

# Alberto Santini

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**Affiliations**   [Pompeu Fabra University, Spain](#)  
Department of Economics and Business  
Tenure-track assistant professor and “Juan de la Cierva” professor  
  
[Barcelona Graduate School of Economics, Spain](#)  
Affiliate professor  
  
[Barcelona Graduate School of Mathematics, Spain](#)  
Affiliate professor

## Past Positions

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

## Education

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2014–16          [University of Bologna, Italy](#)  
Ph.D. in Automatic Control and Operational Research  
Supervisors: Silvano Martello, Daniele Vigo  
  
2011–13          [University of Copenhagen, Denmark](#)  
M.Sc. in Mathematics, part of the Master of Excellence programme  
Thesis advisors: Stefan Røpke and Louise Kallehauge. Grade: 12/12  
  
2008–10          [University of Catania, Italy](#)  
B.Sc. in Mathematics  
Thesis advisor: Angelo Bella. 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)

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| 2019 | 1. Alberto Santini. “An Adaptive Large Neighbourhood Search algorithm for the Orienteering Problem”. In: <i>Expert Systems with Applications</i> 123 (2019), pp. 154–167. doi: 10.1016/j.eswa.2018.12.050   |
|      | 2. Denis Cornaz, Fabio Furini, Enrico Malaguti, and Alberto Santini. “Selective line-graphs and partition colorings”. In: <i>Operations Research Letters (submitted)</i> (2019)   |
| 2018 | 3. Enrico Malaguti, Silvano Martello, and Alberto Santini. “The Traveling Salesman Problem with Pickups, Deliveries, and Draft Limits”. In: <i>Omega</i> 74 (2018), pp. 50–58. doi: 10.1016/j.omega.2017.01.005                                       |
|      | 4. Fabio Furini, Enrico Malaguti, and Alberto Santini. “An Exact Algorithm for the Partition Coloring Problem”. In: <i>Computers &amp; Operations Research</i> 92 (2018), pp. 170–181. doi: 10.1016/j.cor.2017.12.019                                 |
|      | 5. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. “A comparison of acceptance criteria for the Adaptive Large Neighbourhood Search metaheuristic”. In: <i>Journal of Heuristics</i> 24 (5 2018), pp. 783–815. doi: 10.1007/s10732-018-9377-x |
| 2017 | 6. Alberto Santini, Stefan Ropke, and Christian E.M. Plum. “A branch-and-price approach to the Feeder Network Design Problem”. In: <i>European Journal of Operational Research</i> 264 (2 2017), pp. 607–622. doi:                                    |

10.1016/j.ejor.2017.06.063

7. 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 8. 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)

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- 2018 9. Christian Blum, Alberto Santini, Hua Jiang, Chu-Min Li, Felip Manyà, and Marko Djukanovic. “An exact algorithm for a large class of longest common subsequence problems”. In: *In preparation* (2018)
10. Eduardo Álvarez-Miranda, Elena Fernández, and Alberto Santini. “Algorithms for the postal zoning problem for packet delivery”. In: *In preparation* (2018)
11. 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

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- 2015 12. 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 13. 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

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- 2018 14. Alberto Santini and Christian Blum. “Solving a class of longest subsequence problems via maximum cliques”. In: *ODS Conference*. 2018
15. Alberto Santini. “An ALNS heuristic for the Orienteering Problem”. In: *EURO Conference*. 2018
16. Alberto Santini. “A hybrid Machine Learning and ALNS approach to the Orienteering Problem”. In: *EURO/ALIO Conference*. 2018
- 2017 17. Fabio Furini, Enrico Malaguti, and Alberto Santini. “Exact and heuristic algorithms for the partition colouring problem”. In: *ODS Conference*. 2017
- 2016 18. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. “Poster: A comparison of acceptance criteria for the ALNS metaheuristic”. In: *AIRO Conference*. 2016
19. 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 20. Enrico Malaguti, Silvano Martello, and Alberto Santini. “A maritime version of the Travelling Salesman Problem”. In: *Odysseus Conference*. 2015
21. Alberto Santini, Stefan Ropke, and Christian E.M. Plum. “A rich maritime extension of the Vehicle Routing Problem”. In: *AIRO Conference*. 2015
- 2014 22. Enrico Malaguti, Silvano Martello, and Alberto Santini. “The Travelling Salesman Problem with pickup, delivery and draught limits”. In: *AIRO Conference*. 2014

## Academic experience Scientific Organisations

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- 2019–2021 [Elected member of the Board of Directors](#)  
Part of the 12-persons board of directors of AIRO, the Italian Operational Research Association.

2018	<b>Founder</b> 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	<b>Coordinator</b> Coordinator of AIROYoung, the youth chapter of the Italian Operational Research Association. During my tenure as coordinator, I organised two workshops 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.
2016	<b>Founder</b> Founder of AIROYoung, the youth chapter of the Italian Operational Research Association.

## Academic experience Organisation of Seminars, Workshops, and Courses

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JUN 2019	<b>Organiser of a PhD and Postdoc course</b> Organised a course for PhD and Postdocs of the Barcelona Graduate School of Mathematics, titled “An Introduction to Equilibrium Problems and their applications”. The course is taught by Mauro Passacantando.
MAY 2019	<b>Member of the Organising Committee</b> The 1 <sup>st</sup> EUROYoung Workshop. Invited speakers: Ana Viana and Federico Perea. Seville, Spain, 2–3 MAY 2019.
MAR 2019	<b>Member of the Organising Committee</b> The 3 <sup>rd</sup> AIROYoung Workshop and 1 <sup>st</sup> AIROYoung PhD School. Invited speakers: Teodor Crainic and Endre Boros. Rome, Italy, 26–29 MAR 2019.
2018-19	<b>Coordinator of the “Marketing and Operational Research” seminar series</b> This is a series of weekly seminars at the Department of Economics and Business of Pompeu Fabra University, with invited speakers from all over the world.
MAR 2018	<b>Member of the Organising Committee</b> The 2 <sup>nd</sup> AIROYoung Workshop, on the theme “Logistics optimisation and applied operational research”. Invited speakers: Geir Hasle and Roberto Roberti. Cosenza, Italy, 03–05 MAR 2018.
FEB 2017	<b>Workshop Organiser</b> Organised, together with Lavinia Amorosi, the 1 <sup>st</sup> 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	<b>EURO Young Researchers OR Webinars Organiser</b> Organised a series of OR webinars by and for young researchers from all over the world, sponsored by EURO.
2015	<b>Seminars Organiser</b> Organised a series of doctoral seminars within the Operational Research group at DEI, University of Bologna, involving local and visiting researchers.

## Academic experience Conferences

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JUL 2019	<b>Member of the Programme Committee (ECON track)</b> GECCO2019, the The Genetic and Evolutionary Computation Conference. Prague, Czech Republic.
JAN 2019	<b>Member of the Programme Committee</b> HM2019, the 11 <sup>th</sup> International Workshop on Hybrid Metaheuristics. Concepción, Chile.
SEP 2018	<b>Member of the Organising Committee and Session Chair</b> ODS 2018, Optimisation and Decision Science Conference. Chair of the “AIROYoung” session. Taormina, Italy.
JUN 2018	<b>Session Chair</b> “EURO Young” session at the EURO 2018 Conference. Valencia, Spain.

JUN 2018	<a href="#">Session Chair</a> “AIROYoung” session at the EURO/ALIO 2018 Conference. Bologna, Italy.
SEP 2017	<a href="#">Session Chair</a> “AIROYoung” session at the ODS 2017, Optimisation and Decision Science Conference. Sorrento, Italy.
SEP 2016	<a href="#">Poster Session Chair</a> “Young OR Researchers Poster Session” at the AIRO 2016 Conference. Trieste, Italy.
JUL 2016	<a href="#">Session Chair</a> “Methodological advancements in metaheuristics” session at the EURO 2016 Conference. Poznan, Poland.
SEP 2015	<a href="#">Session Chair</a> “Exact Methods for Routing Problems” at the AIRO 2015 Conference. Pisa, Italy.

## Academic experience Teaching

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2019	<a href="#">Practical Data Science for Operations Management</a> Barcelona School of Management, Pompeu Fabra University, M.Sc. in Management.
2018	<a href="#">Machine Learning</a> RWTH Business School, M.Sc. in Data Analytics and Decision Science.
2018	<a href="#">Operations Management</a> Pompeu Fabra University, Bachelor’s in Business Management Administration.
2018–19	<a href="#">Operations Management</a> Pompeu Fabra University, Bachelor’s in International Business Economics.
2017	<a href="#">Optimisation methods for Big Data Analytics</a> RWTH Aachen, Master’s in Management, Business, and Economics.
2016–17	<a href="#">Foundations of OR (teaching assistant)</a> A-K cohort taught by Enrico Malaguti, L-Z cohort taught by Michele Monaci. University of Bologna, B.Eng. in Management Engineering.
2014–18	<a href="#">Optimisation Algorithms (teaching assistant)</a> Course taught by Paolo Toth. University of Bologna, M.Eng. in Computer Engineering.

## Academic experience Evaluation Committees

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2018	<a href="#">Grant proposal evaluator</a> “FONDECYT Initiation into Research” programme, Chilean National Science and Technology Commission.
2018–19	<a href="#">Member of the M.Sc. Thesis Defence Committee</a> Master’s in Statistics and Operational Research, Polytechnic University of Catalunya, Spain.

## Academic experience Visiting Positions

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Nov 2017	<a href="#">INSEC-TEC, Portugal</a> 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	<a href="#">Amazon Inc.</a> Visiting Research Scientist in Seattle, USA. Working with Mauricio Resende and Andrew Goldberg.
FEB 2016	<a href="#">Vrije Universiteit Amsterdam</a> Visiting Ph.D. Student at the Department of Information, Logistics and Innovation. Working with Wout Dullaert.
Nov 2015	<a href="#">University of Calabria</a>

Visiting Ph.D. Student at the Department of Mechanical, Energy and Management Engineering. Working with Demetrio Laganà.

MAR-MAY 2015 [Danish Technical University \(DTU\)](#)  
Visiting Ph.D. Student at the Department of Management Engineering. Working with Stefan Røpke.

## Grants

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2018–20 [Juan de la Cierva Formación](#)  
Two-year grant from the Spanish government. Ranked 1<sup>st</sup> out of 49 participants from all areas of Mathematics, with a score of 99/100.

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 [Ph.D. grant by the University of Bologna](#)  
Ranked 1<sup>st</sup> out of 9 qualified participants, with a score of 92/100. Funded: 40 915 Eur (three years).

## Invited talks

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2018 [“What can economists learn from the Machine Learning approach and toolset?”](#)  
Pompeu Fabra University. Part of the course “Research Seminars”, 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 (DTU), Kongens Lyngby (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 Ph.D. 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 “Resource Optimization”, M.Eng. in Management Engineering.

## Supervised projects and theses

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APR-SEP 2017 [Project, M.Sc. in Management, Business, and Economics, RWTH Aachen](#)  
Supervisor, “Improving document-level machine translation with word2vec”, Sean Eulenberg.

APR-SEP 2017 [Master’s Thesis, M.Sc. in Management, Business, and Economics, RWTH Aachen](#)  
Co-supervisor, “A heuristic algorithm for the electric pickup and delivery problem”, Lutz Venhofen.

SEP-DEC 2016 [Master’s 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	<a href="#">Master's Thesis, M.Eng. in Management Engineering, University of Bologna</a> Co-supervisor, "Metaheuristic algorithms for energy optimisation in train timetabling and rescheduling", Hang Xu.
MAR-JUN 2015	<a href="#">Project, M.Eng. in Computer Engineering, University of Bologna</a> Co-supervisor, "A constructive heuristic for the dispatching problem on multi-track territories", Giacomo Dall'Olio and Simone Laierno.
AUG-NOV 2014	<a href="#">Master's Thesis, M.Eng. in Management Engineering, University of Bologna</a> 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	<a href="#">Amazon</a> Research Scientist Intern. Seattle, USA.
2012-13	<a href="#">Procter &amp; Gamble</a> Strategic Sourcing Intern. Bruxelles, Belgium.
2012	<a href="#">WISON Offshore &amp; Marine</a> Procurement Trainee. Shanghai, China.
2011-12	<a href="#">Amiiko</a> 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