

An Introduction to Network Analysis

Stan Wasserman
Ann McCranie

Indiana University

Abstract:

Network analysis focuses on relationships between interacting entities. It is used widely in the social and behavioral sciences, as well as in political science, economics, organizational science, and industrial engineering. The network perspective, which will be taught in this workshop, has been developed over the last sixty years by researchers in psychology, sociology, and anthropology, as well as statistics and mathematics.

This 1 1/2 day workshop will present an introduction to various concepts, methods, and applications of network analysis drawn from the social, behavioral, and organizational sciences. The primary focus of these methods is the analysis of relational data measured on groups of actors. Topics to be discussed include an introduction to graph theory and the use of directed graphs to study structural theories of actor interrelations and structural and locational properties of actors. A general introduction to common measures of actors and network structures will be provided, in addition to new developments in statistical analysis using models such as p_1 , p^* , and their relatives.

The short course is a free service offered to conference registrants. No additional fees are required beyond conference registration to attend the short course. However, a text is required and will be offered at a nominal \$25 cost.

Schedule:

Day One, Monday

0830-1000	Lecture (Introduction, notation, graph theory)
1000-1015	Break
1015-1100	Lecture (Centrality)
1100-1200	Lunch
1200-1330	Lab Session (Using UCINET, Pajek, drawing graphs)
1330-1515	Lecture (Cohesive subgroups, reciprocity and transitivity)
1515-1530	Break
1530-1700	Lab Session (Specific network and actor statistics)

Day Two, Tuesday

0830-1045	Lecture (Statistical Modeling, p^*)
1045-1100	Break
1100-1200	Lecture (Statistical Modeling continued)

Requirements:

Everyone should have a copy of Wasserman and Faust (Social Network Analysis, Cambridge University Press, 1994) , and a laptop computer with two packages installed:

1. UCINET (which comes bundled with Pajek and Netdraw). This can be available by a free 30-day trial download at <http://www.analytictech.com/ucinet/ucinet.htm>

2. pnet for Single Networks

<http://www.sna.unimelb.edu.au/pnet/pnet.html#download>

(Note that this requires a Windows environment, Java Runtime and a C++ library, all of which is detailed on the site).

We will help you with installation and any other related issues during breaks on the first day.