Operations Management Summer Camp 2025

Date: Friday, 15 August 2025

Venue: Singapore Management University
Lee Kong Chian School of Business
Level 2, Seminar Room (SR) 2.1

Programme	
9.30am - 10.00am	**Registration** (outside SR 2.1) **Morning Refreshment** @ Catering area 2A/2B, near SR 2.8, Level 2
10.00am - 10.15am	**Opening address by Professor Bert DE REYCK, Dean of Lee Kong Chian School of Business, Singapore Management University**
10.15am - 11.15am	**Paper 1** Presenter: **Xiaoquan GAO, Singapore Management University** Discussant: **Joel GOH, National University of Singapore** **Title:** **Data-driven Analytics for Social Good: Breaking the Vicious Cycle in Criminal Justice System** Abstract: Community corrections (CC) offer an alternative to incarceration that can reduce jail overcrowding and recidivism rates by addressing the root causes of criminal behavior. We take the first step to build a comprehensive analytical framework through a Markov decision process to study the intricate tradeoffs among individual recidivism risks and the negative effects of overcrowded jail

	and CC programs. To tackle the theoretical challenge, we develop a unified approach with system coupling and policy deviation bounding to compare value functions, establishing the superconvexity of the value function. This superconvexity result implies a switching-curve structure. Combined with the insight that the optimal policy depends on served sentence length, we design a lookahead algorithm that is both efficient and interpretable. We demonstrate the potential of our approach to help break the cycle of recidivism through a case study using data from our community partner, where capacity planning insights informed budget discussions.
11.15am - 12.15pm	**Paper 2** Presenter: **Yini GAO, Singapore Management University** Discussant: **Maqbool DADA, Johns Hopkins University** **Title:** **Rethinking Appointment Scheduling: Address Counselor Burnout and Improving Patient Outcomes** Abstract: As demand for mental health services surges, counseling clinics face a hidden crisis: counselors, overwhelmed by both heavy task load and emotional strain, make scheduling decisions that unintentionally erode clinic efficiency and patient care. This study uncovers a surprising behavioral insight by analyzing detailed data from a university counseling clinic in Singapore. Under stress, counselors are more likely to schedule follow-up appointments, yet with longer delays, leading to fragmented treatment, higher no-show rates, and reduced access for new patients. Specifically, one unit increase in task load raises the log-odds of scheduling a follow-up by 0.010, while one unit increase in emotional load raises it by 0.934. In addition, these follow-ups are also increasingly delayed. One unit increase in task load extends lead times by 0.132 days, while one unit increase in emotional load delays the next appointment by 14.804 days. To break this cycle, we design and test a task-emotional-load-sensitive scheduling policy using discrete-event simulation, achieving better service access times and shorter patient treatment pathways, all without additional resources.

	Our findings challenge conventional service models by introducing emotional load as a critical, yet overlooked, driver of system performance. They also extend behavioral operations management, showing how human stress responses, not just resource constraints, can undermine operational outcomes. This study offers a scalable, behaviorally-informed solution to enhance both counselor well-being and patient outcomes in emotionally intensive service environments.
12.15pm - 1.15pm	**Lunch** @ Catering area 2A/2B, near SR 2.8, Level 2
1.15pm – 2.15pm	**Paper 3** Presenter: **Guiyun FENG, Singapore Management University** Discussant: **Ming HU, University of Toronto** **Title:** **Taxis on Ride-Hailing Platforms: Managing On-Demand Urban Mobility Ecosystems** Abstract: Partnerships between on-demand ride-hailing platforms and traditional taxi companies allow platforms to expand their supply of service capacity and improve service quality while providing taxi drivers access to a new demand stream. We study these partnerships from the perspective of a regulator and evaluate how they should be managed. The arrival of on-demand ride-hailing platforms resulted in challenges for local and national governments tasked with regulating relations between these newcomers and incumbent taxi services. Current regulatory approaches vary from strong encouragement of taxi drivers' participation in platform-based service delivery to an equally strong drive to separate street-hailing and platform-based services. Given these diverse regulatory stances, we explore a natural question about conditions that favor each specific approach. We develop a parsimonious game-theoretical model of a government-regulated urban transportation system. In our model, the consumers of transportation services are sensitive to both price and service delays. There are two distinct groups of service providers: taxi drivers who can use both street-hailing and platform-based modes of service delivery and private car drivers who can serve consumers only via the platform. The platform controls the service fee and driver wages for platform-based services, and the

	government regulates the fee for street-hailing services and the taxi drivers' level of access to platform-based riding requests. In the absence of pressure to preserve street hailing, the optimal regulatory stance is to grant taxi drivers either "full" or "partial" access to platform-based requests. However, in settings where some degree of reliance on street hailing is present, the government should exercise a measured control over taxi drivers' access to platform-based requests if the number of private car drivers and the pressure to preserve street hailing are both low. In all other settings, the government should limit taxi drivers to exclusively serving street-hailing requests, thus separating two driver pools.
2.15pm – 3.15pm	**Paper 4 -** Presenter: **Yun Fong LIM, Singapore Management University** Discussant: **Saed ALIZAMER, University of Virginia** **Title:** **Integrating EV Charging and Discharging into Power Grid Through Bilateral Negotiation** Abstract: To deal with demand uncertainty on a power grid, a power plant with limited ramping capability can collaborate with an electric vehicle (EV) company. With proper charging and discharging prices, the EV company voluntarily withdraws electricity from or returns electricity to the power grid in suitable phases. We model the two parties' interactions as a bargaining game on the prices, followed by the EV company's charging and discharging problem and the power plant's electricity generation problem. To solve this bargaining game, we propose a novel ``Guess and Verify'' approach. Specifically, we first find an optimal solution within a restricted price set in which the two parties' total cost is minimized, and then verify its global optimality. Under an equilibrium contract, we find that the power plant can reduce its expected cost from the collaboration. This is because the EV company fully charges in a low electricity demand phase, reducing the power plant's curtailment cost, and fully discharges to the power grid in a high electricity demand phase, lowering the power plant's electricity generation cost. Based on real data, our numerical experiments suggest that the EV company's charging and discharging can substantially harmonize the power flow within the grid and save significant

	cost, especially when the electricity demand gap across different phases increases or the power plant's ramping capability decreases. Surprisingly, the EV company's percentage cost saving can exceed 100%, implying that it can make a profit from the collaboration. For the power plant, the percentage cost saving is 2-7%.
3.15pm - 3.45pm	**Tea Break** @ Catering area 2A, near SR 2.8, Level 2
3.45pm - 4.45pm	**Paper 5** Presenter: **Omer SARITAC, Singapore Management University** Discussant: **Sameer HASIJA, INSEAD** **Title:** **Marketplace Diversity by Design: How Recommendation Algorithms Shape Pricing, Participation, and Consumer Search** Abstract: Recommendation algorithms shape the diversity and performance of digital marketplaces, yet their strategic implications are not fully understood. In this paper, we investigate how a revenue-maximizing platform should choose its recommendation policy in a two-sided marketplace where both customers and sellers strategically respond to the platform's decisions. To answer this, we develop an infinite-horizon model in which, each period, customers arrive with private valuations and sellers enter with privately observed mismatch costs reflecting product-customer fit. Sellers set prices strategically, customers choose between immediate purchase or continued search, and the platform earns commissions on completed transactions. The platform's central decision is its recommendation distribution over seller types, explicitly accounting for the long-run consequences on entry patterns, pricing strategies, and customer search behavior. We first characterize the stationary equilibrium under a given recommendation strategy and then identify the platform's optimal recommender. Surprisingly, the revenue-maximizing recommendation often deliberately steers a portion of customers toward their less-preferred sellers. We explore the underlying mechanism driving this counterintuitive result: by softening customers' incentive to continue searching, the platform reduces competitive pressures among sellers, enabling higher equilibrium prices and greater platform revenue. We then examine how this optimal recommender

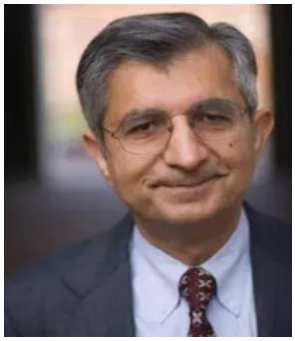
	affects customer surplus and seller profit, characterizing precisely when optimizing recommendations creates trade-offs among these welfare measures and when it simultaneously improves the outcomes for both market sides. Finally, we extend our analysis to two distinct customer segments, demonstrating that our main findings persist despite customer heterogeneity in preferences, arrival rates, patience, and willingness-to-pay. Our results provide clear insights into when marketplaces should strategically promote diversity versus adopt narrower recommendation policies to maximize long-run platform revenue and welfare outcomes.
4.45pm - 5.00pm	**Concluding Remarks** **End of OM Summer Camp**

Discussants' Profile (in order of presentation):

Joel Goh
Professor of Analytics and Operations
NUS Business School, National University of Singapore

My primary research agenda centers around three applied research domains: healthcare analytics, supply chain analytics, and the operations of service platforms. My work in healthcare analytics falls into four separate themes: (a) preventing, detecting, and treating health conditions, (b) incentives in healthcare, (c) workplace stressors and health, and (d) hospital operations. In the domain of supply chain analytics, I'm primarily interested in understanding how new business models, enabled by digital technology, can be harnessed to unlock hidden efficiencies in supply chains. Finally, I am interested in understanding how service platforms can operate more effectively, which can be achieved through changes in operating policies or different forms of information provision. I also have secondary research interests in methodologies for optimal decision-making and co-created Robust Optimization Made Easy (ROME), a software package for modeling robust optimization problems.

I currently serve as an Associate Editor at Management Science, Manufacturing & Service Operations Management, Service Science, and Health Care Management Science, as well as a Senior Editor at Production and Operations Management.



Maqbool DADA

Professor of Operations Management and Business Analytics
Carey Business School, John Hopkins University

Maqbool Dada is a Professor in Operations Management & Business Analytics at the Johns Hopkins Business School. He has a joint appointment in Department of Anaesthesia and Critical Care Medicine, School of Medicine, and is on the Core Faculty of the Armstrong Institute for Patient Safety and Quality. He has expertise in the areas of operations management, health care operations, supply chain management and pricing models.

Ming Hu

Distinguished Professor of Business Operations and Analytics
Rotman School of Management, University of Toronto

Ming Hu is the University of Toronto Distinguished Professor of Business Operations and Analytics, a professor of operations management at the Rotman School of Management, and an Amazon Scholar. He received a master's degree in Applied Mathematics from Brown University in 2003 and a Ph.D. in Operations Research from Columbia University in 2009.

Saed ALIZAMER

Associate Professor of Business Administration
Darden School of Business, University of Virginia

Saed Alizamir is an Associate Professor of Data Analytics & Decision Sciences at the University of Virginia Darden School of Business. He is formerly an Associate Professor Operations Management at

Yale School of Management. He received his PhD in Decision Sciences from Duke University's Fuqua School of Business.

Professor Alizamir's research interests lies in the area of social responsibility and public sector operations. In his research, he focuses on problems in public policy that involve private-public interactions and dynamic decision-making. The goal of his research is to provide normative recommendations that inform better policy decisions, especially in areas where not enough data exists to run full-fledged empirical studies. He has worked on government subsidy instruments in renewable energy industry and electric vehicle markets, agricultural supply chains, demand management in residential electricity sector, and optimal control of diagnostic systems such as nurse triage.

In 2021, Professor Alizamir was named as one of the World's Best 40 Under 40 Business School Professors by Poets & Quants. He is currently serving as an Associate Editor for the Operations Research and the Management Science journals.

Sameer Hasija
Professor of Technology and Operations Management
INSEAD

Sameer Hasija is a Professor of Technology and Operations Management at INSEAD. He earned his PhD in Operations Management and MS in Management Science Methods from the Simon School of Business at the University of Rochester and his BTech from the Indian Institute of Technology Madras.

Sameer's teaching focusses on using a process lens to understand new levers of innovation. Using a systematic analysis of processes within and across firm boundaries, he emphasises the role of process-based innovation in creating new business models and/or fresh competitive positioning for existing business models. Sameer conducts workshops for executives on understanding the latest developments in technology and their role in radically disrupting and/or transforming businesses.

Sameer's current research uses an economics lens to understand the design and management of technology, knowledge, and information intensive service systems.

~ Thank you ~