Expediting Next-Generation AI for Health via KG and LLM Co-Learning

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12:00 – 1:00 PM
BMI Classroom 4004
Woodruff Memorial Research Building

or

Join us on Zoom link:
https://zoom.us/j/92668805515

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Abstract: Large language models (LLM) have brought disruptive progress to information technology from accessing data to performing analytical tasks. While demonstrating unprecedented capabilities, LLMs have been found unreliable in tasks requiring factual knowledge and rigorous reasoning, posing critical challenges in domains such as healthcare. Knowledge graphs (KG) have been widely used for explicitly organizing and indexing biomedical knowledge, but the quality and coverage of KG are hard to scale up given the notoriously complex and noisy healthcare data with multiple modalities from multiple institutions. Existing approaches show promises in combining LLMs and KGs to enhance each other, but they do not study the techniques in real healthcare contexts and scenarios. In this talk, I will introduce our research vision and agenda towards KG-LLM co-learning for healthcare, followed by successful examples from our recent exploration on LLM-aided KG construction, KG-guided LLM enhancement, and federated multi-agent systems. I will conclude the talk with discussions on future directions that can benefit from further collaborations with researchers interested in data mining or biomedical informatics in general.

Biography: Carl Yang is an Assistant Professor of Computer Science at Emory University, jointly appointed in the Rollins School of Public Health and Nell Hodgson Woodruff School of Nursing. He received his Ph.D. in Computer Science at University of Illinois, Urbana-Champaign in 2020, and B.Eng. in Computer Science and Engineering at Zhejiang University in 2014. His research interests span data mining, deep learning, multimodality foundation models and trustworthy AI, with applications in graph analytics, neuroscience, biomedicine and healthcare. Carl's research results have led to 200+ peer-reviewed publications in top venues across AI/ML and medicine/healthcare. He serves as the organizer of KDD Health Day and the chair of AMIA KDDM Working Group. He is also a recipient of the SIGKDD Rising Star Award in 2025, NSF CAREER Award in 2025, NIH K25 (Career) Award in 2023, and multiple Best Paper Awards such as of MedInfo 2025, KDD Health Day 2022, ML4H 2022, and ICDM 2020.