TAL RESEARCH DAY  
Wednesday July 6th, 2022

Sponsored by the 
Transit Analytics Lab 
University of Toronto Mobility Network

Draft Program

09:00  Introduction to the Transit Analytics Lab (TAL)  
Words of Welcome and Update on TAL Activities (Amer Shalaby)

09:20  Transit Analytics Related to Planning and Scheduling  
(Moderator: Brendon Hemily)
  • Planning Integrated On-Demand and Scheduled Bus Transit Services: Guiding Principles (Alaa Itani)
  • Coordinated and Bi-Objective Transit Signal Priority (TSP): Optimization Using a Deep Reinforcement Learning Approach (Wenxun Hu)
  • Incorporating Service Reliability in Multi-Depot Vehicle Scheduling: Stochastic Optimization Approach (Margarita Castro)
  • Transfer Synchronization in Transit Networks: Stochastic Programming Approach (Zahra Ansarilari)
  • Advanced Real-Time Transit Management Strategies in Mixed-Traffic Arterials (Kareem Othman)

10:30  Break

10:50  Operations Analytics to Improve Rail Performance  
(Moderator: Amer Shalaby)
  • Using Customer Facing WiFi Data for the Analysis of Subway Service Performance and User Experience (Aidan Grenville and Willem Klumpenhouwer)
  • Modelling Origin-Destination Demand in Toronto's Subway Network using Wi-Fi and AFC Data (Diego Da Silva and Feras Elsaid)
  • Disruption Delays in Nanjing Urban Rail Transit Network: Analysis of Disruption Duration and Frequency (Jinyi Chen)
• Analyzing Stochastic Railway Networks Using Event-Based Mesoscopic Simulation
  (Willem Klumpenhouwer)

12:00  Lunch Break

12:45  Keynote Presentation
  TransLink Tomorrow; Promoting Innovation in Transit through Collaboration on Research
  Graham Cavanagh, Senior Planner - New Mobility - Strategic Planning & Policy

1:30  Transit Analytics Applications from the Field
  (Moderator: Brendon Hemily)
  Presentations highlighting applications or initiatives involving advanced analytics at
  transit systems.

2:30  Break

2:45  Transit Analytics to Support Policy and Equity
  (Moderator: Amer Shalaby)
  • Potential Policy Analyses Using the Equity Dashboard Platform (Willem
    Klumpenhouwer and Diego Da Silva)
  • An Equity Evaluation of Bus Prioritization Measures within the Toronto Transit
    Commission’s 5-year Service Plan & 10-year Outlook (Alex Tabascio)
  • Assessment of Toronto Transit Network Resilience and Effects on Social Equity
    (Rick Liu)
  • Investigating the Impact of COVID-19 on Post-Pandemic Transit Demand (Sk. Md.
    Mashrur)

3:55  Wrap-Up

4:00  End of Research Day