ANALYTICS AND STOCHASTIC OPTIMIZATION FOR SUPPLY CHAIN DECISION-MAKING IN UNCERTAIN ENVIRONMENTS

Speaker:

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ABSTRACT

Traditional supply chain planning models that rely on simplistic assumptions with respect to uncertainties, in particular the use of deterministic models with point forecasts or estimations of uncertain inputs such as demands and lead times, are far from being effective when the presence of uncertainty is significant. According to a recent study, the majority of organizations are under the impression that they lack the requisite tools and resources to effectively address uncertainties and potential disruptions in supply chains. This talk covers our recent research works that leverage various optimization and machine learning methods for decision-making under uncertainty. We will discuss the incorporation of uncertainty in a variety of forms into decision models for supply chain applications, including production and fulfillment planning, inventory management, and transportation planning, through the use of stochastic optimization frameworks.

BIOSKETCH

Yossiri Adulyasak is the Canada Research Chairholder in Supply Chain Analytics, an associate professor at HEC Montréal and an adjunct professor at the Université de Montréal (DIRO). Prior to joining HEC, he was a postdoc at MIT and then a data scientist at JDA Labs (now Blue Yonder). To date, he has co-authored more than 40 research articles in the areas related to supply chain management, AI/analytics and optimization which appeared in prominent research journals including Operations Research, INFORMS Journal on Computing, Transportation Science, Manufacturing & Service Operations Management, Production and Operations Management, Transportation Research - Part B, Journal of Artificial Intelligence Research, as well as top-tier machine learning and AI conferences such as NeurIPS and AAAI. Drawing upon his scientific expertise, Yossiri advises leading Canadian and international companies, as well as startups, on the implementation of advanced analytics in various supply chain applications. He is also a co-inventor of five patent applications in retail and supply chain analytics, and has been awarded several prizes from academic and industrial organizations during his tenure.

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