Yang**, Wei Zhou, and Junhao Wen.
  Dual-Perspective Modeling: Interest Trend-Detection and Diversity-Aware for Multi-behavior Sequential Recommendation
  In Proceedings of the 21st International Conference on Intelligent Computing (ICIC 2025)

RESEARCH EXPERIENCES

Adaptive Dual Prompting: Hierarchical Debiasing for Fairness-aware Graph Neural Networks Feb.2025—Sep.2025

Advisor: Jundong Li, Associate Professor, Department of Computer Science, University of Virginia

- Proposed an fairness-aware Adaptive Dual Prompting framework (ADPrompt) that adapts pre-trained GNNs to downstream tasks while mitigating bias from both node attribute and graph structures.
- Designed a dual-prompt mechanism: (1) Adaptive Feature Rectification to learn attribute prompts and suppress sensitive information; (2) Adaptive Message Calibration to generate structure prompts for dynamic, layer-wise calibration of information flow.
- Conducted experiments on four datasets with four pre-training strategies, surpassing seven baselines by 3% in fairness performance. Performed ablation and fairness evaluations to verify method effectiveness.
- Proposed a sparse learnable prompt method that mitigates bias and improves efficiency when adapting pre-trained GNNs, advancing fairness-aware graph learning; submitted to **ICLR 2026 as the first author**.

LLM-Driven Multi-Simulator Framework for Comparative Analysis and Explanation

Advisor: Prof.Alexander Rodríguez, University of Michigan Sep.2025—Present

- Proposed an LLM-driven Multi-Simulator Framework to address unexplained discrepancies among simulators and the high cost of manual interpretation, enhancing transparency and trust in LLM-based reasoning.
- The framework connects simulator generation, cross-model normalization, and LLM-based meta-analysis to automate comparative reasoning and explanation across heterogeneous models.
- Conducted preliminary experiments in COVID-19 transmission modeling, demonstrating improved interpretability and efficiency in multi-model analysis.

Hybrid Topology Representation and SAO-enhanced Semantics for Time-aware Link Prediction

Advisor: Prof. Xiaojuan Zhang, Sichuan University Sep.2024—Jul.2025

- Proposed a novel framework (HTST) for link prediction in co-word networks, aiming to uncover emerging thematic associations, by modeling the evolving structure of scientific knowledge and emantic relevance between keywords.
- Designed three modules to extract features for link prediction: (1) Hybrid topological representation combining GAT and Node2Vec to represent comprehensive topological information; (2) Fine-grained semantic modeling cpatures syntactic structure and contextual information; (3) Applied a time decay model for dynamic modeling.
- Independently conducted data collection, preprocessing, and model training under guidance. Executed extensive experiments on four datasets, including baseline comparisons and model analysis, validating model's effectiveness.
- Proposed HTST, a novel hybrid topology–semantic framework for time-aware link prediction in co-word networks, enhancing the detection of emerging research trends; **submitted a paper to Scientometrics as the first author**.

Multi-Scale Transformers with Dual Attention and Adaptive Masking for Sequential Recommendation

Advisor: Prof. Junhao Wen and Prof. Min Gao, School of Software Engineering, Chongqing University Dec.2024—Jul.2025

- Proposed a multi-scale Transformer architecture (ScaleRec) for sequential recommendation that explicitly models dynamic user behaviors across various temporal scales to enhance prediction accuracy.
- Developed a multi-scale sequence model with: (1) a patch-based segmentation framework to capture diverse interaction patterns; (2) a dual-attention mechanism using Gaussian intra-patch attention and context-aware inter-patch aggregation for short- and long-term preference modeling.
- Conducted experiments on six datasets against eight baselines, with ablation studies and parameter analysis validating each component's effectiveness and robustness; **published the work in Information Processing & Management.**

Dual-Perspective Modeling:Interest trend-Detection and Diversity-Aware for Multi-Behavior Sequential Recommendation

Advisor: Prof.Junhao Wen and Prof.Wei Zhou, School of Software Engineering, Chongqing University Oct.2024—May.2025

- Developed TDBSR, a novel framework for multi-behavior sequential recommendation, to address the challenge of modeling both user interest trends and diversity.
- Designed a dual-perspective framework: (1) A mask generation module decouples data; (2) The HITM and ABIP MLP-based modules extract user interest tendencies; (3) MLP and max-pooling layers capture user interest diversity.
- Helped implement the TDBSR model and conducted extensive experiments on public datasets, outperforming eight baselines on key metrics, validating its effectiveness; **this work has been accepted for publication in ICIC 2025.**

SERVICES

Reviewer: CIKM 2025, AAAI 2026

AWARDS

- National First Prize (Top 3% Nationally) | The National Mathematics Competition for College Students | Individual
- Outstanding Student Award (Top 3%) | Sichuan University | Individual Award
- Provincial Outstanding Project (Top 5%) | National College Student Innovation Competition | Key Team Member
- Excellent Creative Paper (Top 3%) | Shanghai Library Open Data Competition | Key Team Member

SKILLS

- Programming: proficient in Python, Java, C/C++, SQL and Matlab
- Core skills: Data analysis and Modeling; Database Construction; Full-stack development for websites and apps
- Software/Tools: LaTeX; Microsoft Office; Adobe Photoshop; Photography