Postdoc Seminar

Title：Integrating Machine Learning and Optimization with Applications in Public Health and Sustainability

Speaker：Dr. Kai Wang（ 王愷 博士 ）

(Georgia Tech Computational Science and Engineering)

Time：13:30 ~14:30, Tuesday, November 7, 2023

Place：Auditorium, B1F, Institute of Statistical Science, AS

Abstract

This talk summarizes the importance of integrating optimization in both offline and online learning with applications in public health and environmental sustainability. Existing machine learning approaches primarily focus on training predictive models separately from optimization, which leads to a mismatch in predictive performance and decision quality in the downstream optimization tasks. This talk covers my work on decision-focused learning to integrate feedback from optimization to train predictive models, to avoid this mismatch. My work provides the first decision-focused learning algorithm for sequential decision problems and it significantly reduces the computation cost to enable applications in large-scale public health problems. My decision-focused learning algorithm is currently deployed in a maternal and child health program used by 100,000 beneficiaries in India to effectively schedule limited health workers to improve mothers' engagement with health information.

※ **Tea reception starts at 14：30.**
※ **Online live streaming through Cisco Webex will be available.**