

PERSONAL INFORMATION



Lorenzo Castelli

📍 Dipartimento di Ingegneria e Architettura – Università degli Studi di Trieste
Via A. Valerio 10, 34127 Trieste, Italy

☎ +39 040 558 3416 📠 +39 347 2257190

✉ castelli@units.it

🌐 www.units.it/castelli

Sex Male | Date of birth 03/07/1969 | Nationality Italy

CURRENT ACADEMIC RESPONSABILITIES

17.12.2019 – today Associate Professor in Operations Research
University of Trieste, Italy
Research, teaching, PhD, master and bachelor student supervision, project management

ACADEMIC QUALIFICATIONS AND PREVIOUS POSTS

31.07.2018 – 31.08.2024 Coordinator of master course in Computer and Electronic Engineering
University of Trieste, Italy

01.03.2005 - 16.12.2019 Assistant Professor in Operations Research,
University of Trieste, Italy
Research, teaching, PhD, master and bachelor student supervision, project management

01.11.2000 - 28.02.2005 Research fellowship (Assegno di Ricerca)
University of Trieste, Italy
Operations research, optimisation

May to September 2004 Scholarship from AREA Science Park (Trieste, Italy) to attend as Research Fellow the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology (MIT), Cambridge, MA, USA. Guest of prof. A. Odoni. Air transportation, Revenue management, air traffic management

February 2002 Ph.D. in Transportation
University of Trieste, Italy
Thesis title: "Bilevel linear programming models and algorithms for freight transportation".

April 1997 Master Degree (Laurea) in Electronics, Summa cum Laude
University of Trieste, Italy
Object-oriented simulation, scheduling, planning

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English C1, French C2

ADDITIONAL INFORMATION

GRANTS AND RESEARCH FUNDS

1. SITE - Shaping inclusive tourist experiences, funded by the EU under the 2021-2027 Interreg VI Italy - Croatia Programme, Mar 24 - Aug 26. **Project coordinator**
2. Green-GEAR - Green operations with Geometric altitude, Advanced separation and Route charging Solutions, funded by the EU under the Horizon Europe Programme, call HORIZON-SESAR-2022-DES-ER-01, Sep 23 - Feb 26.
3. Engage 2 - The SESAR 3 Knowledge Transfer Network, funded by the EU under the Horizon Europe Programme, call HORIZON-SESAR-2022-DES-ER-01, Jun 23 - May 27.
4. BEACON - Behavioural economics for ATM concepts, funded by the EU under the Horizon 2020 Programme, call H2020-SESAR-2019-2, Jul 20 - Dec 22
5. E-Chain - Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network, funded by the EU under the 2014-2020 Interreg V-A Italy - Croatia CBC Programme, Jan 19 - Jun 22.
6. Engage - Knowledge Transfer Network, funded by the EU under the Horizon 2020 Programme, call H2020-SESAR-2016-2, Jan 18 - Jun 22.

7. ADAPT - Advanced prediction models for flexible trajectory-based operations, funded by the EU under the Horizon 2020 Programme, call H2020-SESAR-2016-2, Jan 18 - Dec 19. **Project coordinator.**
8. Domino - Novel tools to evaluate ATM systems coupling under future deployment scenarios, funded by the EU under the Horizon 2020 Programme, call H2020-SESAR-2016-2, Jan 18 - Dec 19.
9. UDPP - User Driven Prioritisation Process project funded by Advanced Logistics Group (ALG), Sep 14 - Oct 16.
10. SATURN - Strategic Application of Traffic Using Redistribution in the Network, funded by SESAR WPE Long Term and Innovative Research, Jun 13 - Jan 16. **Project coordinator.**
11. ACCESS - Application of Agent-Based Computational Economics to Strategic Slot Allocation, funded by SESAR WPE Long Term and Innovative Research, May 13 - Jan 16.
12. T-TRANS - Enhancing the transfer of Intelligent Transportation System innovations to the market, funded by the EU under the 7th Framework Programme, Sep 12 - Nov 14.
13. Enhancing the European Air Transportation System funded by the Italian Ministry of Education, University and Research, Mar 10 - Sep 12.
14. Technical specification for the development of Economical Metrics in support of mathematical ATC Simulations funded by EUROCONTROL CRDS, Dec 07 - Jul 09.
15. CATS - Contract-based Air Transportation System, funded by the EU under the 6th Framework Programme, Nov 07 - Nov 10.
16. BLUE MED feasibility study co-funded by EC DG TREN within the TEN-T program, Dec 06 - Jun 08.
17. Efficiency evaluation of metabolic network through mathematical programming models and methods funded by the University of Trieste, Sep 06 - Feb 08.
18. Study on alternative route charges scenarios for a Mediterranean FAB funded by the Italian research consortium SICTA - Advanced Systems for Air Traffic Control, Nov 05 - May 06.

PAPERS ON JOURNALS

1. E. M. Bertolini, C. Caramuta, L. Castelli, G. Longo, C. Vidulli (2025) May info-mobility solutions contribute to increase sustainable transport connectivity? Lessons learned from the E-CHAIN project, *Transportation Research Procedia*, 83, 110-117.
2. A. Gasparin, L. Castelli, T. Bolić, G. Gurtner, N. Pilon (2025) A User-Driven Prioritisation Process implementation and optimisation for ATFM hotspot resolution, *Transportation Research Part C: Emerging Technologies*, 170, 104894.
3. A. Gasparin, F. J. Camerota Verdù, D. Catanzaro, L. Castelli (2023) An evolution strategy approach for the Balanced Minimum Evolution Problem, *Bioinformatics*, 39 (11), btad660.
4. I. Brugnara, L. Castelli, R. Pesenti (2023) A market mechanism for multiple air traffic resources, *Transportation Research Part E: Logistics and Transportation Review*, 178, 103255.
5. T. Bolić, L. Castelli, A. De Lorenzo, F. Vascotto (2022) Trajectory Clustering for Air Traffic Categorisation, *Aerospace*, 9(5), 227
6. T. Bolić, L. Castelli, G. Scaini, G. Frau, S. Guidi (2021) Flight flexibility in strategic traffic planning: visualisation and mitigation use case, *CEAS Aeronautical Journal*, 12, 847-862.
7. T. Bolić, L. Castelli, L. Corolli, G. Scaini (2021) Flexibility in strategic flight planning, *Transportation Research Part E: Logistics and Transportation Review*, 154, 102450.
8. S. Zaoli, G. Scaini, L. Castelli (2021) Community detection for air traffic networks and its application in strategic flight planning, *Sustainability (Switzerland)*, 13 (16), 8924.
9. L. Delgado, G. Gurtner, T. Bolić, L. Castelli (2021), Estimating economic severity of Air Traffic Flow Management regulations, *Transportation Research Part C*, 125, 103054.
10. P. Pellegrini, T. Bolić, L. Castelli, R. Pesenti (2017), SOSTA: an effective model for the Simultaneous Optimisation of airport Slot Allocation, *Transportation Research Part E*, 99, 34-53.
11. T. Bolić, L. Castelli, L. Corolli, D. Rigonat (2017), Reducing ATFM delays through Strategic Flight Planning, *Transportation Research Part E*, 98, 42-59.
12. T. Bolić, L. Castelli, D. Rigonat (2017), Peak-load pricing for the European Air Traffic Management system using modulation of en-route charges, *European Journal of Transport and Infrastructure Research*, 17 (1), 136-152.
13. L. Castelli, M. Labbé, A. Violin (2017) Network Pricing Problem with Unit Toll, *Networks*, 69 (1), 83-93.
14. L. N. Nkamba, J. M. Ntaganda, H. Abboubakar, J. C. Kamgang, L. Castelli (2017) Global Stability of a SVEIR Epidemic Model: Application to Poliomyelitis Transmission Dynamics, *Open Journal of Modelling and Simulation*, 5 (1), 98-112.
15. L. Castelli, R. Pesenti, D. Segrè (2016) The cell as a decision-making unit, *IEEE Life Sciences Letters*, 2 (3), 27-30.
16. A. Bagula, L. Castelli, M. Zennaro (2015) On the Design of Smart Parking Networks in the Smart Cities: An Optimal Sensor Placement Model, *Sensors*, 15 (7), 15443-15467.
17. C. Scaini, T. Bolić, A. Folch, L. Castelli (2015) Civil aviation management during explosive volcanic eruptions: a survey on the stakeholders' perspective on the use of tephra dispersal models, *Journal of Volcanology and Geothermal Research*, 294, 25-36.
18. C. Scaini, A. Folch, T. Bolić, L. Castelli (2014) A GIS-based tool to support air traffic management during explosive volcanic eruptions, *Transportation Research Part C*, 49, 19-31
19. L. Castelli, M. Labbé, A. Violin (2013) A Network Pricing Formulation for the Revenue Maximization of European Air Navigation Service Providers, *Transportation Research Part C*, 33, 214-226.
20. P. Pellegrini, L. Castelli, R. Pesenti (2012) Metaheuristic Algorithms for the Simultaneous Slot Allocation Problem, *IET Intelligent Transport Systems*, 6 (4), 453-462.
21. P. Pellegrini, L. Castelli, R. Pesenti (2012) Secondary Trading of Airport Slots as a Combinatorial Exchange, *Transportation Research Part E*, 48 (5), 1009-1022.
22. L. Castelli, R. Pesenti, A. Ranieri (2012) Short-term allocation of Time Windows to flights through a distributed market-based mechanism, *Journal of Aerospace Operations*, 1 (1-2), 29-40.
23. L. Castelli, P. Pellegrini, R. Pesenti (2012) Airport Slot Allocation in Europe: economic efficiency and fairness, *International Journal of Revenue Management*, 6 (1-2), 28-44.
24. L. Castelli, L. Corolli, G. Lulli (2011). Critical Flights Detected with Time Windows, *Transportation Research Record (TRR)*, *Journal of the Transportation Research Board*, 2214, 103 - 110.
25. L. Castelli, R. Pesenti, A. Ranieri (2011) The Design of a Market Mechanism to Allocate Air Traffic Flow Management Slots, *Transportation Research Part C*, 19 (5), 931 - 943.
26. L. Castelli, P. Pellegrini (2011) An AHP Analysis of Air Traffic Management with Target Windows, *Journal of Air Transport Management*, 17 (2), 68 - 73.

27. R. Jovanović, L. Castelli, O. Babić, V. Tošić (2010) Effects on airline costs of different air traffic management scenarios: an assessment method based on fast-time simulation outputs, *International Journal of Transport Economics*, 37 (3), 327 – 352.
28. L. Castelli, R. Pesenti, W. Ukovich (2010) A classification of DEA models when the internal structure of the Decision- Making Units is considered, *Annals of Operations Research*, 173 (1), 207-235.
29. L. Castelli, P. Debels, W. Ukovich (2005) Route charging policies for a central European Cross-Border Upper Airspace, *Journal of Air Transport Management*, 11 (6), 432 - 441.
30. L. Castelli, G. Longo, R. Pesenti, W. Ukovich (2004) Two-Player Noncooperative Games over a Freight Transportation Network, *Transportation Science*, 38 (2), 149 - 159.
31. L. Castelli, R. Pesenti, W. Ukovich (2004) Scheduling multimodal transportation systems, *European Journal of Operational Research*, 155, 603 - 615.
32. L. Castelli, R. Pesenti, W. Ukovich (2004) DEA-like models for the Efficiency Evaluation of Hierarchically Structured Units, *European Journal of Operational Research*, 154, 465 - 476.
33. L. Castelli, R. Pesenti, W. Ukovich (2001) DEA-like models for efficiency evaluation of specialized and interdependent units, *European Journal of Operational Research*, 132, 274-286.

MEMBER OF THE PROGRAM COMMITTEE FOR THE FOLLOWING CONFERENCES

1. 15h SESAR Innovation Days, 1-4 December 2025, Bled, Slovenia.
2. 1st Air Transportation Research and Development Symposium (ATRDS), 24-27 June 2025, Prague, Czech Republic.
3. 14th SESAR Innovation Days, 12-15 November 2024, Rome, Italy
4. 11th International Conference on Research in Air Transportation (ICRAT), 1-4 July 2024, Singapore
5. 13th SESAR Innovation Days, 28-30 November 2023, Seville, Spain
6. 12th SESAR Innovation Days, 6-8 December 2022, Budapest, Hungary
7. 10th International Conference on Research in Air Transportation (ICRAT), 19-23 June 2022, Tampa, FL.
8. 3rd Symposium on Aviation Research (SOAR), 7-9 April 2022, Bergamo, Italy
9. 11th SESAR Innovation Days, 6-9 December 2021, Virtual conference
10. 10th International Conference on Air Transport - INAIR 2021, 3-4 November 2021, Malta
11. 2nd Symposium on Aviation Research (SOAR), 5-6 February 2021, Virtual conference
12. 10th SESAR Innovation Days, 8-10 December 2020, Virtual conference
13. 9th International Conference on Air Transport - INAIR 2020, 4-5 November 2020, Virtual conference
14. 9th International Conference on Research in Air Transportation (ICRAT), 23-26 June 2020, Tampa, FL.
15. 1st Symposium on Aviation Research (SOAR), 23-25 January 2020, Oporto, Portugal.
16. 9th SESAR Innovation Days, 2-5 December 2019, Athens, Greece
17. 8th International Conference on Air Transport - INAIR 2019, 12-13 November 2019, Budapest, Hungary
18. Workshop on Agent based Applications for Air Transport (AAAT), 17th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS), 26-28 June 2019, Avila, Spain
19. 8th SESAR Innovation Days, 3-7 December 2018, Salzburg, Austria.
20. 7th International Conference on Air Transport - INAIR 2018, 20-21 November 2018, Hainburg a.d. Donau, Austria
21. 8th International Conference on Research in Air Transportation (ICRAT), 26-29 June 2018, Barcelona, Spain.
22. Workshop on Agent based Applications for Air Transport (AAAT), 16th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS), 20-22 June 2018, Toledo, Spain
23. 7th SESAR Innovation Days, 28-30 November 2017, Belgrade, Serbia.
24. International Conference on Air Transport - INAIR 2017, 14-16 November 2017, Prague, Czech Republic.
25. Workshop on Agent based Applications for Air Transport (AAAT), 15th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS), 21-23 June 2017, Porto, Portugal
26. 6th SESAR Innovation Days, 8-10 November 2016, Delft, The Netherlands.
27. 7th International Conference on Research in Air Transportation (ICRAT), 20-24 June 2016, Philadelphia, PA.
28. 5th SESAR Innovation Days, 1-3 December 2015, Bologna, Italy.
29. 4th SESAR Innovation Days, 25-27 November 2014, Madrid, Spain.
30. 6th International Conference on Research in Air Transportation (ICRAT), 26-30 May 2014, Istanbul, Turkey.
31. 3rd SESAR Innovation Days, 26-28 November 2013, Stockholm, Sweden.
32. 2nd SESAR Innovation Days, 27-29 November 2012, Braunschweig, Germany.
33. 5th International Conference on Research in Air Transportation (ICRAT), 22-25 May 2012, Berkeley, CA.
34. 1st SESAR Innovation Days, 29 November-1 December 2011, Toulouse, France.
35. 9th Innovative Research Workshop & Exhibition (INO), 7-9 December 2010, EUROCONTROL Experimental Center, Brétigny-sur-Orge, France.
36. 4th International Conference on Research in Air Transportation (ICRAT), 1-4 June 2010, Budapest, Hungary.
37. 3rd International Conference on Research in Air Transportation (ICRAT), 1-4 June 2008, Fairfax, VA.

SUPERVISION

Doctoral students

1. Fulvio Vascotto, *in progress*
2. Andrea Bertolini, *in progress*
3. Federico Juan Camerota Verdù, *Scaling combinatorial optimization neural improvement heuristics with online search and adaptation*, jointly supervised with Luca Bortolussi; 16 January 2025, University of Trieste.
4. Andrea Gasparin *PHYLOES An Evolution Strategies approach for the phylogenetic inference based on the Balanced Minimum Evolution Criterion*, jointly supervised with Daniele Catanzaro, Université Catholique de Louvain, Belgium; 2 February 2024, University of Trieste.
5. Stefano Costanzo, *An evolutionary multi-objective optimization framework for bi-level problems*, jointly supervised with Alessandro Turco, ESTECO; 26 May 2017, University of Trieste.
6. Desirée Rigonat, *Models and algorithms for an efficient market-driven management of European airspace demand*; 21 April 2016, University of Trieste
7. Alessia Violin, *Mathematical programming approaches to pricing problems*, jointly supervised with Martine Labbé; 18 December 2014, Université Libre de Bruxelles.

8. Andrea Ranieri, *Combinatorial Exchange Models for a User-Driven Air Traffic Flow Management in Europe*; 30 March 2010, University of Trieste.

Post-doc

- Tatjana Bolić.
 - 15.3.2018-15.3.2020. Development and assessment of new models and methodologies, including knowledge transfer, to enhance the performances of the European Air Traffic Management system.
 - 1.12.2013-30.11.2017. Development of economic incentive schemes for demand-capacity balancing in the European Air Traffic Management.
- Luca Corolli, 1.1.2014-28.12.2016. Development of congestion pricing mechanisms for the European Air Traffic Management under uncertainty.
- Alessia Violin, 1.11.2014-31.08.2015. Decentralised Network Pricing Problem for the European Air Traffic Management.
- Paola Pellegrini, 1.11.2008-31.10.2009. Business case for the economic valuation of trading protocols in the planning phase of Air Traffic Management

Research grant

- Fulvio Vascotto, 1.9.2021-31.08.2023. Development of a database infrastructure for the management of European air traffic data
- Elisa Bertolini, 1.11-2021-30.10.2022. Development and assessment of ticketing and service integration scenarios in a multi-stakeholder context
- Barbara Chiarelli, 3.9.2021-2.9.2022. Accessibility of spaces and services in port areas and layover for passengers with disabilities.
- Sara Carciotti, 1.6.2021-30.06.2022 Management of intermodal transport services in port areas for passenger and/or freight transport.
- Francesco Milesi, 1.8.2021-18.04.2022. Development and implementation of an open-source software for the generation of a university timetable
- Giovanni Scaini, 15.3.2018-14.4.2022. Development of mathematical optimisation formulations for the definition of a European strategic flight planning model.
- Margherita Cipriano, 5.2.2021-4.2.2022. Weather ship routing optimisation
- Paola Bassi, 1.6.2018-28.02.2021. Development of a database infrastructure for the management of European air traffic data.
- Efre Venturuzzo, 1.5.2016-30.04.2018. Multi-objective optimization of financial models.

AWARDS

- Best Innovation Paper, AGIFORS' 62nd Annual Symposium, Toulouse, 12-15 September 2022
- The SATURN project (see section "Grants and research funds") has been selected for presentation at the SESAR Showcase: A Conference & Exhibition of SESAR 1 Results, Amsterdam, 14-16 June 2016.
- Supervisor of Best Master Thesis in Operations Research in Italy for academic year 2009-10.
- Best Conference Paper, 1st International Air Transport and Operations Symposium (ATOS), Delft, The Netherlands, 14 - 15 April 2010.
- Best Paper in Session, 7th USA/EUROPE ATM 2007 R&D Seminar, Barcelona, Spain, 2-5 July 2007.
- Poster prize, 10th European Workshop on Efficiency and Productivity Analysis, Lille, France, June 27-30, 2007.
- Best Paper in Session, 1st International Conference on Research in Air Transportation (ICRAT), Zilina, Slovakia, November 22-24, 2004.

EDITORIAL AND REVIEW ACTIVITIES

Associate Editor

- Asia-Pacific Journal of Operational Research, September 2013 - today
- Journal of Aerospace Operations, 2011 – 2020.

Guest Editor of special issues

- Journal of Air Transport Management (2022), Research in ATM
- Journal of Air Transport Management (2021), Papers from SIDs 2019
- Journal of Air Transport Management (2016), 56 Part A. Long-term and Innovative Research in ATM.
- Journal of Aerospace Operations (2013), 2 (1-2). Selected papers from the SESAR Innovation Days 2011, 29 November -1 December 2011, Toulouse, France
- Journal of Aerospace Operations (2012), 1 (3). Selected papers from the 9th Innovative Research Workshop & Exhibition (INO), 7-9 December 2010, EUROCONTROL Experimental Center, Brétigny-sur-Orge, France.

Referee

4OR, Aerospace (3), Annals of Operations Research, Applied Computing and Informatics, Applied Geography (1), Applied Mathematical Modelling, Asian-Pacific Journal of Operational Research, Central European Journal of Operations Research, Computational and Applied Mathematics, Computational Management Science, Computers and Operations Research (2), Discrete Optimization, Electronic Commerce Research, Engineering, European Journal of Operational Research (21), Future Transportation (1), Heliyon (1), IEEE Transactions on Systems, Man and Cybernetics: Systems, IET Intelligent Transport Systems, Information Sciences (1), International Game Theory Review, International Journal of Information Technology and Decision Making, Journal of Advanced Transportation, Journal of Aerospace Engineering, Journal of Aerospace Operations, Journal of Air Transport Management (5), Journal of Mathematical Modelling and Algorithms, Journal of Productivity Analysis, Journal of Scheduling, Journal of the Operational Research Society, Mathematics and Computers in Simulation, Omega, Operations Research, Production and Operations Management, Public Transport, Research in Transportation Business & Management, Sustainability (2), The Service Industries Journal, Transportation Research Part A (3), Transportation Research Part B (7), Transportation Research Part C (2), Transportation Research Part E (8), Transportation Science, Transportmetrica, Transport Policy.

Other reviews

- 2024. PhD Dissertation, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore
- 2024. Organization for Women in Science for the Developing World (OWSD), UNESCO: OWSD Early Career Fellowship
- 2024. Transport Research Arena (TRA) Visions 2024 Young researcher competition
- 2023. Organization for Women in Science for the Developing World (OWSD), UNESCO: OWSD Early Career Fellowship

- 2022. PhD Dissertation, Doctorate program in Aerospace Science and Technology, Universitat Politècnica de Catalunya, Barcelona, Spain
- 2022. Organization for Women in Science for the Developing World (OWSD), UNESCO: OWSD PhD Fellowship
- 2021. Organization for Women in Science for the Developing World (OWSD), UNESCO: OWSD PhD Fellowship
- 2020. Organization for Women in Science for the Developing World (OWSD), UNESCO: OWSD Early Career Fellowship, OWSD PhD Fellowship, OWSD-Elsevier Foundation Awards
- 2019. Organization for Women in Science for the Developing World (OWSD), UNESCO: OWSD-Elsevier Foundation Awards
- 2019. PhD Dissertation, Department of Computer Science, University of Western Cape, South Africa
- 2018. PhD Dissertation, Doctorate program in Aerospace Science and Technology, Universitat Politècnica de Catalunya, Barcelona, Spain
- 2017. PhD Dissertation, Department of Mathematics, Indian Institute of Technology Kharagpur, West Bengal, India
- 2014. Master of Science Dissertation, Department of Computer Science, University of Cape Town, South Africa.
- 2014. Research project for Croatian Science Foundation (HRZZ).
- 2012. Master of Science Dissertation, Department of Computer Science, University of Cape Town, South Africa.
- 2012. Research project for Italian Ministry of Education, University and Research (MIUR).