

# Yiming Lu

CONTACT INFORMATION	400 Dowman Drive, W302, Atlanta, GA 30322 GitHub: <a href="https://github.com/BUILDERlym">github.com/BUILDERlym</a> Phone: 404-703-9392		E-mail: <a href="mailto:yiming.lu@emory.edu">yiming.lu@emory.edu</a> Web: <a href="https://BUILDERlym.github.io">BUILDERlym.github.io</a>
RESEARCH INTERESTS	large language model, natural language processing, reasoning, decision making, deep learning, reinforcement learning, artificial intelligence		
EDUCATION	<b>Emory University</b> , Atlanta, GA Ph.D., Computer Science. GPA: 4.0/4.0 August 2023–Present <ul style="list-style-type: none"><li>• Advisor: Dr. Fei Liu</li></ul> <b>Tsinghua University</b> , Beijing, China B.E., Automation. GPA: 3.5/4.0 August 2019–July 2023		
PUBLICATIONS	<b>STRUX: An LLM for Decision-Making with Structured Explanations</b> <b>Yiming Lu</b> , Yebowen Hu, Hassan Foroosh, Wei Jin, Fei Liu <i>NAACL 2025</i> <a href="https://arxiv.org/pdf/2410.12583">https://arxiv.org/pdf/2410.12583</a> Countless decisions shape our daily lives, and it is crucial to understand the how and why behind these choices. In this project, I introduced a new LLM decision-making framework called 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.		
TECHNICAL SKILLS	<b>Programming:</b> Python, C, C++, LaTeX, MATLAB <b>Frameworks:</b> PyTorch, LLaMA Factory, TensorFlow, HuggingFace, OpenCV <b>Libraries:</b> scikit-learn, NumPy, Pandas, spaCy		
RESEARCH EXPERIENCE	<b>Instant NGP and Neural Scene Reconstruction</b> <i>Tsinghua BBNC Laboratory Project</i> January 2022–May 2022 <ul style="list-style-type: none"><li>• Developed a multi-view data collection system using drone swarm for large-scale scene capture</li><li>• Implemented CUDA-Python interface for efficient neural graphics primitives computation</li><li>• Optimized NeRF rendering pipeline with hash-based encoding, achieving real-time performance</li></ul> <b>High-speed Compressive Imaging System</b> <i>Tsinghua BBNC Laboratory Project</i> January 2022 <ul style="list-style-type: none"><li>• Designed HCA-SCI system integrating dynamic LCoS and high-resolution lithography mask</li><li>• Developed cascaded denoising algorithm for PnP-based image reconstruction</li><li>• Achieved 4.6G voxels/s throughput with 10-megapixel resolution for high-speed imaging</li></ul> <b>Super-resolution Network Development</b> <i>Student Research Project</i> April 2021–July 2021 <ul style="list-style-type: none"><li>• Implemented and evaluated state-of-the-art super-resolution architectures from top conferences</li><li>• Conducted systematic literature review on deep learning approaches for video enhancement</li></ul>		
SELECTED COURSES	Natural Language Processing Information Retrieval Foundation of AI	Machine Learning Pattern Recognition Digital Image Processing	Operations Research Digital Video Applications Computer Programming