Title: Interdisciplinary Research in the Era of Generative AI

Abstract:
This talk introduces interdisciplinary research projects happening in the Data Mining lab at Notre Dame. Collaborators in fields such as material science, education, security, and mental health are looking for computational methods that discover knowledge to facilitate their research. In the data mining field, knowledge discovery is mining useful and/or surprising patterns from big messy data. Now people are amazed by the quality of small output from big models, as we are running into the era of Generative AI. We find that graph and text generative models are still facing issues around data and knowledge. I'll present graph data augmentation methods for polymer material discovery, knowledge augmentation methods for question answering and reasoning, and our on-going effort in DHH education, software & network security, and suicide prevention, making generative AI impactful in the specialized areas.

Bio:
Meng Jiang is an Associate Professor in the Department of Computer Science and Engineering at the University of Notre Dame. He received B.E. and PhD from Tsinghua University. He was a visiting scholar at CMU and a postdoc at UIUC. He is interested in data mining, machine learning, and natural language processing. His data science research focuses on graph and text data for applications such as material discovery, question answering, user modeling, and mental health. He received the CAREER Award from the National Science Foundation.