The Chinese University of Hong Kong
Department of Statistics

Seminar

Safe dynamic pricing: always-validity and robustness

By

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Abstract

Contextual dynamic pricing aims to set personalized prices based on sequential interactions with customers. The success of existing dynamic pricing algorithms relies on the faithfulness of adopted customer choice model and valuation model. In this talk, I will discuss two procedures toward safe dynamic pricing. The first one considers a new online regularization in high-dimensional dynamic pricing. The proposed online regularization scheme empowers online statistical learning with always-validity over all decision points and envelops prediction error process with time-uniform non-asymptotic oracle inequalities. The second procedure introduces a new distribution-free pricing policy for dynamic pricing with unknown noise distribution. This distribution-free pricing policy learns both the contextual function and the market noise simultaneously. A key ingredient of this method is a novel perturbed linear bandit framework, where a modified linear upper confidence bound algorithm is proposed to balance the exploration of market noise and the exploitation of the current knowledge for better pricing.

Date:	September 28, 2021 (Tuesday)
Time:	9:00 a.m. - 10:00 a.m.
Venue:	via Zoom
Meeting ID:	606 898 8598
Passcode:	cuhkstat
Zoom link:	https://cuhk.zoom.us/j/6068988598?pwd=Q1VTL2MyWTNDWlhuVFAvQWx6dHkrUT09

ALL INTERESTED ARE WELCOME !!