

Social Network Analysis: introduction with examples

§ Name of instructor

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§ Short description

Network analysis, originating from graph theory, represents one of the fastest-growing areas of quantitative data analysis. It encompasses various techniques, ranging from descriptive to inferential, and is well-supported by visualization. With the rapid development of computers, the discipline has evolved, giving rise to several software packages for network analysis, including those implemented in R.

Additionally, the course will introduce the Pajek software package. Network analytic topic is not only interesting from a statistical perspective but also finds applications in several areas such as economics, management, computational biology, neuroscience, statistical physics and others.

§ Schedule

- Networks everywhere
- Types of networks
- Centrality measures
- Network visualization
- Network cohesion and modeling

§ Introductory background:

Kolaczyk E.D., Csardi, G. (2014). Statistical Analysis of Network Data with R. Springer.

De Nooy W., Mrvar A., Batagelj V. (2018). Exploratory Social Network analysis with Pajek. 3rd Edition. Cambridge.

§ Facilities Required

- Software: R and Pajek, both open source
- Course Material. All course materials, including the data and R scripts for the examples, will be made available for course participants.