

# Tommaso Schettini

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## Current Position

August 2024 – present **Assistant Professor**, *Concordia University, Canada*, Mechanical, Industrial and Aerospace Engineering Department, Gina Cody School of Engineering and Computer Science.

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## Past Positions and Education

October 2022 – July 2024 **Post-Doctoral Fellow**, *HEC Montréal and GERAD, Canada*, Supervisors: Prof. Fausto Errico, Prof. Jorge Mendoza, and Prof. Carolina Osorio.

April 2021 – September 2022 **Post-Doctoral Fellow**, *Politecnico di Milano, Italy*, Supervisors: Prof. Ola Jabali and Prof. Federico Malucelli.

2017 – 2021 **Ph.D in Information Technology, area "Systems and Control"**, *Politecnico di Milano, Italy, cum laude*.

Dissertation: Demand-Driven Timetabling Optimization for Automated Metro Lines. Supervisors: Prof. Ola Jabali and Prof. Federico Malucelli.

2014 – 2017 **Master of Science in Automation and Control Engineering**, *Politecnico di Milano, Italy, passing grade 110/110 cum laude (GPA 29.7/30)*.

Master Thesis: Optimizing the Scheduling of a Pick and Place Robotic System. Supervisors: Prof. Federico Malucelli and Prof. Helena Ramalhinho Lourenço.

2011 – 2014 **Bachelor of Science in Automation Engineering**, *Politecnico di Milano, Italy, passing grade 110/110 cum laude (GPA 29.6/30)*.

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## Research Funding

2025–2030 NSERC Discovery Grant (\$190,000 total / \$38,000/year). *Natural Sciences and Engineering Research Council of Canada*. Principal Investigator.

2025–2030 NSERC Discovery Launch Supplement (\$12,500). *Natural Sciences and Engineering Research Council of Canada*. Principal Investigator.

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## Journal Papers

1. Jianli Shi, Tommaso Schettini, Ola Jabali. "Demand Allocation Policies for the Charging Station Location and Sizing Problem." *INFOR: Information Systems and Operational Research* (2025).
2. Tommaso Schettini, Michel Gendreau, Ola Jabali, Federico Malucelli. "A Pattern-Based Timetabling Strategy for a short-turning Metro Line." *Public Transport* 16 (1) (2024), 1–37.
3. Tommaso Schettini, Michel Gendreau, Ola Jabali, Federico Malucelli. "A Heuristic Algorithm for the Capacitated Demand-Driven Metro Timetabling Problem." *Transportation Science* 57(5) (2023): 1379–1401.
4. Tommaso Schettini, Mauro dell'Amico, Francesca Fumero, Ola Jabali, Federico Malucelli. "Locating and Sizing Electric Vehicle Chargers Considering Multiple Technologies." *Energies* 16(10), (2023): 4186.
5. Tommaso Schettini, Federico Malucelli, Helena Ramalhinho Lourenço. "Scheduling a Pick and Place Packaging Line." *Journal of Scheduling* (2022): 1099–1425.

6. Tommaso Schettini, Ola Jabali, Federico Malucelli. "Demand-Driven Timetabling for a Metro Corridor Using a Short-Turning Acceleration Strategy." *Transportation Science* 56(4) (2022): 919–937.
7. Tommaso Schettini, Ola Jabali, Federico Malucelli. "A Benders Decomposition Algorithm for Demand-Driven Metro Scheduling." *Computers & Operations Research* 138 (2022): 105598.
8. Marianna Fornasiero, Federico Malucelli, Rodolfo Pazzi, Tommaso Schettini. "Empowering Optimization Skills Through an Orienteering Competition." *INFORMS Transactions on Education* 22.1 (2021): 1–8.

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## Refereed Conference Proceedings

1. Fei Yan, Maximiliano Cubillos, Ola Jabali, Tommaso Schettini. "Simulation-based pattern timetabling for short-turning trains in a metro network." *IEEE Intelligent Transportation Systems Society Conference* (2025, In Press).
2. Manuel Candiani, Federico Malucelli, Marta Pascoal, Tommaso Schettini. "Optimizing the integration of express bus services with micro-mobility: a case study." *Transportation Research Procedia* (2024).
3. Tommaso Schettini, Ola Jabali, Federico Malucelli. "Metro Scheduling for Special Events." *Transportation Research Procedia* 52 (2021): 147–154.

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## Manuscripts Submitted and in Preparation

1. Tommaso Schettini, Ola Jabali, Gilbert Laporte, Federico Malucelli. "Demand-Driven Transit Timetabling: Research Perspectives." Submitted to *Transportation Research Part C: Emerging Technologies*.
2. Tommaso Schettini, Fausto Errico, Jorge Mendoza, Carolina Osorio. "Leveraging 0-1 linear programming for partitioning and sampling in simulation-based optimization." Revision Requested at *European Journal of Operational Research*.
3. Ziyuan Sun, Claudio Contardo, Jean-François Cordeau, Tommaso Schettini. "Decomposition algorithms for stochastic multi-period multiple allocation hub location with modular capacity." In preparation.
4. Simin Chai, Ola Jabali, Tommaso Schettini, Jiateng Yin, Tao Tang. "Optimizing metro timetabling and capacity decisions considering feeder buses." In preparation, targeting *Transportation Science*.
5. Jon Butkovich, Tommaso Schettini, Christopher Wong. "Letting robots see: Optimizing robot sensor placement using sensor observability analysis." In preparation, targeting *RAL-ICRA-2026*.
6. Tommaso Schettini, Jorge Mendoza, Nicholas Kullman. "OpenHail, an open-source environment for dynamic ride-hailing problems with electric vehicles." In preparation, targeting *INFORMS Journal on Computing*.

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## Presentations

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| July 24-26, 2024 | ISMP 2024, Montreal, Canada. "Optimizing Electric Vehicle Charger Locations for Ride-hailing Services through Discrete Simulation-based Optimization".   |
| May 19-24, 2024  | Odysseus 2024, Seville, Spain. "Optimizing Electric Vehicle Charger Locations for Ride-hailing Services through Discrete Simulation-based Optimization". |
| May 6-8, 2024    | JOPT - Optimization Days 2024, Montreal, Canada. "Leveraging 0-1 linear programming for partitioning and sampling in simulation-based optimization".     |

- September 6-8, 2023 25th EURO Working Group on Transportation, EWGT2023, Santander, Spain. "Optimizing the integration of express bus services with micro-mobility: a case study".
- May 29-31, 2023 CORS / Optimization Days 2023, Montréal, Canada. "Clustering-Based Partitioning Scheme for Simulation-Based Optimization: A Case Study on Electric Vehicle Charger Location for Ride-hailing Services".
- April 19, 2023 Meet a GERAD Researcher, Montréal, Canada. "Optimizing Electric Vehicle Charger Locations for Ride-hailing Services through Discrete Simulation-based Optimization".
- May 4-9, 2022 ODYSSEUS 2021, Tangier, Morocco. "Pattern-Based Timetables for Metro Lines".
- July 19-20, 2021 INFORMS TSL workshop 2021, Online. "Demand-Driven Scheduling for a Metro Corridor Using a Short-Turning Acceleration Strategy".
- September 16-18, 2020 23rd EURO Working Group on Transportation, EWGT2020, Paphos, Cyprus. "Metro Scheduling for Special Events".
- March 22-23, 2018 19th EU/ME Workshop on Metaheuristics for Industry, Geneva, Switzerland. "A Metaheuristic Approach for the Pick and Place Packaging Problem".
- July 4-7, 2017 12th Metaheuristics International Conference, MIC 2017, Barcelona, Spain (Doctoral Colloquium Session). "Scheduling of a Line Manager Using Iterated Local Search".

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## Teaching activities

- Fall INDU 6310 - Applied Probability and Statistics for Engineers (Graduate), *Concordia University*.
- Winter INDU 6141 - Logistics Network Models (Graduate), *Concordia University*.
- Winter INDU 323 - Operations Research I (Undergraduate), *Concordia University*.
- 2018 – 2022 Foundations of Operations Research (English), Exercise sessions and Lab activities, Politecnico di Milano, Master of Telecommunication Engineering and Computer Science Engineering. Academic years 2017/2018, 2018/2019, 2019/2020, 2020/2021, and 2021/2022.
- 2018 – 2021 Fondamenti di Ricerca Operativa (Foundations of Operations Research, Italian), Exercise sessions and Lab activities, Politecnico di Milano, Bachelor of Automation Engineering. Academic years 2017/2018, 2018/2019, 2019/2020, and 2020/2021.

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## Supervision and Mentorship

- 2026 – Present Rashique Itquan, MSc Student, Concordia University, Principal Supervisor.
- 2025 – Present Fatemeh Homayouni, MSc Student, Concordia University, Principal Supervisor.
- 2025 – Present Jon Buckovich, Undergraduate Student, Concordia University, Co-Supervisor (Co-supervised with Prof. Christopher Yee Wong).
- 2026 – Present Daniela Quila, Ph.D. Student, Concordia University, Co-Supervisor (Co-supervised with Prof. Onur Kuzgundaya).
- 2025 – Present Ziyuan Sun, Ph.D. Student, Concordia University, Co-Supervisor (Co-supervised with Prof. Claudio Contardo and Prof. Jean-François Cordeau).
- 2025 – Present Linyun He, Post-doctoral Fellow, HEC Montreal, Co-Supervisor (Co-supervised with Prof. Fausto Errico, Prof. Jorge Mendoza and Prof. Carolina Osorio).

- 2025 – Present Bolong Zhou, Visiting Ph.D. Student, HKUST, Ad-Hoc Advisor (Supervisor: Prof. Ola Jabali).
- 2024 – Present Simin Chai, Visiting Ph.D. Student, Politecnico di Milano, Ad-Hoc Supervisor (Supervisor: Prof. Ola Jabali).
- 2023 – 2024 Fei Yan, Visiting Ph.D. Student (Completed), Beijing Jiaotong University, Ad-Hoc Supervisor (Supervisor: Prof. Ola Jabali).
- 2022 – 2024 Shi Jianli, Post-doctoral Fellow (Completed), Politecnico di Milano, Co-Supervisor (Co-supervised with Prof. Ola Jabali).
- 2021 – 2022 Manuel Candiani, Master Thesis (Completed), Politecnico di Milano, Co-Supervisor (Co-supervised with Prof. Federico Malucelli).
- 2020 Guendalina Biava, Master Thesis (Completed), Politecnico di Milano, Co-Supervisor (Co-supervised with Prof. Federico Malucelli).

## Reviewer for International Journals

Networks, European Journal of Operational Research, INFOR, Transportation Science, Transportation Research Part B, IET Intelligent Transport Systems, Public Transport, Omega, INFORMS Journal on Computing, International Transactions in Operational Research, Transportation Research Part C.

## Reviewer for International Conferences

ISTDM, IEEE ITSC 2025

## Scholarships and Awards

- 2017–2021 “OPEN SUBJECT Research Field: SYSTEMS AND CONTROL - 33rd cycle” Ph.D. Scholarship, Italian Ministry of University and Research (MUR), *Politecnico di Milano*.
- 2017 “Thesis Abroad” Grant, *Politecnico di Milano*, Italy (academic year 2016/2017).
- 2011–2016 Italian National Research Council Scholarship (academic years 2011/2012, 2012/2013, 2013/2014, 2014/2015, and 2015/2016).
- 2011–2016 Partial Fees Exemption for Merit, *Politecnico di Milano*, Italy (academic years 2011/2012, 2012/2013, 2013/2014, 2014/2015, and 2015/2016).
- 2012 "Premio le migliori matricole dell'A.A. 2011/2012" (best freshmen of academic year award 2011/2012 of Politecnico di Milano).

## Internships and Schools

- 2019 8th Winter School on Network Optimization. Estoril, Portugal, January 14–18, 2019.
- 2018 13th EURO PHD Summer School on Multiple Criteria Decision Aiding/Making (MCDA/M). Chania, Greece, July 23–August 3, 2018.
- 2017 Joint Association for Constraint Programming and GDR Recherche Opérationnelle Summer School 2017 (ACPSS 2017). Porquerolles, France, September 18–22, 2017.
- 2017 Internship at Universitat Pompeu Fabra (UPF), Barcelona. *Topic*: Mathematical Models and Heuristic Algorithms for a Pick and Place Problem. Duration: two months.
- 2015 Internship at Queen Mary University, London. *Topic*: Change Detection Using Robust Principal Component Analysis. Duration: one month.

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## Technical Skills

Programming Language C/C++, C#, Matlab/Simulink, Python, Java, Julia.

Others AMPL, CPLEX callable libraries, Gurobi, SCIP, JuMP,  $\LaTeX$ , Matcont, Modelica, ORtools.

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## Language Skills

Italian Mother Tongue

English Fluent

French Beginner

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## Personal Interests

Traditional and digital drawing, Ceramics, Digital typography, and Interface design.