University of California, Irvine
Statistics Seminar

Monoculture and Social Welfare of the Algorithmic Market Under Competition

Xin Tong
Assoc. Professor, Data Sciences and Operations
USC Marshall School of Business

4 p.m., Thursday, Nov. 14, 2024
6011 Donald Bren Hall

Algorithmic markets, where model providers utilize algorithms to provide products or ser- vices, have become increasingly prevalent in our daily lives. The adoption of more accurate algorithms holds the promise of improving social welfare through enhanced predictive accuracy. However, concerns have been raised about algorithmic monoculture, where all model providers adopt the same algorithms. The prevalence of a single algorithm can hinder social welfare due to the resulting homogeneity of available products or services. In this work, we address the rise of algorithmic monoculture from the perspective of providers' behavior under competition in the algorithmic market. We propose that competition among model providers could mitigate monoculture, thereby enhancing social welfare in the algorithmic market. By examining the impact of competition on algorithmic diversity, our study contributes to a deeper understanding of the dynamics within algorithmic markets and offers insights into strategies for promoting social welfare in these contexts.