



Department of Decision Sciences

Statistics Seminar

Bayesian modelling of heterogenous social networks

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12:30pm Room 3-E4-SR03 Via Röntgen 1 Milano

Abstract

Recent research in statistical social network analysis has demonstrated the advantages and effectiveness of probabilistic approaches to network data. In fact, Bayesian methods are becoming increasingly popular as techniques for modelling relational data. Exponential random graph models (ERGMs) are a class of widely used exponential family models for social network data. The connectivity structure of an observed network is modelled by the relative prevalence of network statistics which are regarded as random variables. Computing the doubly intractable posterior distribution of ERGMs is a very challenging problem. We present an efficient computational methods for estimating the Bayesian ERGMs as well as a new hierarchical longitudinal ERGMs framework that allows for simultaneous inference of initial conditions and time heterogeneity in dynamic networks.