

Indian Statistical Institute

Applied Statistics Unit

SEMINAR NOTICE

Speaker: Bhaswar Bikram Bhattacharya, University of Pennsylvania

Title: Geometric Methods for Distribution-Free Nonparametric Inference

Date: 01 August, 2023

Time: 16:15 PM

Venue: ASU Seminar Room

Online Platform: Google Meet (meet.google.com/nog-binq-rrb)

Abstract: Three of the fundamental problems in nonparametric hypothesis testing are the goodness-of-fit problem, the two-sample problem, and the independence testing problem. These problems have been extensively studied and several multivariate tests have been proposed over the years, many of which are based on geometric graphs. These include, among several others, the celebrated Friedman-Rafsky two-sample test based on the minimal spanning tree and the K-nearest neighbor graphs, the Bickel-Breiman spacings tests for goodness-of-fit, and the recently introduced Chatterjee's correlation coefficient for independence testing. These tests are often asymptotically distribution-free, universally consistent, and computationally efficient (both in sample size and in dimension), making them particularly attractive for modern statistical applications. In this talk, we will survey recent results on the efficiency properties of these tests and discuss various applications.

All are invited to attend.