Artificial Intelligence Initiative (Aii)

https://ai.ucf.edu/

Invited Speaker

Dr. Yue Bai, Northeastern University



"Sparsity for Multi-Modal Learning: Toward Efficiency and Capability"

Monday, June 23, 2025 • 11:00AM • R1 101 • Zoom

Abstract:
Modern intelligence systems are increasingly designed for multiple modalities to solve real-world tasks. On the one hand, these multi-modal models are expected to deliver strong performance across diverse and complex inputs for practice. On the other hand, as the model scale keeps growing, the efficiency becomes a significant challenge for both training and inference. This creates a critical tension of how we can build large-scale models with competitive performance while maintaining model efficiency under practical multi-modal scenarios.

In this talk, I will introduce how model sparsity can serve as a powerful tool to address these challenges. Focusing on multi-modal learning, I will present a series of approaches that leverage model sparsity to improve either or both model efficiency and capability. They span a range of topics, including vision-language retrieval, large language models (LLMs), and multi-modal large language models (MLLMs), illustrating how sparsity can support effective and efficient AI systems in multi-modal settings.

Bio:
Yue Bai received a B.Sc. degree in Mathematics from Donghua University, Shanghai, China, in 2017, and an M.Eng. degree in Data Analytics Engineering from Northeastern University, Boston, MA, USA, in 2019. He is currently pursuing a Ph.D. in the Department of Electrical and Computer Engineering at Northeastern University, Boston, MA, USA. His research interests primarily focus on multi-modal learning and sparse network training, with applications in generative AI and model efficiency. He has published papers in and served as a reviewer for top-tier conferences and journals, including NeurIPS, ICLR, CVPR, ECCV, EMNLP, ICDM, SDM, WWW, MM, AAAI, TIP, TKDE, etc.