# Lecture Series of the
# Research Institute for Supply Chain Management

Firday, June 14, 2024, 12:30 pm

Room D3.0.225, Welthandelsplatz 1,

1020 Vienna


## LUUK VEELENTURF

## "REAL-TIME ROUTING COST PREDICTIONS FOR TIME SLOT MANAGEMENT)"

In the context of online attended home delivery services, the last-mile operations constitute the costliest stage. Businesses make significant efforts to optimize these operations for maximum efficiency and cost reduction. Currently, in most e-grocery companies, customers are presented with a selection of available delivery time slots to choose from. When a customer initiates a purchase, the seller must quickly decide which time slots to offer and whether to incentivize them to pick one that allows for efficient routes. To make these decisions, the retailer has to first evaluate if there is spare capacity in each available slot and how costly it would be to serve them in those slots. Determining the extra cost and distance associated with accepting that customer in each available time slot is a difficult problem. In practice, routing heuristics are in place to estimate these costs, but they are constrained by the real-time aspect of the decisions, which imposes a limit on the available computing time. In this work, we explore the use of Machine Learning models to better predict these extra routing costs. This is joint work with Gustavo Hurovich (main author) and Niels Agatz.

**Luuk Veelenturf** is an Associate Professor at the Department of Technology and Operations Management at Rotterdam School of Management, Erasmus University. His research interests lie mainly in the area of real-time transport and mobility operations, with a specific focus on public transport planning, railway disruption management, city logistics, vehicle routing & pickup and delivery variants and data-driven transport operations. A large part of Luuk's research focuses on sustainable transportation and algorithms to support logistics-related decision. As it is impossible to wait until all information has been collected before decisions are made, smart analytics will become more important. By improving systems and schedules, Luuk aims to make public transport a more attractive and sustainable alternative and make city logistics more efficient.

For further information, please contact sekretariat.itl@wu.ac.at