BIOSTATISTICS SEMINAR

Dynamic Integrative Analysis for Heterogeneous Data

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The emergence of low-cost and easily accessible external datasets calls for the development of innovative statistical methods capable of integrating such massive data to provide improved estimation and inference. However, the effective use of external datasets is often impeded by biases originating from various factors, such as sampling mechanisms, outcome validity, lack of concurrency, etc. In this presentation, Dr. Gao will introduce two dynamic integrative frameworks designed to address these biases within specific contexts: (1) a test-based integrative framework at the group level, and (2) a selection-based integrative framework at the subject level. The asymptotic properties and a set of valid inferential techniques are established. Extensive real-data-driven simulations, involving incorporating external datasets with the target population, are evaluated. The proposed integrative methods yield improved results while accommodating the incompatibility of the external datasets. Additionally, we showcase the superiority of the proposed methods over the benchmark in real-data applications, using examples of randomized clinical trials and observational studies. He will also discuss a few extensions and outline future works.

Thursday, February 1, 2024, 3:30-4:30PM Eastern

133 Rosenau Hall

Zoom Link:
https://unc.zoom.us/j/98423779288?pwd=b0tqYThCQTAxeDdTQ0FRY3RnazdwQT09

Meeting ID: 984 2377 9288

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