SEMINARIO DI FINANZA QUANTITATIVA

Venerdì 11 marzo 2016
ore 10:30

Scuola Normale Superiore
Pisa
Aula Bianchi Scienze

Christian Brownlees

(Universitat Pompeu Fabra, Barcelona, Spain)

terrà un seminario dal titolo:

"Community Detection in Partial Correlation Networks"

Abstract:
In this work we propose a community detection algorithm for partial correlation networks. We assume that the variables in the network are partitioned into communities. The presence of nonzero partial correlation between two variables is determined by a Bernoulli trial whose probability depends on whether the variables belong to the same community or not. The community partition is assumed to be unobserved and the goal is to recover it from a sample of observations. To tackle this problem we introduce a community detection algorithm called Blockbuster. The algorithm detects communities by applying k-means clustering to the eigenvectors corresponding to the largest eigenvalues of the sample covariance matrix. We study the properties of the procedure and show that Blockbuster consistently detects communities when the network dimension and the sample size are large. The methodology is used to study real activity clustering in the United States.

Tutti gli interessati sono invitati a partecipare.

Classe di Scienze Matematiche e Naturali