DEPARTMENT OF MATHEMATICAL SCIENCES

Colloquium

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A New Class of Independence Measures and Its Application in Ultrahigh Dimensional Data Analysis

ABSTRACT: In this talk, we first introduce a novel class of measures for testing independence between two random variables of arbitrary dimensions based on the discrepancy between the conditional and the marginal characteristic function. Theoretical properties and numerical studies are included to demonstrate the advantages of our method. Based on the proposed measure, we then develop a two-stage sufficient variable selection (SVS) procedure for the large p, small n problem and a sufficient dimension reduction (SDR) approach, which can have wide applications in Machine Learning, Genomics, image processing, pattern recognition, and medicine. Simulations and a real data example illustrate the efficacy of our approaches.

Friday, January 18, 2019
11:00AM-12:00PM
Stratton Hall 203