



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II



DIPARTIMENTO DI
INGEGNERIA
INDUSTRIALE

Jacopo Di Iorio

Postdoctoral Eberly Research Fellow
Department of Statistics, Pennsylvania State University

A spectral co-clustering interpretation of economic complexity

Tuesday, September 13th, 2022, 16:30-17:30,
University of Naples Federico II,
Department of Industrial Engineering,
Piazzale Tecchio 80, Naples
2nd floor - AULA A

Abstract The Economic Complexity Index (ECI) and the Product Complexity Index (PCI), firstly introduced in 2009 in the seminal paper by Hidalgo and Hausman, have aroused more and more interest by economic researchers due to their ability to summarize countries complex interactions and their economic activities. However, many dynamics behind those indices are not well known or are limited. For these reasons, recently, different interpretations of the indices based on statistics have been proposed. In this talk, we propose a new interpretation of the ECI based on spectral co-clustering and embedding gaussian mixture models clustering. This new perspective can improve the comprehension of the specialization dynamics of each countries in two ways. Embedding a co-clustering technique offers the possibility to explicit the connection between countries and products, by identifying co-clusters, i.e., interrelated clusters of countries and products. The use of gaussian mixture models clustering returns the probabilities of belonging to a co-cluster, allowing us to detect common specialization patterns and the evolution of product-country co-clusters by observing these probabilities over time.



Jacopo Di Iorio received his Ph.D. in “Mathematical Models and Methods in Engineering” from Politecnico di Milano. He spent one year as postdoctoral research fellow at Sant’Anna School of Pisa, precisely in the Institute of Economics and in EMbeDs (Economics and Management in the era of Data Science). Now he is a postdoctoral Eberly Research Fellow in the department of Statistics of the Pennsylvania State University. Jacopo is currently working in the domain of statistical learning and complex data, specifically functional data analysis, clustering and biclustering techniques.

Young-Fstat is the group of the young statisticians of the University of Naples Federico II.

It aims to create opportunities for meeting, sharing and exchanging ideas, research, information and experiences that can allow young Federician statisticians to bind us in a cohesive community. For further information, contact us at youngf2stat@gmail.com!



Contacts:

Dr. Fabio Centofanti, fabio.centofanti@unina.it