
REBECCA JONES, Brigham Young University
Predicting Roles in Dynamic Social Networks

In social networks, role detection is the process of identifying people who have similar types of connections or certain importance in the network. For example, a social media network might have influencers who can influence a large number of people, authorities who are experts on their subjects, hubs who point to authorities, and loners, people who have very few connections. Using Non-Negative Matrix Factorization (NMF), we can identify and describe these roles in a network based off of structural properties of the network as well as attributes of the nodes. While NMF has been applied in various forms to dynamic social networks, little work has been done in making predictions about roles. In this talk, I'll discuss how NMF and machine learning techniques can be applied to dynamic social networks to make predictions about how roles change.