

Department of Applied Mathematics Seminar

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Topic

Online Decision Making: Algorithm, Regret, Constraints and Uncertainty

Date| Time

22 January 2025 (Wednesday) | 10:30 – 11:30 (HK Time)

Venue

Y302

Abstract:

We will discuss online decision-making problems in scenarios where covariates are high-dimensional or personalized covariates are unavailable. Our focus is on the ϵ -greedy algorithm for decision making and online gradient descent for estimating model parameters. By carefully balancing exploration and exploitation, we achieve a trade-off between regret performance and estimation accuracy. Additionally, we explore online decision-making under constraints (such as knapsack problems) within a primal-dual framework, demonstrating that sublinear regret is achievable. Finally, we propose an online debiasing approach based on inverse propensity weighting (IPW) for uncertainty quantification. Real data examples will also be discussed.

ALL ARE WELCOME