



CIRRELT

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Swiss Federal Railway

PLANNING AND OPTIMIZING CIRCULATIONS IN TRANSPORT COMPANIES

Abstract: Swiss Federal Railway Company (SBB) is currently working on the project "Planning and Optimization of Circulations in Railway Companies". Taking into account the enormous volatility of the underlying complex system, the long-term objective is to promptly find alternative circulations in case of an unforeseen disruption or other malfunctions. The seminar will start with a short outline how circulations at SBB are planned today. After that, we highlight the use of a deductive reasoning method, namely Answer Set Programming (ASP), for finding optimized sets of solutions for the circulations. We will then give a preview on how we intend to process the data in combination with Neural Networks and what kind of challenges we are facing.

Bio: **Natalie Kuster** holds a M.Sc. in Atmospheric and Climate Science. During her Master thesis she worked on an exceptional combination of the Eulerian and the Lagrangian framework to verify meteorological phenomena in ensemble forecasts. She joined the Research and Innovation Lab at SBB in May 2019. Her current research focus includes combinatorial optimization of circuits by means of declarative problem solving, Graph Theory, and Deep Learning. **Gregory Varga** has a degree in business administration and information technology. Before joining Swiss Federal Railway Company (SBB), he worked for 7 years as a project manager in the area of IT supported distribution systems. At SBB he is responsible for different projects and applications regarding passenger transportation. Since 2018 he is joining part time the innovation laboratory of the SBB. His current research topic is the optimization of circuits using answer set programming.

JEUDI / THURSDAY
22 août 2019 /
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11h00

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

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