Joint Seminar CIRRELT, MobilOpt and Canada research chair in integrated logistics

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UNIVERSITÉ LAVAL | Canada research chair in integrated logistics

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MobilOpt: Mobility Optimization

Park-and-Loop Routing Problems in Last-Mile Delivery Operations

Abstract: In highly dense urban areas, parking directly at each customer's location is often difficult or even impossible. Consequently, delivery drivers commonly park at designated parking spots and complete deliveries on foot, resulting in park-and-loop delivery structures. The limited availability of parking spaces at these locations introduces additional complexity when designing efficient routing plans. To tackle these challenges, we discuss two variants of park-and-loop routing problem. First, we introduce *The Flexible Park-and-Loop Routing Problem,* in which we demonstrate how different forms of customer-related flexibility can reduce operational costs. We further assume the existence of a centralized parking reservation system that allows last-mile delivery providers to reserve parking spaces in advance. Next, we consider an alternative in which such a centralized parking reservation system is not available, while parking occupancy levels can be predicted using historical records. We address this setting through *The Park-and-Loop Routing Problem with Time-Dependent Parking Time.* For both problems, we develop mixed-integer linear programming models and Large Neighborhood Search-based heuristics to tackle the problems of various scales. Finally, we discuss several managerial insights derived from our computational experiments.

Short biography: Panca Jodiawan is an Assistant Professor in the Department of Industrial Engineering and Management at Yuan Ze University, Taiwan, where he has been serving since 2025. He received his Ph.D. in Industrial Management from the National Taiwan University of Science and Technology in 2022. From September 2023 to February 2025, he was a Postdoctoral Fellow at Université Laval, Canada, under the supervision of Prof. Leandro C. Coelho and Prof. Jean-François Côté. His research interests focus on optimization models and heuristic methods for last-mile delivery and vehicle routing problems.

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Meeting ID: 684 5669 5387 - Passcode: 362201

Jeudi / Thursday
23 juillet 2026 / July 23rd, 2026
10 h

Université Laval
Pavillon Palasis-Prince
Salle / Room 2327

Ouvert à tous / Open to all
Café et viennoiseries

Responsable / Organizer:
Leandro Coelho

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