

Avviso

Si avvisa che la Prof.ssa Silvana Stefani terrà il 27 giugno 2013 alle ore 9 presso l'aula 6b un seminario dal titolo:

Multiple networks analysis: a financial application

Abstract

Companies in a financial market are connected in many ways, e.g. corporate control can be determined by the board of directors interlocking structure and the shareholding composition. Other connections may include a common industrial sector or a similar behavior of the price dynamics. A multiple networks structure arises that can be conveniently analyzed via tensor analysis, where all links are treated simultaneously. The CP (CANDECOMP/PARAFAC) tensor decomposition provides a possible extension of the matrix SVD (Singular Value Decomposition), applied to a single network. When dealing with multiple networks, instead, in the presence of k types of relationship between n actors, a generalization of the HITS (Hyperlink-Induced Topic Search) method using tensor approach can be successfully applied. The method, called TOPHITS (Topical HITS), and based on the CP decomposition, allows to analyze three – mode data, resulting in both hubs, authorities and network type scores. We apply the TOPHITS decomposition to a segment of the Italian stock market, by considering multiple linkages (return correlations, shareholding and board of directors, industrial sector). Moreover, we illustrate some theoretical issues that are yet to be analyzed.

References

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- [3] T.G. Kolda, B. Bader (2009). Tensor Decompositions and Applications SIAM REVIEW, Vol. 51, No. 3, pp. 455–500.
- [4] M. D’Errico, S. Stefani, A. Torriero (2013). Informal ties in organizations: a case study. Quality and Quantity 1-15.

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