



Séminaire du CIRRELT Seminar

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OPTIMIZATION TECHNIQUES FOR PLANNING AND OPERATING AN ON-DEMAND MULTIMODAL TRANSIT SYSTEM

Abstract: On-Demand Multimodal Transit Systems combine dynamically dispatched shuttles in low-density areas with high-occupancy vehicles to serve high-density corridors. They simultaneously address (1) the infamous first/last mile problem by picking up/dropping off riders close to their origins and destinations and (2) congestion by aggregating rides in crowded arteries. On-demand multimodal transit systems fill a sweet spot between ride-sourcing services and traditional transit systems. They are fully synchronized and optimized holistically, can be priced as traditional transit systems, and have the potential to improve mobility for entire segments of the population. This talk presents the underlying series of optimization problems behind the design and operation of on-demand transit systems. They include network design, trip splitting, zone allocation, fleet sizing, rostering, and real-time dial-a-ride optimization. Experimental results on the city of Ann Arbor demonstrates the potential benefits of these systems and the value of optimization.

Bio: Antoine Legrain is a Professor at Polytechnique Montreal in the Department of Mathematics and Industrial Engineering since 2019. He received a Bachelor of Engineering from France and a Ph.D. from Polytechnique Montreal in 2015. He was a research fellow at the University of Michigan from 2016 to 2018 where he worked on multi-modal transportation system. His research focuses on real-time operations management and optimization to improve access to the healthcare systems and optimize transportation services.

MERCREDI / WEDNESDAY
12 juin 2019 /
June 12th, 2019
14h00

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

Ouvert à tous / Open to all

Organisateur / Organizer

Martin Trépanier



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