Yiming Lu

Contact Information

400 Dowman Drive, W302, Atlanta, GA 30322 E-mail: yiming.lu@emory.edu
GitHub: github.com/BUILDERlym Phone: 404-703-9392 Web: BUILDERlym.github.io

Research Interests

large language models, natural language processing, reasoning, planning, decision making, deep learning, reinforcement learning, artificial intelligence

Education

Emory University, Atlanta, GA — August 2023–Present
Ph.D., Computer Science. GPA: 4.0/4.0
- Advisor: Dr. Fei Liu

Tsinghua University, Beijing, China — August 2019–July 2023
B.E., Automation. GPA: 3.5/4.0

Publications

- **STRUX: An LLM for Decision-Making with Structured Explanations**
  Yiming Lu, Yebowen Hu, Hassan Foroosh, Wei Jin, Fei Liu *NAACL 2025*
  https://arxiv.org/pdf/2410.12583

  Countless decisions shape our daily lives, and it is crucial to understand the how and why behind these choices. In this work, I introduced a new framework, STRUX, which enhances LLM decision-making by providing structured explanations. These include favorable and adverse facts related to the decision, along with their respective strengths. STRUX begins by distilling lengthy information into a concise table of key facts. It then employs a series of self-reflection steps to determine which of these facts are pivotal, categorizing them as either favorable or adverse in relation to a specific decision. Lastly, we fine-tune an LLM to identify and prioritize these key facts to optimize decision-making. STRUX has been evaluated on the challenging task of forecasting stock investment decisions based on earnings call transcripts and demonstrated superior performance against strong baselines. It enhances decision transparency by allowing users to understand the impact of different factors, representing a meaningful step towards practical decision-making with LLMs.

- **DeFine: Enhancing LLM Decision-Making with Factor Profiles and Analogical Reasoning**
  Yebowen Hu, Xiaoyang Wang, Wenlin Yao, **Yiming Lu**, Daoan Zhang, Hassan Foroosh, Dong Yu, Fei Liu https://arxiv.org/pdf/2410.01772 *Under Review, 2025*

Technical Skills

Programming: Python, C, C++, LaTeX, MATLAB
Frameworks: PyTorch, LLaMA Factory, TensorFlow, HuggingFace, OpenCV
Libraries: scikit-learn, NumPy, Pandas, spaCy

Research Experience

Instant NGP and Neural Scene Reconstruction — January 2022–May 2022
Tsinghua BBNC Laboratory Project
- Developed a multi-view data collection system using drone swarm for large-scale scene capture
- Implemented CUDA-Python interface for efficient neural graphics primitives computation
- Optimized NeRF rendering pipeline with hash-based encoding, achieving real-time performance

High-speed Compressive Imaging System — January 2022
Tsinghua BBNC Laboratory Project
- Designed HCA-SCI system integrating dynamic LCoS and high-resolution lithography mask
- Developed cascaded denoising algorithm for PnP-based image reconstruction
- Achieved 4.6G voxels/s throughput with 10-megapixel resolution for high-speed imaging

Super-resolution Network Development — April 2021–July 2021
Student Research Project
- Implemented and evaluated state-of-the-art super-resolution architectures from top conferences
- Conducted systematic literature review on deep learning approaches for video enhancement

Selected Courses

Natural Language Processing	Machine Learning	Operations Research
Information Retrieval	Pattern Recognition	Foundation of AI
Digital Video Applications	Digital Image Processing	Computer Programming