Title: Data Augmentation for Graph Regression

Abstract:
Graph Regression is widely seen in material discovery as to predict numerical properties of molecules and polymers. In graph regression research, training sets usually have only 500 examples, which is too limited. The label distribution is also imbalanced. Though a great number of unlabeled graphs exist, they were collected from various domains and thus would be hard to make a positive impact on specific label prediction. In machine learning, data augmentation is known as the techniques that increase the amount of data by adding slightly modified copies of existing data or newly created synthetic data from existing data. In this talk, I will introduce three graph data augmentation techniques, designed for supervised learning, imbalanced learning, and transfer learning on graph regression tasks. The results have been accepted to KDD conferences in recent years.

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 PhD 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 question answering, query understanding, user modeling, material discovery, online education, and mental healthcare. He received the CAREER Award from the National Science Foundation. He has delivered 14 conference tutorials and organized 7 workshops. He is a Senior Member of ACM and IEEE.