THE UNIVERSITY OF GEORGIA
DEPARTMENT OF STATISTICS

Colloquium Series

Thursday, November 10, 2022
4:00 PM, Room 204, Caldwell Building

Dr. Xinyi Li

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Clemson University

Functional Individualized Treatment Regimes with Imaging Features

Precision medicine seeks to discover an optimal personalized treatment plan and thereby provide informed and principled decision support, based on the characteristics of individual patients. With recent advancements in medical imaging, it is crucial to incorporate patient-specific imaging features in the study of individualized treatment regimes. We propose a novel, data-driven method to construct interpretable image features which can be incorporated, along with other features, to guide optimal treatment regimes. The proposed method treats imaging information as a realization of a stochastic process, and employs smoothing techniques in estimation. We show that the proposed estimators are consistent under mild conditions. The proposed method is applied to a dataset provided by the Alzheimer's Disease Neuroimaging Initiative.

About the Speaker

Dr. Xinyi Li is an Assistant Professor in the School of Mathematical and Statistical Sciences at Clemson University. Before joining Clemson, she was a postdoctoral fellow at the Statistical and Applied Mathematical Sciences Institute (SAMSI) during 2018-2020, joint with the University of North Carolina at Chapel Hill. She obtained her Ph.D. degree in Statistics at Iowa State University in 2018, and master degree in Statistics at the University of Georgia. Her research areas include precision medicine, functional data analysis, semi-/non-parametric high-dimensional regression, and spatio-temporal data analysis, with application to neuroimaging, statistical genetics, and public health. Dr. Li is a recipient of an NSF award and an IMS new researcher travel award (2019). She currently serves on the Early Career Advisory Board for the Journal of Multivariate Analysis.