



Sebastian Birolini

● WORK EXPERIENCE

2023 – CURRENT Bergamo, Italy

ASSISTANT PROFESSOR (RTDA) UNIVERSITY OF BERGAMO, MOST, NATIONAL CENTER FOR SUSTAINABLE MOBILITY

- Research: my research primarily revolves around the development and advancement of predictive and prescriptive analytics techniques. In particular, my expertise lies in the estimation and analysis of passenger demand, as well as its integration into optimization models. I focus on designing efficient resource allocation strategies and developing models for vehicle scheduling, assignment, and routing toward enhancing the overall efficiency and sustainability of transport systems.
- Teaching: Sustainable Mobility Management / Principles of Accounting and Finance

2021 – 2023 Bergamo, Italy

POSTDOCTORAL RESEARCHER, AIR TRANSPORT AND SMART URBAN MOBILITY UNIVERSITY OF BERGAMO, ICCSAI TRANSPORT AND SUSTAINABLE MOBILITY (ITSM) RESEARCH CENTER

- Research projects in the field of transport planning, along three main directions: (i) the use of machine learning to predict delays and proactively bring robustness into tail assignment decisions; (ii) network design and planning of subsidized and regional routes using electric aircraft; (iii) and the development of a time-space-energy modeling approach to address charging infrastructure and fleet sizing decisions.
- Research fellowship was funded within the "Future of mobility" program—a multi-year research collaboration with Harvard GSD in the areas of transport and mobility.

2017 – CURRENT Bergamo

RELEVANT CONSULTING EXPERIENCE IN TRANSPORT ANALYSIS AND PLANNING AS PART OF THE ITSM RESEARCH CENTER AT THE UNIVERSITY OF BERGAMO

Involvement in various consulting projects as either scientific coordinator(*) or senior researcher in the field of transport planning and analysis for major players in the transportation sector such as:

- *Strategic advisory for the Cost-Effectiveness Analysis (CEA) of mitigation measures to be implemented at Amsterdam Schiphol airport (Royal Schiphol Group, 2023-2024)
- *Development of an optimization model for the flight-check in allocation problem (SACBO / BGY) 2023
- *Mobility management at the (A.S.S.T BG EST, 2023)
- *Assessment of peak-spreading strategies through capacity declaration at Amsterdam Schiphol airport (Royal Schiphol Group, 2023)
- *Impact assessment of capacity reduction at Amsterdam Schiphol airport: Network and societal implications (Royal Schiphol Group, 2022)
- Development of a set of indicators and a decision-support tool for analyzing instances of limitation related to the number of ground handlers at airport terminals (ENAC, 2023)
- Contributor to the ICCSAI Aviation Factbook (ICCSAI/ITSM, 2017-Ongoing)
- Assessment of the potential demand and incentives for modal shift to promote bicycle usage as a commuting mode in the Bergamo province (Regione Lombardia, 2022)
- Demand and connectivity modeling for the Italian National Airport System Masterplan (ENAC, 2021)
- Study on the Cost of non-Europe in aviation (CONEA) (Airlines for Europe, 2019)
- On the applicability of yardstick regulation to Italian airports (Assaeroporti, 2018)
- Comprehensive assessment of the competitive landscape of Italian airports (Assaeroporti, 2017)

● EDUCATION AND TRAINING

10/2017 – 03/2021 Bergamo, Italy

PHD IN TECHNOLOGY AND INNOVATION MANAGEMENT University of Bergamo / University of Naples Federico II

- PhD Scholaschip funded by SACBO (Milan-Bergamo Airport)
- Visiting Scholar at the Research Center on Territory, Transport, and Environment (CITTA) at the University of Coimbra (Portugal) [Mar-Sept 2019]

Final grade Graduated with excellence / Best PhD Dissertation by the Aviation Application Section - INFORMS |

Thesis Modeling of Supply-Demand Interactions in the Optimizatiton of Air Tranport Networks

10/2015 – 09/2017 Bergamo, Italy

MSC IN MANAGEMENT ENGINEERING University of Bergamo

- Short-term visiting student at ISyE at Georgia Tech (US)-Computational Management and Applications (2016-2017)
- Short-term visiting student at Harvard GSD (US)-Real Cities - Bergamo 2.035 | Smarter Citizens (2017)

Final grade 110L

10/2012 – 09/2015 Bergamo, Italy

BSC IN MANAGEMENT ENGINEERING University of Bergamo

Final grade 110L

● LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C2	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Python | Microsoft Excel | Microsoft Office | Microsoft Powerpoint | Geographical Informational Systems (GIS) | Visual Analytics Tools: Tableau, PowerBI | R | Latex

● ADDITIONAL INFORMATION

TEACHING EXPERIENCE

2023 – CURRENT

Sustainable Mobility Management

MSc Management Engineering (in English), University of Bergamo

2023

Principles of Accounting and Finance

BSc Computer Engineering, University of Bergamo

Principles of Accounting and Finance (Teaching Assistant)

BSc Mechanical Engineering, University of Bergamo (2022-2023)

BSc Computer Engineering, University of Bergamo (2020-2022)

BSc Mechanical Engineering, University of Bergamo (2016-2017)

BSc Management Engineering, University of Bergamo

PUBLICATIONS

Assessing airport ground access interventions: An integrated approach combining mode choice modeling and microscopic traffic simulation

– 2024

Transport Policy, 148, 154-167

Avogadro N., Birolini, S., Redondi R., Deforza P.

Link <https://www.sciencedirect.com/science/article/pii/S0967070X24000131>

Day-ahead Aircraft Routing with Data-driven Primary Delay Predictions – 2023

European Journal of Operational Research, 310(1), 379-396.

Birolini, S., Jacquillat, A.

Link <https://www.sciencedirect.com/science/article/abs/pii/S0377221723001698>

Electric Aircraft Charging Network Design for Regional Routes: A Novel Mathematical Formulation and Kernel Search Heuristic

– 2023

European Journal of Operational Research. 309(3), 1300-1315.

Kinene, A., Birolini, S., Cattaneo, M., & Granberg, T. A.

Link <https://www.sciencedirect.com/science/article/pii/S037722172300125X>

A latent class approach to estimate air travelers' propensity toward connecting itineraries – 2023

Research in Transportation Economics, 99, 101283.

Morlotti, C., Birolini, S., Malighetti, P., & Redondi, R.

Link <https://www.sciencedirect.com/science/article/pii/S0739885923000239>

A space-time-energy flow-based integer programming model to design and operate a regional shared automated electric vehicle (SAEV) system and corresponding charging network

– 2023

Transportation Research Part C: Emerging technologies, 147.

Santos, G. G. D., Birolini, S., de Almeida Correia, G. H.

Link <https://www.sciencedirect.com/science/article/pii/S0968090X22004107>

Passenger-centric slot allocation at schedule-coordinated airports – 2023

Transportation Science, 57

Birolini, S., Jacquillat A., Schmedeman P., Ribeiro N.

Link <https://pubsonline.informs.org/doi/abs/10.1287/trsc.2022.1165?journalCode=trsc>

An auction framework for assessing the tendering of subsidised routes in air transportation – 2022

Transportation Research Part A: Policy and Practice, 159.

Kinene, A., Granberg TA., Birolini, S., Adler N., Polishchuk V., Skoglund JM.

Link <https://www.sciencedirect.com/science/article/pii/S0965856422000490>

An Integrated Connection Planning and Passenger Allocation Model for Low-Cost Carriers – 2022

Journal of Air Transport Management, 99.

Birolini, S., Besana, E., Cattaneo, M., Sallan, J.M., Redondi, R.

Link <https://www.sciencedirect.com/science/article/abs/pii/S0969699721001411>

Airline network planning: Mixed-integer non-convex optimization with demand-supply interactions

– 2021

Transportation Research Part B: Methodological, 154.

Birolini, S., Jacquillat, A., Cattaneo, M., Antunes, A. P.

Link <https://www.sciencedirect.com/science/article/abs/pii/S0191261521001703>

Integrated flight scheduling and fleet assignment with improved supply-demand interactions – 2021

Transportation Research Part B: Methodological, 149.

Birolini, S., Antunes, A. P., Cattaneo, M., Malighetti, P., \& Paleari, S.

Link <https://www.sciencedirect.com/science/article/abs/pii/S0191261521000801>

Integrated origin-based demand modeling for air transportation – 2020

Transportation Research Part E: Logistics and Transportation Review, 142, 102050.

Birolini, S., Cattaneo, M., Malighetti, P., \& Morlotti, C.

Link <https://www.sciencedirect.com/science/article/abs/pii/S1366554520307018>

Access mode choice to low-cost airports: Evaluation of new direct rail services at Milan-Bergamo airport

– 2019

Transport Policy, 73, 113-124.

Birolini, S., Malighetti, P., Redondi, R., \& Deforza, P.

Link <https://www.sciencedirect.com/science/article/abs/pii/S0967070X18301756>

Connectivity measures and passengers' behavior: Comparing conventional connectivity models to predict itinerary market shares

– 2021

Journal of Air Transport Management, 90, 101958.

Redondi, R., Birolini, S., Morlotti, C., \& Paleari, S.

Link <https://www.sciencedirect.com/science/article/abs/pii/S096969972030541X>

Introducing connecting flights in LCCs' business model: Ryanair's network strategy – 2020

Journal of Air Transport Management, 87, 101849.

Morlotti, C., Birolini, S., Cattaneo, M., & Redondi, R.

Link <https://www.sciencedirect.com/science/article/abs/pii/S0969699719305757>

The geography of suppliers and retailers – 2020

Journal of Purchasing and Supply Management, 26(4), 100626.

Kalchschmidt, M., Birolini, S., Cattaneo, M., Malighetti, P., & Paleari, S.

Link <https://www.sciencedirect.com/science/article/abs/pii/S1478409220300790>

Yardstick Regulation in a Competitive Context? The Case of the Italian Airports – 2020

Competition and Regulation in Network Industries, 21(3), 244-274.

Avogadro, N., Birolini, S., Cattaneo, M., Malighetti, P., Morlotti, C., \& Redondi, R.

Link <https://journals.sagepub.com/doi/abs/10.1177/1783591720936977?journalCode=crna>

HONOURS AND AWARDS

2021

TSL Cross Regional Grant, INFORMS – Transportation Science and Logistics Society (TSL)

2021

Best PhD Dissertation Award – Aviation Applications Section (AAS) - INFORMS

Link <https://connect.informs.org/aas/awards/dissertation-prize>

2021

Runner-Up, Best Paper Award – Air Transport Research Society Awarded paper: "Passenger-centric Slot Allocation at Schedule Coordinated Airports"

Link <https://www.atrsworld.org/2021>

2020

Best Paper Award – Journal of Purchasing and Supply Chain Management Awarded paper: "The Geography of Suppliers and Retailers"

2019

Best Student Paper Award – Air Transport Research Society Awarded paper: "Integrated Origin-Based Demand Modeling for Air Transportation"

Link <https://www.atrsworld.org/2019>

2018

Best Graduate in Management Engineering – University of Bergamo / LUBERG

Link <https://www.luberg.it/eccellenze/proclamazione-neolaureati-dellanno-premio-agli-studi-2/>

2023

Editor's Choice Article – European Journal of Operational research Awarded paper: "Electric Aircraft Charging Network Design for Regional Routes: A Novel Mathematical Formulation and Kernel Search Heuristic"

Link <https://www.sciencedirect.com/journal/european-journal-of-operational-research/about/highlighted-articles>

CONFERENCES AND SEMINARS

List of conference presentations

- 1st Workshop on Data and Transportation Science Cooperation (DATRASCOOP) (Marbella, Spain) [2023]
- 25th ATRS World Conference (Kobe, Japan) [2023]
- INFORMS Annual Meeting (Indianapolis, US) [2022]
- 25th ATRS World Conference (Antwerp, Belgium). [2022]
- 31st EURO Conference (Espoo, Finland) [2022]
- INFORMS Annual Meeting (Anaheim, US/Virtual) [2021]
- AiIG Annual Meeting (Naples, Italy/Virtual) [2021]
- 60th AGIFORS Annual Symposium Conference (Virtual) [2021]
- 24th EWGT Conference (Aveiro, Portugal/Virtual) [2021]
- 24th ATRS World Conference (Sidney, Australia/Virtual). [2019]
- 31st EURO Conference (Athens, Greece/Virtual) [2021]
- INFORMS (TSL) Workshop (Rotterdam, The Netherlands/Virtual) [2021]
- 1st SOAR Symposium (Porto, Portugal) [2020]
- AiIG Annual Meeting (Turin, Italy) [2019]
- INFORMS Annual Meeting (Seattle, US) [2019]
- 12th CITTA International Conference (Porto, Portugal) [2019]
- 23rd ATRS World Conference (Amsterdam, The Netherlands). [2019]
- ITEA International Conference (Paris, France). [2019]
- AiIG Annual Meeting (Varese, Italy) [2018]
- ATARD PhD Workshop (Poznan, Poland) [2018]
- 22nd ATRS World Conference (Seoul, South Korea). [2018]
- University of Bath - Research seminar (Bath, UK) [2018]
- 14th IARO Workshop (Bergamo, Italy). [2017]
- 21nd ATRS World Conference (Antwerp, Belgium). [2017]

EDITORIAL EXPERIENCE AND REVIEWING ACTIVITIES

2023 – 2024

Guest Editor / Socio-Economic Planning Sciences

Guest Editor for Socio-Economic Planning Sciences for the special Issue: "Predictive and prescriptive analytics for service reorganization in times of transition"

2023 – CURRENT

Member of the Editorial Board / Transportation Research Part C: Emerging Technologies

Editorial Advisor for Transportation Research Part C: Emerging Technologies

2018 – CURRENT

Reviewer for major academic journals

- Transportation Research Part A: Policy & Practice
- Transportation Research Part B: Methodological
- Transportation Research Part C: Emerging Technologies
- Transportation Research Part D: Transport and Environment
- Transportation Research Part E: Logistic and Transportation review
- Transportation Science
- European Journal of Operational Research
- Omega
- Journal of Air Transport Management
- IEEE: Transactions on Intelligent Transportation Systems
- IEEE Access
- Reliability Engineering & System Safety
- Transport Policy

NETWORKS AND MEMBERSHIPS

2021 – CURRENT

Officer / Aviation Applications Section (AAS) INFORMS

- Committee Member Best PhD Dissertation Award (2023 - 2024)
- Chair of Best Paper Competition (2022-2023)
- Cluster Chair (2021-2022)

Memberships

- Institute for Operations Research and the Management Sciences (INFORMS)
- Transportation Science and Logistics of INFORMS (TSL)
- Aviation Applications Section of INFORMS (AAS)
- Association of the European Operational Research Societies (EURO)
- Research Centre for Territory Transports and Environment (CITTA)
- Airline Group of the International Federation of Operational Research Societies (AGIFORS)
- Associazione Italiana di Ingegneria Gestionale (AiIG)
- Associazione Italiana di Ricerca Operativa (AIRO)