



*Ph.D. programme
in Mathematics and Computer Science*

Speakers: Prof. Leandro C. Coelho, University of LAVAL - CANADA

Title: Traffic and the city: how to plan for better distribution?

Abstract: We review the new trend in distribution problems accounting for traffic and time-dependent delays, as is common in most big cities. We identify some shortcomings in the current state of research, and suggest alternatives for their resolution. However, the new ideas are challenging and require a new body of research to truly emerge, ranging from geomatics, engineering, optimization, database management, real-time data acquirement, and much more. We describe a practical approach to measure and compute not only traffic but also the time it takes to traverse any arc in a large network based on a large amount of data obtained through crowdsourcing. Our method is capable of providing the real-time state of the network with 15-minute intervals for any day of the week. Based on a close collaboration with a distribution company, we are able to assess the quality of their routes and to propose significant improvements, showing how one can have trucks delivery more and wait less in congested traffic. From a scientific perspective, we develop several real-life instances based on our large database from Quebec City (Canada). We design and implement simple ideas to create an intricate heuristic algorithm, and we also model the problem mathematically. In the talk, preliminary results and insights will be discussed.

Short Biography: Prof Leandro Coelho obtained his PhD from HEC Montréal in 2012. He is an associate professor at Université Laval, Canada and director of the Canada Research Chair in Integrated Logistics, and adjunct professor at Groningen University, the Netherlands. He is a member of the CIRRELT and GERAD, two well-known research centers on management science, optimization, transportation and logistics. His research interests lie on developing optimization algorithms (exact methods, and meta- and matheuristics) for integrated logistics problems. He has given keynote talks at different conferences and has published more than 40 papers in international journals.

Date
27 November, 2018

Time
3:00 pm

Room Seminary
DIMEG-Building 44C -
floor 2nd