Network Analysis and Visualization using ORA

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Network analytics are widely used in many fields. Increasingly though, the networks of interest are high dimensional. For example, studies of organizations might look at the social network within the organization as well as the task assignment and knowledge network. Studies using Twitter frequently look at the mentions network at the same time as the hashtag network. ORA is a powerful network analysis and visualization tool. ORA supports the assessment of standard social network data, organizational network data, high-dimensional network data, meta-network data, geo-spatial network data, and dynamic network data. This tutorial will cover the basics of using ORA to support social network and high dimensional network analytics and visualization.

Description: A lecture and hands-on workshop in which attendees learn about network science and the ORA toolkit. Using ORA the attendees will learn how to import, export, visualize, and assess data. Attention will be focused simple and high dimensional networks, grouping technologies, key entity identification, and visualization. Participants will be presented with a thorough demonstration of software features used to create a sample network and analyze it. Participants will be able to use the free PC version of ORA from the CASOS website. Those with macs should have a PC emulator. Sample data sets will be available.

This session begins with an overview of ORA, and techniques for entering, visualizing, and analyzing social and meta-network (high dimensional) data. Special features for handling node attributes are presented. Key node identification, clustering, spatio-temporal analytics and visualization, twitter analytic, and semantic networks are then covered. Special unique features of ORA such as trail visualization, fuzzy grouping algorithms, multi-mode network assessment, two mode metrics, JSON importers for Twitter and BlogTracker, and CSV importers will be addressed.

Who Should Attend? Those who are interested in assessing social media data, networks derived from texts, coordinate health care networks, groups, organizations or communities using sets of interconnected multi-mode or multi-link networks and/or sets of networks across time and/or space and who want to learn how to use existing software tools and techniques to analyze such meta-network data, should attend this full-day workshop. The material and its delivery is suitable for researchers and practitioners, alike. This is designed to be a non-technical workshop, however, by its very nature, the material will involve some mathematics, although this will be minimized as the delivery is driven towards forming an understanding of the concepts, not mastery of the details.

Topics Include:

- Social Network Analysis
- Comparing and contrasting networks
- Multi-mode, multi-link, high dimensional network metrics
- Networks with positive and negative ties
- Weighted networks
- Analyzing Twitter data
- ORA software
    - Data management, Visualization, General, temporal and geo-spatial, metrics, Grouping algorithms, Reporting

Computer Equipment:

The free version of ORA is only available for the windows operating system. The student version of ORA can be downloaded from here: http://www.casos.cs.cmu.edu/projects/ora/ . The professional version of ORA and the mac version are available here: http://netanomics.com/ora-pro/ . Participants should bring their own laptops to workshop. If you have a mac version, you will need to have a PC emulator. The software will be screen-projected to the group as a live walk-through demonstration. Participants will be provided with data through a web link. All participants will also be given a SBP-BRiMS 2017 discount on purchasing the professional version of ORA which is available for both MA's and PCs.

Maximum Number of Attendees: Unlimited