

Department of Decision Sciences

Statistics Seminar

Mixed-Membership of Experts Stochastic Blockmodel

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

Abstract

Social network analysis is the study of how links between a set of actors are formed. Typically, it is believed that links are formed in a structured manner, which may be due to, for example, political or material incentives, and which often may not be directly observable. The stochastic blockmodel represents this structure using latent groups which exhibit different connective properties, so that conditional on the group membership of two actors, the probability of a link being formed between them is represented by a connectivity matrix. The mixed membership stochastic blockmodel (MMSBM) extends this model to allow actors membership to different groups, depending on the interaction in question, providing further flexibility.

Attribute information can also play an important role in explaining network formation. Network models which do not explicitly incorporate covariate information require the analyst to compare fitted network models to additional attributes in a post-hoc manner. We introduce the mixed membership of experts stochastic blockmodel, an extension to the MMSB which incorporates covariate actor information into the existing model. The method is illustrated with application to the Lazega Lawyers friendship dataset. Model and variable selection methods are also discussed.

The seminar is based on joint work with Arthur White.