SFASA
SAN FRANCISCO BAY AREA CHAPTER OF
THE AMERICAN STATISTICAL ASSOCIATION

San Francisco Bay Area Chapter of American Statistical Association (SFASA)
Statistical Seminar: Analyzing cognitive social structures

Abel Rodriguez - University of California, Santa Cruz

Time: 4:30 – 5:30pm, Wednesday, February 5th, 2020

Location: MacQuarrie Hall (MH) 320
San Jose State University

Food: 4:00-4:30pm social networking with light refreshment in MH 331B

Abstract

Cognitive social structures (CSSs) are a type of social network data that appear often in psychology, sociology and industrial organization applications. Cognitive social structures involve a collection of networks, each one of them reflecting the perceptions of an individual about the interactions among all members of the community. This makes cognitive social structures richer than other forms of social networks that only reflect the subject perception about his direct links but not those about the links about third parties, or are collected from the perspective of a single, "objective" observer.

Traditionally, cognitive social structures have been analyzed by either collapsing the multiple networks into some sort of "consensus" network, or by analyzing different "slices" independently. In this talk we discuss two classes of models used to generate insights from CSS data. In the first part of the talk, we use a hierarchical embedding of the networks into a continuous latent space along with carefully constructed zero-inflated priors to explore the perceptual agreement between individuals and the group consensus. In the second part of the talk we discuss a novel class of hierarchical blockmodels that uses Chinese Restaurant Process priors and fragmentation-coagulation processes to identify conserved motifs that are preserved across all observers. This is joint work with Juan Sosa (Universidad del Externado, Colombia) and Perla Reyes (Kansas State University).

About the Speaker:

Abel Rodriguez is Professor of Statistics and Associate Director of the Center for Data, Discovery and Decisions (D3) at the University of California Santa Cruz (UCSC). He also serves as co-PI for UCSC's NSF-TRIPODS Center for Transdisciplinary Research in Data Science. Dr. Rodriguez joined UCSC in 2007 after completing a Ph.D. in Statistics and Decision Sciences and an M.A. in Economics at Duke University. Starting next September, he will be joining the Department of Statistics at University of Washington, where he will serve as the next department Chair. His research interest focuses on the theory and application of Bayesian statistical methods, specially in the social and biological sciences.