

Alberto Santini

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Affiliations [Tenure-track assistant professor and “Juan de la Cierva” professor](#)
Department of Economics and Business, Universitat Pompeu Fabra, Spain

[Affiliate professor](#)
Barcelona Graduate School of Economics, Spain

Past Positions

JAN–AUG 2017 [RWTH Aachen, Germany](#)
Postdoctoral Researcher, under Prof. Michael Schneider
Deutsche Post Chair for the Optimisation of Distribution Networks

Education

2014–16 [University of Bologna, Italy](#)
PhD in Automatic Control and Operational Research
Supervisors: Silvano Martello, Daniele Vigo

2011–13 [University of Copenhagen, Denmark](#)
MSc in Mathematics, part of the Master of Excellence programme
Grade: 12/12

2008–10 [University of Catania, Italy](#)
BSc in Mathematics
Grade: 110/110 summa cum laude

2002–07 [Liceo Scientifico “A. Volta”, Caltanissetta, Italy](#)
Scientific Diploma
Grade: 100/100

Publications

Journal Papers (published or submitted)

- 2018
1. Enrico Malaguti, Silvano Martello, and Alberto Santini. “The Traveling Salesman Problem with Pickups, Deliveries, and Draft Limits”. In: *Omega* 74 (2018), pp. 50–58. doi: 10.1016/j.omega.2017.01.005
 2. Fabio Furini, Enrico Malaguti, and Alberto Santini. “An Exact Algorithm for the Partition Coloring Problem”. In: *Computers & Operations Research* 92 (2018), pp. 170–181. doi: 10.1016/j.cor.2017.12.019
 3. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. “A comparison of acceptance criteria for the Adaptive Large Neighbourhood Search metaheuristic”. In: *Journal of Heuristics* 24 (5 2018), pp. 783–815. doi: 10.1007/s10732-018-9377-x
 4. Alberto Santini. “An ALNS heuristic for the Orienteering Problem”. In: *Expert Systems with Applications* Under revision (2018)
- 2017
5. Alberto Santini, Stefan Ropke, and Christian E.M. Plum. “A branch-and-price approach to the Feeder Network Design Problem”. In: *European Journal of Operational Research* 264 (2 2017), pp. 607–622. doi: 10.1016/j.ejor.2017.06.063

6. Andrea Bettinelli, Alberto Santini, and Daniele Vigo. “A real-time conflict solution algorithm for the Train Rescheduling Problem”. In: *Transportation Research Part B* 106 (2017), pp. 237–265. doi: 10.1016/j.trb.2017.10.005
- 2015 7. Alberto Santini, Henrik Alsing Friberg, and Stefan Ropke. “A note on a model for quay crane scheduling with non-crossing constraints”. In: *Engineering Optimization* 47.6 (2015), pp. 860–865. doi: 10.1080/0305215X.2014.958731

Publications Journal Papers (in preparation)

- 2018 8. Christian Blum, Alberto Santini, Hua Jiang, Chu-Min Li, Felip Manyà, and Marko Djukanovic. “An exact algorithm for a large class of longest arc-preserving common subsequence problems”. In: *In preparation* (2018)
9. Eduardo Álvarez-Miranda, Elena Fernández, and Alberto Santini. “Algorithms for the postal zoning problem for packet delivery”. In: *In preparation* (2018)
10. Alberto Santini, Michael Schneider, Thibaut Vidal, and Daniele Vigo. “On the impact of decomposition strategies for solving large-scale Capacitated Vehicle Routing Problems”. In: *In preparation* (2018)

Technical Reports

- 2015 11. Valentina Cacchiani, Alberto Santini, and Daniele Vigo. *A study on metaheuristic approaches to the energy-efficient Train Timetabling Problem*. Tech. rep. OR-15-6. DEI, University of Bologna, 2015
- 2014 12. Valentina Cacchiani, Alberto Santini, and Daniele Vigo. *A novel modelling approach to the Train Timetabling Problem*. Tech. rep. OR-14-27. DEI, University of Bologna, 2014

Conference Talks

- 2018 13. Alberto Santini and Christian Blum. “Solving a class of longest subsequence problems via maximum cliques”. In: *ODS Conference*. 2018
14. Alberto Santini. “An ALNS heuristic for the Orienteering Problem”. In: *EURO Conference*. 2018
15. Alberto Santini. “A hybrid Machine Learning and ALNS approach to the Orienteering Problem”. In: *EURO/ALIO Conference*. 2018
- 2017 16. Fabio Furini, Enrico Malaguti, and Alberto Santini. “Exact and heuristic algorithms for the partition colouring problem”. In: *ODS Conference*. 2017
- 2016 17. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. “Poster: A comparison of acceptance criteria for the ALNS metaheuristic”. In: *AIRO Conference*. 2016
18. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. “A comparison of acceptance criteria for the Adaptive Large Neighbourhood Search metaheuristic”. In: *EURO Conference*. 2016
- 2015 19. Enrico Malaguti, Silvano Martello, and Alberto Santini. “A maritime version of the Travelling Salesman Problem”. In: *Odysseus Conference*. 2015
20. Alberto Santini, Stefan Ropke, and Christian E.M. Plum. “A rich maritime extension of the Vehicle Routing Problem”. In: *AIRO Conference*. 2015
- 2014 21. Enrico Malaguti, Silvano Martello, and Alberto Santini. “The Travelling Salesman Problem with pickup, delivery and draught limits”. In: *AIRO Conference*. 2014

Academic experience Organisation

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| JAN 2019 | Member of the Programme Committee “HM 2019”, the 11 th International Workshop on Hybrid Metaheuristics. Concepción, Chile. |
| 2018 | Founder Founded EUROYoung, a group of young O.R. scientists from EURO member countries, with the aim of organising training events for early-stage researchers. |
| 2016–18 | Coordinator Coordinator of AIROYoung, the youth chapter of the Italian Operational Research Association. During my tenure as coordinator, I organised three workshops and a Ph.D. school, securing funding from Italian and European institutions; I created a database of young talents in O.R. and of open positions, helping matching O.R. scientists with relevant opportunities; I helped enroll new young members into AIRO, from Italy and other European countries. |
| SEP 2018 | Member of the Organising Committee and Session Chair “ODS 2018” Conference. Chair of the “AIROYoung” session. Taormina, Italy. |
| JUN 2018 | Session Chair “EURO Young” session at the EURO 2018 Conference. Valencia, Spain. |
| JUN 2018 | Session Chair “AIROYoung” session at the EURO/ALIO 2018 Conference. Bologna, Italy. |
| MAR 2018 | Member of the Organising Committee The 2 nd AIROYoung Workshop, on the theme “Logistics optimisation and applied operational research”. Invited speakers: Geir Hasle and Roberto Roberti. Cosenza, Italy, 03–05 MAR 2018. |
| SEP 2017 | Session Chair “AIROYoung” session at the ODS 2017 Conference. Sorrento, Italy. |
| FEB 2017 | Workshop Organiser Organised, together with Lavinia Amorosi, the 1 st AIROYoung Workshop, on the theme “Emerging Optimization Problems on Complex Networks”. Invited speakers: Justo Puerto and Maria Grazia Scutellà. Rome, Italy, 16–17 FEB 2017. |
| 2016 | Founder Founder of AIROYoung, the youth chapter of the Italian Operational Research Association. |
| SEP 2016 | Poster Session Chair “Young OR Researchers Poster Session” at the AIRO 2016 Conference. Trieste, Italy. |
| JUL 2016 | Session Chair “Methodological advancements in metaheuristics” at the EURO 2016 Conference. Poznan, Poland. |
| 2016 | EURO Young Researchers OR Webinars Organiser Organised a series of OR webinars by and for young researchers from all over the world, sponsored by EURO. |
| SEP 2015 | Session Chair “Exact Methods for Routing Problems” at the AIRO 2015 Conference. Pisa, Italy. |
| 2015 | Seminars Organiser Organised of a series of doctoral seminars within the Operational Research group at DEI, University of Bologna, involving local and visiting researchers. |

Academic experience Teaching

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| 2019 | Practical Data Science for Operations Management Barcelona School of Management, Pompeu Fabra University, M.Sc. in Management. |
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| 2018 | Machine Learning RWTH Business School, M.Sc. in Data Analytics and Decision Science. |
| 2018 | Operations Management Pompeu Fabra University, Bachelor's in Business Management Administration. |
| 2018–19 | Operations Management Pompeu Fabra University, Bachelor's in International Business Economics. |
| 2017 | Optimisation methods for Big Data Analytics RWTH Aachen, Master's in Management, Business, and Economics. Student evaluation: 1.5 (on a scale where 1.0 is the best evaluation, and 5.0 is the worst). |
| 2016–17 | Foundations of OR (teaching assistant) A-K cohort taught by Enrico Malaguti, L-Z cohort taught by Michele Monaci. M.Eng. in Management Engineering, University of Bologna. |
| 2014–18 | Optimisation Algorithms (teaching assistant) Course taught by Paolo Toth. M.Eng. in Computer Engineering, University of Bologna. |

Academic experience Evaluation Committees

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| 2018 | Grant proposal evaluator “FONDECYT Initiation into Research” programme, Chilean National Science and Technology Commission. |
| 2018 | Member of the MSc Thesis Defence Committee Master in Statistics and Operational Research, Polytechnic University of Catalunya. |

Academic experience Visiting Positions

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| Nov 2017 | INSEC-TEC, Portugal Visiting as part of a Short-Term Scientific Mission for COST Action “European Network for Collaboration on Kidney Exchange Programmes”. Working with Ana Viana, João Pedro Pedroso, and Xenia Klimentova. |
| JUL-OCT 2016 | Amazon Inc. Visiting Research Scientist in Seattle, USA. Working with Mauricio Resende and Andrew Goldberg. |
| FEB 2016 | Vrije Universiteit Amsterdam Visiting PhD Student at the Department of Information, Logistics and Innovation. Working with Wout Dul-laert. |
| Nov 2015 | University of Calabria Visiting PhD Student at the Department of Mechanical, Energy and Management Engineering. Working with Demetrio Laganà. |
| MAR-MAY 2015 | Danish Technical University (DTU) Visiting PhD Student at the Department of Management Engineering. Working with Stefan Røpke. |

Grants

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| 2018 | Juan de la Cierva Formación Two-year grant from the Spanish government. Ranked 1 st out of 49 participants from all areas of Mathematics. |
| 2017 | COST STSM Grant Short-Term Scientific Mission grant to conduct research at INESC-TEC under COST Action “European Network for Collaboration on Kidney Exchange Programmes”. Funded: 1 500 Eur. |

- 2016 [PRIN \(Research Projects of Relevant National Interest\) 2016](#)
Part of the group awarded for the project “Transportation and Logistics Optimization in the Era of Big and Open Data”. Total funded: 840 638 Eur.
- 2016 [Association of European Operational Research Societies \(EURO\)](#)
Grant to organise the “EURO Young Researchers OR Webinars”. Funded: 1 000 Eur.
- 2015 [Marco Polo scholarship](#)
Grant to conduct research abroad. Funded: 1 878 Eur (three months).
- 2014–16 [PhD grant by the University of Bologna](#)
Ranked 1st out of 9 qualified participants (grade: 92/100). Funded: 40 915 Eur (three years).

Invited talks

- 2018 “What can economists learn from the Machine Learning approach and toolset?”
Universitat Pompeu Fabra. Part of the “Research Seminars” course of the M.Res. in Economics, Finance, and Management.
- 2016 “A real-time conflict resolution algorithm for the train rescheduling problem.”
Invited to present at: Vrije Universiteit, Amsterdam (Feb 2016); Danish Technical University, Copenhagen (Oct 2016); DSB Training Centre, Nyborg (Oct 2016).
- 2015 “TSP with pickups, deliveries, and draught limits.”
University of Bologna. Part of a series of seminars held by PhD students and young researchers.
- 2014 “Recent trends in Operational Research and practical business applications.”
American University of Armenia; series of two seminars at the College of Science and Engineering.
- 2014 “Data Enevelopment Analysis and OR applications in measuring efficiency.”
University of Bologna; part of the course in Resource Optimization, M.Eng. in Management Engineering.

Supervised projects and theses

- APR-SEP 2017 [Project, M.Sc. in Business Administration and Computer Science, RWTH Aachen](#)
Supervisor, “Improving document-level machine translation with word2vec”, Sean Eulenberg.
- APR-SEP 2017 [Master Thesis, M.Sc. in Business Administration and Computer Science, RWTH Aachen](#)
Co-supervisor, “A heuristic algorithm for the electric pickup and delivery problem”, Lutz Venhofen.
- SEP-DEC 2016 [Master Thesis, M.Eng. in Management Engineering, University of Bologna](#)
Co-supervisor, “Embedding robustness in train rescheduling algorithms”, Alessandro Morandi.
- FEB-APR 2016 [Project, M.Eng. in Computer Engineering, University of Bologna](#)
Co-supervisor, “A genetic algorithm for real-time energy optimisation of train timetables”, Francesco Di Lella.
- SEP-DEC 2015 [Master Thesis, M. Eng. in Management Engineering, University of Bologna](#)
Co-supervisor, “Metaheuristic algorithms for energy optimisation in train timetabling and rescheduling”, Hang Xu.
- MAR-JUN 2015 [Project, M.Eng. in Computer Engineering, University of Bologna](#)
Co-supervisor, “A constructive heuristic for the dispatching problem on multi-track territories”, Giacomo Dall’Olio and Simone Laierno.
- AUG-NOV 2014 [Master Thesis, M.Eng. in Management Engineering, University of Bologna](#)
Co-supervisor, “Valutazione della Performance di un caso di Customer Contact Desk attraverso l’applicazione della metodologia Data Envelopment Analysis”, Martina Carli.

Work experience

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| 2016 | Amazon Research Scientist Intern. Seattle, USA. |
| 2012–13 | Procter & Gamble Strategic Sourcing Intern. Bruxelles, Belgium. |
| 2012 | WISON Offshore & Marine Procurement Trainee. Shanghai, China. |
| 2011–12 | Amiiko Ruby on Rails Developer. Copenhagen, Denmark. |

Other

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| LANGUAGES | Italian: mothertongue English: fluent French: very good Spanish: very good |
| VOLUNTEERING | Italian Red Cross Danish Red Cross Big Brother / Big Sister Project Kongelunden, Copenhagen, Denmark |