



Séminaire conjoint / Joint Seminar
Chaire de recherche du Canada en logistique et en transport et
Chaire de recherche du Canada en distributique



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An Adaptive Large Neighborhood Search Heuristic for the Pickup and Delivery Problem with Time Windows and Scheduled Lines

Abstract: The Pickup and Delivery Problem with Time Windows and Scheduled Lines (PDPTW-SL) concerns scheduling a set of vehicles to serve freight requests such that a part of the journey can be carried out on a scheduled public transportation line using bus, train, tram, metro, etc. Due to the complexity of the problem, which is NP-hard, we propose an Adaptive Large Neighborhood Search (ALNS) heuristic algorithm to solve the PDPTW-SL. Complex aspects such as fixed lines' schedules, synchronization and time-windows constraints are efficiently considered in the proposed algorithm. Results of extensive computational experiments show that the ALNS is highly effective in finding good-quality solutions on the generated PDPTW-SL instances with up to 100 freight requests that reasonably represent real life situations.

Note: Veaceslav Ghilas is originally from Republic of Moldova. He obtained his Bachelor's degree at the Maritime University of Constanta, Romania, in 2009, where he was trained to become a maritime deck officer. Afterwards, he successfully accomplished a MSc programme in transportation and logistics at Technical University of Denmark in 2012. He is now a PhD student at Eindhoven University of Technology, the Netherlands. His research topic is in the area of integrated passenger and freight transportation from planning and scheduling perspective. More specifically, he investigates an extension of the classical pickup and delivery problem, which consists of allowing the request transfers to public scheduled lined services, such as bus, train, metro, etc. as a part of the journey. He is presently doing an internship at CIRRELT under the supervision of Prof. Jean-François Cordeau. V.Ghilas@tue.nl

MERCREDI / WEDNESDAY

15 avril 2015 /
April 15th, 2015
10h30

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

Ouvert à tous / Open to all

Organisateur / Organizer
Jean-François Cordeau



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