

BUSINESS ANALYTICS GUEST LECTURER SEMINAR SERIES

September 24. 11:00 a.m.-12:00 p.m. in Zoom.

Speaker: Emma Frejinger

Title: Periodic Demand Estimation for Large-scale Tactical Planning

Abstract:

Demand forecasts play a central role when solving various types of transport-related optimization problems. Yet forecasting and optimization problems are typically studied separately. In this talk we introduce the Periodic Demand Estimation problem for large-scale tactical planning of freight transportation. It is an example of a setting where it is beneficial to integrate prediction and optimization problems. We describe the methodology and present results for an application from the Canadian National Railway Company. Finally, we situate this work in the context of two related research areas, namely, end-to-end learning and data-driven inverse optimization.

The talk is based on joint work with Mike Hewitt, Greta Laage and Gilles Savard.

Links to related working papers:

<https://arxiv.org/abs/2105.09136>

<https://arxiv.org/abs/2108.08331>

Short bio:

Emma Frejinger, Associate Professor at the Department of Computer Science and Operations Research at Université de Montréal, holds the Canada Research Chair in Demand Forecasting and Optimization of Transport Systems, and the CN Chair in Optimization of Railway Operations. She has been involved in numerous projects with public and private actors solving decision-making problems using methodologies from the fields of machine learning and operations research. She is a member of CIRRELT, an associate member of Mila and she works part-time as a scientific advisor for IVADO Labs.