Title: Interdisciplinary Research in the Era of Generative AI

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