Last updated: 2025-09-09

BERNARDO MARTIN-IRADI

27/09/1993 San Sebastián, Spain

Address: Thurwiesenstrasse 9, 8037, Zürich

Contact: +41 76 75 93 099 | +34 628 91 10 55

E-mail: b.martiniradi@gmail.com

bernardo.martin-iradi@ivt.baug.ethz.ch

LinkedIn: linkedin.com/in/b-martin-iradi

EDUCATION

TECHNICAL UNIVERSITY OF DENMARK (DTU) **Copenhagen, Denmark**

PhD in Operations Research at DTU Management December 2019-January 2023

Title: Integration and collaboration in maritime logistics and other transportation areas

Supervisors: Prof. Dario Pacino and Prof. Stefan Røpke

- Design and implementation of OR methods in collaborative and integrated logistics with a focus on container terminal operations and passenger rail and road transport.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) **Cambridge, MA. USA.**

Visiting PhD student at MIT Sloan School of Management January-June 2022

Host: Prof. Alexandre Jacquillat

- Design and implementation of optimization methods for on-demand microtransit systems.

TECHNICAL UNIVERSITY OF DENMARK (DTU) **Copenhagen, Denmark**

MSc in Industrial Engineering and Management 2016-2018. *120 ECTS.* ***Avg grade 11/12***

- Specialized in Operations Research: Exact methods, Heuristics, Routing, Scheduling, etc.
- *Master thesis*: "Optimization in Railway Timetabling for regional and Intercity trains in Zealand" in collaboration with DSB.
  Supervisors: Prof. S. Røpke (DTU), Eng. F. Farina (DTU) and Eng. E. Linde (DSB). ***Grade: 12/12 (A)***

ETSEIB – POLYTECHNICAL UNIVERSITY OF CATALONIA (UPC-BarcelonaTech) **Barcelona, Spain**

MSc in Industrial Engineering 2015-2018. *120 ECTS*. ***Avg grade 8.75/10 - (top 2 of 247)***

- *Main Subjects*: Industrial Scheduling (awarded with honors), Transport systems, Quantitative Methods for Industrial Process Management, etc.

TECHNISCHE UNIVERSITÄT BERLIN (TUB) **Berlin, Germany**

Erasmus exchange semester 02-08/2015 including the fulfillment of the BSc thesis.

ETSEIB – POLYTECHNICAL UNIVERSITY OF CATALONIA (UPC-BarcelonaTech) **Barcelona, Spain**

BSc in Industrial Technology Engineering 2011-2015. *240 ECTS.* ***Avg grade 7/10***

- *Main Subjects*: Mathematics, Mechanics, Computer Science, Statistics, Project Management, Electronics.
- *Bachelor Thesis*: Decision Support for sustainable product design based on an automatized FEM analysis.
  Supervisors: Prof. R. Stark (TUB) and Eng. A. Pförtner (TUB).

EXPERIENCE

SWISS FEDERAL INSTITUTE OF TECHNOLOGY IN ZÜRICH (ETH) **Zürich, Switzerland**

Postdoctoral researcher From August 2023

- Postdoctoral researcher in management and control of dynamic capacity in shared mobility networks

Lecturer	*Transport Systems* (MSc)	Fall 2024
Teaching assistant	*Transport Systems* (MSc) and *Public Transport Design and Operations* (MSc)	Fall 2023

TECHNICAL UNIVERSITY OF DENMARK (DTU) **Copenhagen, Denmark**

Postdoctoral researcher February-July 2023

Doctoral researcher December 2019-January 2023

Main lecturer February-May 2023

- MSc course in *Supply Chain Analytics*. Number of students enrolled: ~150
  [3rd-best teaching evaluation among 9 courses in the Management Science division]

Teaching Assistant Four semesters during 2017-2021

- *Optimization using Metaheuristics*. Courses 2019-20 and 2020-21. Supporting Prof. Dario Pacino and Prof. Thomas Stidsen.
- *Large Scale Optimization using Decomposition Methods*. Course 2017-18. Supporting Prof. Stefan Røpke and Prof. Thomas Stidsen.
- *Introduction to Management Science*. Course 2017-18. Supporting Prof. Richard Lusby and Prof. Martin Kidd.

AMCS GROUP **Copenhagen, Denmark**

Routing Consultant October 2018- November 2019

- Leading company in software for route transport optimization. Consultancy work in the Operations department at the Routing division. Tasks involving implementation, customization and maintenance of static and dynamic route planning solutions.

RESEARCH INTERESTS

Mathematical optimization, Public/Freight transportation, Network Optimization, On-demand mobility, Maritime Logistics, Vehicle Routing, Heuristics, Column Generation, Cooperative Game Theory,

AWARDS & PRIZES

9th meeting - EURO working group on Vehicle Routing and Logistics optimization (VeRoLog) **Trento, Italy**
June 2025
VeRoLog Doctoral Dissertation Prize 2023. The prize distinguishes an outstanding PhD thesis on Operational Research methods applied to Vehicle Routing and Logistics Optimization.

ETSEIB – POLYTECHNICAL UNIVERSITY OF CATALONIA (UPC-BarcelonaTech) **Barcelona, Spain**
October 2018
***Best academic record in the MSc of Industrial Engineering, specialized in Industrial Management*.**
Award sponsored by Accenture.

PUBLICATIONS (authors in order of contribution)

[1] **Martin-Iradi, B**., Pacino, D., Røpke, S., 2024. An adaptive large neighborhood search for the multi-port continuous berth allocation problem. *European Journal of Operational Research, 316(1), 152-167.* https://doi.org/10.1016/j.ejor.2024.02.003

[2] **Martin-Iradi, B**., Pacino, D., Røpke, S., 2022. The Multiport Berth Allocation Problem with Speed Optimization: Exact Methods and a Cooperative Game Analysis. *Transportation Science, 56(4), 972-999.* https://doi.org/10.1287/trsc.2021.1112
[Best presentation Award at the 5th AIRO Young workshop, 2021]

[3] **Martin-Iradi, B**., Ropke, S., 2022. A column-generation based matheuristic for periodic and symmetric train timetabling with integrated passenger routing. *European Journal of Operational Research, 297(2), 511-531.* https://doi.org/10.1016/j.ejor.2021.04.041

[4] **Martin-Iradi, B**., Pacino, D., Røpke, S., 2022. The Multi-port Continuous Berth Allocation Problem with Speed Optimization. *In: de Armas, J., Ramalhinho, H., Voß, S. (eds) Computational Logistics. ICCL 2022. Lecture Notes in Computer Science, vol 13557. Springer, Cham.* https://link.springer.com/chapter/10.1007/978-3-031-16579-5_3

UNDER REVIEW

[5] **Martin-Iradi, B**, Schmid, A., Cummings, K., Jacquillat, A. A Double Decomposition Algorithm for Network Planning and Operations in Deviated Fixed-route Microtransit. Major revision in *Operations Research.*
[Finalists of the 2025 TSL Society Best Student Paper Award: Winner announced Oct. '25]

[6] **Martin-Iradi, B**., Corman, F., Geroliminis, N. On-demand multimodal transit planning with stochastic demand and heterogeneous fleet. Under review in *Transportation Research Part E: Logistics and Transportation Review.*

[7] Fuchs, F., **Martin-Iradi, B.**, Corman, F.. Optimizing Periodic Stability in Railway Timetables: A Microscopic Model for Networks with a Macroscopic Comparison. Minor revision in *Journal of Rail Transport Planning & Management.*
[2nd Best-paper Award and 1st Prize Young Research Award (Florian Fuchs) at RailDresden 2025]
[Honorable mention at the 2025 RAS Student Paper Competition at INFORMS '25]

[8] Fuchs, F., **Martin-Iradi, B.**, Corman, F. Solving Integrated Periodic Railway Timetabling with Satisfiability Modulo Theories: A Scalable Approach to Routing and Vehicle Circulation. Major revision in *European Journal of Operational Research.*

WORKING PAPERS

[9] Fuchs, F., **Martin-Iradi, B.**, Corman, F. A Logic-Based Benders Decomposition Approach for Cyclic Microscopic Timetabling. *Expected submission: Fall 2025.*

[10] Garcia, M. B. A., Meyer de Freitas, L., **Martin-Iradi, B.**, Corman, F. Potential travel time savings by better synchronization of long distance railway timetables. *Expected submission: Fall 2025*

[11] Fuchs, F., Dubach, T., Lordieck, J., Corman, F., **Martin-Iradi, B.** Logic-Based Benders and Mixed-Integer Programming for Railway Dispatching. *Expected submission: Fall 2025.*
[Runner-up of the DISPLIB 2025 competition on Train Dispatching]

CONFERENCES (contributed presentations)

The Multiport Berth Allocation Problem with Speed Optimization: Exact Methods and a Cooperative Game Analysis:

- **5th AIRO Young Workshop** – February, 2021 in Naples, Italy (Virtual)
- **EURO 2021** – July, 2021 in Athens, Greece (Presenter and Session chair)
- **IFORS 2021** – August, 2021 in Seoul, South Korea (Virtual)
- **ICCL 2021** – September, 2021 in Twente, Netherlands (Virtual)
- **2021 INFORMS Annual Meeting** – October, 2021 in Anaheim, CA, United States (Virtual)
- **TRISTAN XI** – June, 2022 in Mauritius.

An adaptive large neighborhood search for the multi-port continuous berth allocation problem:

- **EURO 2022** – July, 2022 in Espoo, Finland.

The Multi-port Continuous Berth Allocation Problem with Speed Optimization:

- **ICCL 2022** – September, 2022 in Barcelona, Spain

A Double Decomposition Algorithm for Network Planning and Operations in Deviated Fixed-route Microtransit:

- **2022 INFORMS Annual Meeting** – October, 2022 in Indianapolis, IN, United States
- **2023 INFORMS Annual Meeting** – October, 2023 in Phoenix, AR, United States
- **TRISTAN XII** – June, 2025 in Okinawa, Japan
- **ICSP 2025**– July, 2025 in Paris, France

On-demand multimodal transit planning with stochastic demand and heterogeneous fleet:

- **STRC 2024** – May, 2024 in Monte Verità, Switzerland (Presenter and Session chair)
- **EURO 2024** – July, 2024 in Copenhagen, Denmark
- **TRC-30** – September, 2024 in Heraklion, Greece (Presenter and reviewer)
- **TRISTAN XII** – June, 2025 in Okinawa, Japan

Optimizing Periodic Stability in Railway Timetables:

- **TRISTAN XII** – June, 2025 in Okinawa, Japan

INVITED SEMINAR PRESENTATIONS

The Multiport Berth Allocation Problem with Speed Optimization:

- **Guest lecture in Transport Optimization (MSc course)** – May, 2021 in *DTU* in Copenhagen, Denmark

A Double Decomposition Algorithm for Network Planning and Operations in Deviated Fixed-route Microtransit:

- **IVT – Transport Systems seminar** – September, 2023 in *ETH Zurich*, Switzerland
- **Invited seminar presentation** – February, 2024 in *Universitat Pompeu Fabra* in Barcelona, Spain
- **Invited seminar presentation** – November, 2024 in *ESADE Business School* in Barcelona, Spain

On-demand multimodal transit planning with stochastic demand and heterogeneous fleet:

- **DADA project closing event** – May, 2024 in *ETH Zurich*, Switzerland
- **IVT – Transport Systems seminar** – September, 2025 in *ETH Zurich*, Switzerland

REVIEWER (journals in alphabetical order)

Annals of Operations Research; **C**omputers and Operations Research; **E**uropean Journal of Operational Research; **J**ournal of Heuristics; **N**aval Research Logistics, **N**etworks; **R**AIRO-Operations Research; **T**ransportation Research Part B: Methodological; **T**ransportation Research Part C: Emerging technologies; **T**ransportation Research Part E: Logistics and Transportation Review; **T**ransportation Science; **T**ransportmetrica A: Transport Science;

GRANTS & SCOLARSHIPS

ETH Mobility Initiative: *RaDiCa – Modeling the Impact of Digitalization on Railway Capacity* (**220.700 CHF**) Funding for a 4-year project. Proposal written together with Prof. Francesco Corman. 2025

Grants to support international research stays and conferences:

- **Reinholdt W. Jorck og Hustrus Fond** 2022. Research stay at MIT Sloan. **20.000 DKK (2.700 €)**
- **Stibofonden** 2022. Research stay at MIT Sloan. **30.000 DKK (4.000 €)**
- **Otto Mønsteds Fond** 2022. Research stay at MIT Sloan. **20.000 DKK (2.700 €)**
- **Otto Mønsteds Fond** 2022. TRISTAN XI conference in Mauritius. **7.500 DKK (1.000 €)**

LANGUAGES

SPANISH, BASQUE: Native. **ENGLISH**: Fluent. **GERMAN, FRENCH, SWEDISH, DANISH**: Basic understanding.

IT AND PROGRAMMING SKILLS

PROGRAMMING: Julia (+++), Python (++), GAMS (++), Java (++), SQL (++), C# (++), MatLab (++), XSL (++), R (+).

SOFTWARE & OTHERS: Microsoft Office, LaTeX, Slurm, Simulink, Minitab, CAD Software

INTERESTS

SPORTS: Active basketball player, daily cyclist and occasional squash player. Way of Saint James (800km France-Spain) by bike in 9 days (2012).

LEISURE: Cinema enthusiast, modern art and architecture admirer, avid reader, curious traveler, sporadic dancer and former clarinetist.

OTHERS: Member of INFORMS, and the Danish (DORS) and Spanish (SEIO) societies of Operations Research.

REFERENCES

Stefan Røpke (ropke@dtu.dk) – PhD advisor and MSc thesis supervisor
Prof. of Operations Research, Technical University of Denmark (DTU)

Dario Pacino (darpa@dtu.dk) – PhD advisor
Assoc. Prof. of Operations Research, Technical University of Denmark (DTU)

Alexandre Jacquillat (alexjacq@mit.edu) – Host during PhD research visit
Assoc. Prof. of Operations Research, Massachusetts Institute of Technology (MIT)

Francesco Corman (francesco.corman@ivt.baug.ethz.ch) – Postdoc advisor
Assoc. Prof. of Transport Systems, ETH Zurich