Department of Advanced Design
and Systems Engineering

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Distinguished ADSE Seminar Series

Online Linear Programming: Applications and Extensions

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20 JUN 2022 (Mon) 10:30 am

Seminar Link: **https://cityu.zoom.us/j/97131414579**

Meeting ID: **971 3141 4579**

Enquiry: 3442 8422
All are welcome

Abstract

A natural optimization model that formulates many online resource allocations and dynamic decision-making problems is online linear programming (OLP) where the constraint matrix, along with the objective coefficients and decision variables, are revealed and decided column by column sequentially. We review the near optimal algorithms and theories for solving this surprisingly general class of online problems under the assumption of random order of arrivals and/or stationary distributions of the input data. Then we present few recent applications of the model/algorithm, including a fast online algorithm as a pre-solver for solving large-scale offline (binary) LPs, an interior-point online algorithm to address "fairness" for resource allocation, a provable logarithmic regret bound for the Bandits with Knapsacks (BwK) problem, an extension to online Fisher markets with a geometric aggregation of individual utilities, and how to deal with non-stationary data distributions in online learning.

Read more: www.cityu.edu.hk/adse/seminar_2021-22_8.htm

Distinguished ADSE Seminar Series 2021/22-08