THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

Numerical Analysis Seminar

Continuous-in-time Limit for Bayesian Bandits

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Abstract

In this talk, I will build the connection between Hamilton-Jacobi-Bellman equations and the multi-armed bandit (MAB) problems. MAB is a widely used paradigm for studying the exploration-exploitation trade-off in sequential decision making under uncertainty. Specifically, I will focus on the Bayesian optimal policy and its challenges due to the intractability of computing the optimal policy, especially for problems with large horizons. I will present an efficient algorithm that approximates the optimal policy by utilizing PDE solutions. Unlike traditional methods, the computational cost of our algorithm does not increase with the length of the horizon.

Date:	April 12, 2023 (Wednesday)
Time:	11:00am – 12:00noon
Venue:	ZOOM: https://hku.zoom.us/j/
	Meeting ID: 913 6532 3891
	Password: 310656

All are welcome