BOEING DISTINGUISHED COLLOQUIA SERIES

W

When: October 6th, 2022

Where: Smith Hall 205

Speaker: Lexing Ying, Stanford University

Title: Correcting Convexity Bias

Abstract: We consider the problem of estimating a function or functional of an unknown input when only noisy observations of the input are available. When the function is convex (or concave) near the unknown input, the naive estimator often incurs a significant bias. We propose new estimators based on bootstrap to reduce this convexity bias. Theoretical analysis are conducted to show that the proposed methods can strictly reduce the expected estimate error under mild conditions. They can serve as off-the-shelf tools for a wide range of problems, including optimization problems with random objective functions or constraints, functionals of probability distributions such as the entropy and the Wasserstein distance, and matrix functions such as inversion.

Scan the QR Code for more information!

W APPLIED MATHEMATICS
UNIVERSITY *of* WASHINGTON