Interdisciplinary Data Sciences Consortium

* IDSC *

BIG DATA

March 23, 2018, 2:00-3:00pm
Location: ENB 313

Presents
Dr. Xingquan Zhu

Department of Computer and Electrical Engineering and Computer Science
Florida Atlantic University

Homepage: http://www.cse.fau.edu/~xqzhu/index.html

Title: Feature Representation Learning for Complex Information Networks

Abstract: Information network mining often requires examination of node content and linkage relationships for analysis. Recently, network feature representation has emerged to represent each node in a vector format, embedding network structure, so off-the-shelf machine learning methods can be directly applied for analysis. In this talk, we will discuss several solutions to learn representation for complex information networks, using node structure, node content, and node labels. The first model, Tri-party network representation learning, is based on a new coupled deep natural language module, whose learning is enforced at three levels: (1) at the network structure level, it exploits inter-node relationship by maximizing the probability of observing surrounding nodes given a node in random walks; (2) at the node content level, it captures node-word correlation by maximizing the co-occurrence of word sequence given a node; and (3) at the node label level, it models label-word correspondence by maximizing the probability of word sequence given a class label. The tri-party information is jointly fed into the neural network model to mutually enhance each other to learn optimal representation for effective learning. Several other models will also be discussed to address network representation learning for rich node features, sparse, and heterogeneous complex information networks.

Biography: Dr. **Xingquan Zhu** is an Associate Professor in the Department of Computer and Electrical Engineering and Computer Science, Florida Atlantic University. His research interests include data mining, machine learning, bioinformatics, and computational advertising. Since 2010, he has published over 220 refereed journal and conference papers in these fields. Dr. Zhu is an associate editor of the ACM Transactions on Knowledge Discovery from Data (2017-date) and IEEE Transactions on Knowledge and Data Engineering (2008-2012, 2014-date). He is currently serving on the Editor Board of International Journal of Social Network Analysis and Mining SNAM (2010-date), Journal of Big Data (2013-date), and Network Modeling Analysis in Health Informatics and Bioinformatics Journal (2014-date). He is a TPC co-chair of the 14th International Conference on Advanced Data Mining and Applications (ADMA-2018), and a senior TPC member of ACM SIGKDD 2018 and IEEE ICDM 2018. He was a program committee co-chair for the 14th IEEE International Conference on Bioinformatics and BioEngineering (BIBE-2014), IEEE International Conference on Granular Computing (GRC-2013), 23rd IEEE International Conference on Tools with Artificial Intelligence (ICTAI-2011), and the 9th International Conference on Machine Learning and Applications (ICMLA-2010). He also served as a conference co-chair for ICMLA-2012.

IDSC Contact:
Dr. K. Ramachandran
University of South Florida 4202
E Fowler Ave, CMC317 Tampa,
FL 33620-5700
E-mail: ram@usf.edu
Telephone: (813)-974-1270
Fax: (813)-974-2700