Workshop OR4Logistics – Stochastic and dynamic problems in logistics

Date: September 21, 2023

Location: Faculty of Economics and Business, KU Leuven (Leuven Campus)

10h Welcome

10h30 Keynote prof dr Ola Jabali:

Recent stochastic and dynamic problems in logistics and transportation

Sequential decision-making in the face of uncertainty has been receiving growing attention from the transportation science community. This is due to the ever-increasing amount of usable data, coupled with the adoption of more dynamic operational practices. The resulting problems are typically formulated as stochastic dynamic programs (SDPs).

In this talk we discuss SDP models, solution methodologies and bounds. We showcase these topics through three recent transportation applications. The first relates to an electric vehicle shortest path problem with charging station occupancy information. The second concerns a vehicle routing problem with a highly variable customer basis and stochastic demands. Lastly, we examine a yard management truck scheduling problem using estimated time of arrival information. In particular, we present a reoptimization algorithm, an off-line approximate value iteration algorithm, and an on-line rollout algorithm.

12h-13h Lunch

13h-17h Afternoon session

In the afternoon session we invite PhD students and postdocs who are interested in stochastic and dynamic decision making in logistics (in its broadest sense) to actively participate in an afternoon seminar and to present their work to peers. To this end, please submit an abstract according to the guidelines below. Attendance without presenting is also possible, but subject to a limited number of participants.

Submission guidelines:

Authors are invited to submit an English abstract (max 1 A4-page, including references; font: Times New Roman; font size: 11; line spacing: 1.5) in .docx/.doc-format. Please indicate in your abstract which stochastic or dynamic problem settings in logistics you are studying and submit your abstract to: researchgroup.logistics@uhasselt.be

Practicalities:

Registration is free but required, deadline **1st of September 2023**, and includes lunch and coffee break. The following link can be used to register: https://forms.gle/GX3SpdPxcLg6VyrX9

Each contributed talk will be allocated 20 minutes, followed by 10 minutes discussion time.

Organizers:

Prof dr Roel Leus

Prof dr An Caris

We hope to welcome you!

SHORT BIO

OLA JABALI

Ola Jabali is an associate professor at the operations research and discrete optimization group of DEIB (Dipartimento di Elettronica, Informazione e Bioingegneria) at the Politecnico di Milano. She is also an affiliated professor at HEC Montréal, Canada, and a collaborating member of the Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation (CIRRELT). She obtained her BSc. and MSc. in industrial engineering from the Technion, Israeli Institute of Technology in 2003 and 2006, respectively. She received her Ph.D. in industrial engineering in 2010 from the Eindhoven University of Technology. In 2011 she was a post-doctoral fellow at Polytechnique Montréal. From 2012 till 2016 she was an assistant professor at the Department of Logistics and Operations Management at HEC Montréal.

Her research interests deal with developing mathematical models coupled with efficient solution procedures to realistic problems arising in transportation, production and logistics. She mainly focuses on optimizing goods transportation considering aspects related to pollution, uncertainty, fleet composition and customer service.

She is associate editor for INFOR: Information Systems and Operational Research, Transportation Research Part C: Emerging Technologies, and Transportation Science. She acted as principle investigator of her department in a number projects funded by the Italian Ministry of Education Universities and Research, the Italian National Recovery and Resilience Plan, the European Commission (Horizon 2020), the Natural Sciences and Engineering Research Council of Canada and the Fonds de Recherche du Québec – Nature et Technologies.