INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO

Departamento Académico de Estadística
Río Hondo # 1, Col. Progreso Tizapán,
Ciudad de México, C.P. 01080, México

Seminario Aleatorio
Sesión 379

Modelling Populations of Networks

Simón Lunagómez
Department of Mathematics and Statistics
Lancaster University

Abstract

This talk introduces a new class of models for multiple networks. The core idea is to parameterize a distribution on labeled graphs in terms of a Fréchet mean graph (which depends on a user-specified choice of metric or graph distance) and a parameter that controls the concentration of this distribution about its mean. Entropy is the natural parameter for such control, varying from a point mass concentrated on the Fréchet mean itself to a uniform distribution over all graphs on a given vertex set. We provide a hierarchical Bayesian approach for exploiting this construction, along with straightforward strategies for sampling from the resultant posterior distribution. We show the efficacy of our approach via simulation studies and two multiple-network data analysis examples: one drawn from systems biology and the other from neuroscience. We conclude by showing two extensions of these ideas: the use of mixtures for multimodal data and a model for networks built from sequences of interactions.

Artículo publicado: https://www.tandfonline.com/doi/full/10.1080/01621459.2020.1763803

Por otra parte pueden revisar su Job Market paper en https://arxiv.org/pdf/1909.00472.pdf

Viernes 19 de noviembre de 2021, 13:00 hora de CDMX

https://itam.zoom.us/j/91239961751?pwd=VDNadzZNQjJ1OW5kRDBROWhUTEZMZz09
ID de reunión: 912 3996 1751
Código de acceso: 602016

El Seminario Aleatorio del Departamento de Estadística del ITAM está destinado tanto a profesores como a estudiantes, por lo que se agradece a los profesores que colaboren invitando a sus alumnos a estas sesiones.