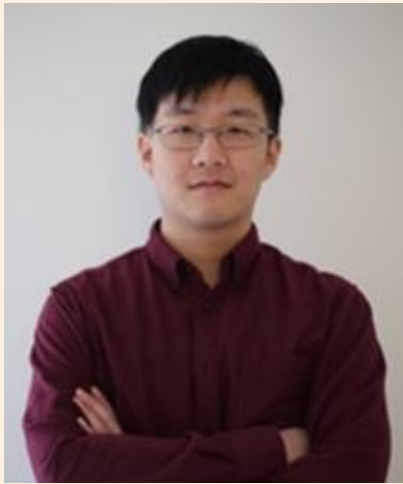# The Hong Kong University of Science and Technology

Dept of Information Systems, Business Statistics and Operations Management
OM Seminar Announcement

Feature-Based Dynamic Matching
by
Prof. Yilun CHEN
The Chinese University of Hong Kong, Shenzhen

Date	:	**29 September 2023 (Friday)**
Time	:	**10:30 – 11:45 AM**
Venue	:	**Room 6045, LSK Business Building**

Abstract: We consider a feature-based dynamic matching problem faced by centralized platforms in a highly heterogeneous market. Specifically, a set of heterogeneous supply units, each characterized by i.i.d. supply feature vector, is available initially. In each period, a customer arrives with an i.i.d. demand weight vector describing her type, and requests to consume a supply unit. The platform seeks a dynamic matching policy that assigns supply units to customers to maximize the expected average matching utility. We propose and analyze a simple, simulation-based matching policy, dubbed Simulate-Optimize-Assign-Repeat (SOAR). We prove that SOAR enjoys a surprisingly universal (near) optimality guarantee, achieving the optimal regret scaling under various modeling assumptions. Extensive numerical simulations support the robustness of the performance of SOAR.

Bio: Professor Yilun Chen is an Assistant Professor in the School of Data Science of The Chinese University of Hong Kong, Shenzhen. Professor Chen received his bachelor's degree in mathematics from Peking University in 2014. He obtained his Ph.D. degree from Cornell University in 2021. He was a postdoctoral researcher at Columbia Business School during 2021-2022. Professor Chen's research interest lies in applied probability, with a focus on designing efficient, provably optimal and scalable sequential decision-making algorithms in various OR/OM contexts.

All interested are welcome!
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