The Hong Kong University of Science and Technology
Dept of Information Systems, Business Statistics and Operations Management
OM Seminar Announcement

Optimal Learning and Management of Threatened Species
by
Prof. Jue WANG
Queen's University

Date	:	**27 October 2023 (Friday)**
Time	:	**10:30 – 11:45 AM**
Venue	:	**Case Room G001, LSK Business Building**

Abstract: Biodiversity is being lost at an unprecedented and accelerating rate. When a species dwindles to a small population, obtaining basic information about its abundance and distribution becomes increasingly difficult. To add to the problem, the funds and resources available for conservation are often limited, and the state of the species can change over time. A pressing issue is how to improve the effectiveness of conservation with limited information and resources. Although surveying can guide protection by acquiring more information, it consumes fund and time, resulting in a trade-off between surveying and protection.

We develop a Bayes-adaptive partially observable Markov decision process (POMDP) framework to optimize the learning and management of threatened species in a noisy, dynamic, and uncertain environment. It enables managers to adaptively learn the optimal policy of POMDP with unknown parameters. In collaboration with the Hainan Tropical Rainforest National Park, we conduct an empirical study to optimize the spatiotemporal allocation of resources for the conservation of the Hainan Gibbon, the world's rarest primate.

Bio: Jue Wang is an associate professor and distinguished faculty fellow of management analytics at the Smith School of Business, Queen's University in Canada. He develops decision tools to improve the monitoring and management decisions encountered in biodiversity conservation and system reliability. He received his PhD from the University of Toronto.

All interested are welcome!
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