Announcing the Final Examination of Neda Hajiakhoond Bidoki for the degree of Doctor of Philosophy

Time & Location: April 27, 2020 at 10:00 AM in Zoom meeting Virtual
Title: Stochastic Sampling and Machine Learning Techniques for Social Media State Production

Social media platforms are among the most widely used communication channels and have become an indispensable part of our everyday life, due to the speed and reduction in cost that these services provide to their users. Information spread through social media can be good for rapidly raising awareness of important issues such as environmental protection but also can be misused for malicious content spreading activities. In this dissertation, we tackle multiple problems associated with information propagation and modeling user activity in social media. We first address the task of forecasting the propagation of information on social coding platforms such as GitHub. This approach deals with repetitive behavior patterns that can be leveraged to predict trends in network evolution. Secondly, we use the recent methodological framework of the Simple Graph Convolutional Neural Network (SGC) to classify user polarization in Twitter networks. We evaluate the robustness of SGC prediction in a network having lost nodes and ties and illustrate how weak ties can be exploited in incomplete network datasets. The last part of the dissertation addresses a fundamental problem in social network analysis, burst prediction. Our proposed method employs a Long-Short-Term-Memory (LSTM) based model in order to capture the temporal dependencies and associations based upon activity information.

Major: Computer Science

Educational Career:
Bachelor’s of Computer Engineering, BS, 2010, Sharif University of Technology
Master's of Computer Engineering, MS, 2012, Amirkabir University of Technology
Master's of Computer Science, MS, 2019, University of Central Florida

Committee in Charge:
Gita Sukthankar, Chair, Computer Science
Alexander V. Mantzaris, Statistics & Data Science
Damla Turgut, Computer Science
Cliff C. Zou, Computer Science

Approved for distribution by Gita Sukthankar, Committee Chair, on April 13, 2020.

The public is welcome to attend.