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DISSERTATION PROPOSAL PRESENTATION

Variance Decomposition in Several Settings

WHEN
August 24, 2021
2:00 PM, CDT

WHERE
Via ZOOM
ZOOM information will be provided in the email announcement for this seminar.

Nathan Gil PhD candidate

In Part 1 of this talk, we will describe mixed-effects location-scale regression, a flexible modeling framework in which the response variance as well as the mean is allowed to depend on both fixed and random effects. We will discuss why such models can be slow to fit, and introduce a new, faster algorithm for doing so.

In Part 2, we will discuss the problem of interpreting Gaussian Graphical Models (GGMs) at the level of individual network paths. We will show that the correlation between two nodes in a GGM has an intuitive representation in terms of network topology, and that this representation naturally induces a certain path-scoring procedure. This scoring procedure can then be used to determine which paths are most important in determining pairwise node correlations.

Part 3 will focus on how the results of Part 2 can be used to develop a direction-independent notion of mediation. We will also show how our technique can overcome some shortcomings of the widely-used Baron-Kenny mediation framework.

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