

# 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

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

## Education

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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

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Journal Papers (published or submitted)

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| 2018 | <ol style="list-style-type: none"><li>1. 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</li><li>2. 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</li><li>3. 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</li><li>4. Alberto Santini. “An ALNS heuristic for the Orienteering Problem”. In: <i>Expert Systems with Applications</i> Under revision (2018)</li></ol> |
| 2017 | <ol style="list-style-type: none"><li>5. 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</li></ol>   |

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)

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- 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

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- 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

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- 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	<b>Member of the Programme Committee</b> “HM 2019”, the 11 <sup>th</sup> International Workshop on Hybrid Metaheuristics. Concepción, Chile.
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 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	<b>Member of the Organising Committee and Session Chair</b> “ODS 2018” 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	<b>Session Chair</b> “AIROYoung” session at the EURO/ALIO 2018 Conference. Bologna, Italy.
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.
SEP 2017	<b>Session Chair</b> “AIROYoung” session at the ODS 2017 Conference. Sorrento, Italy.
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>Founder</b> Founder of AIROYoung, the youth chapter of the Italian Operational Research Association.
SEP 2016	<b>Poster Session Chair</b> “Young OR Researchers Poster Session” at the AIRO 2016 Conference. Trieste, Italy.
JUL 2016	<b>Session Chair</b> “Methodological advancements in metaheuristics” at the EURO 2016 Conference. Poznan, Poland.
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.
SEP 2015	<b>Session Chair</b> “Exact Methods for Routing Problems” at the AIRO 2015 Conference. Pisa, Italy.
2015	<b>Seminars Organiser</b> 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	<b>Practical Data Science for Operations Management</b> Barcelona School of Management, Pompeu Fabra University, M.Sc. in Management.
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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. Student evaluation: 1.5 (on a scale where 1.0 is the best evaluation, and 5.0 is the worst).
2016–17	<a href="#">Foundations of OR (teaching assistant)</a> A-K cohort taught by Enrico Malaguti, L-Z cohort taught by Michele Monaci. M.Eng. in Management Engineering, University of Bologna.
2014–18	<a href="#">Optimisation Algorithms (teaching assistant)</a> Course taught by Paolo Toth. M.Eng. in Computer Engineering, University of Bologna.

## 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	<a href="#">Member of the MSc Thesis Defence Committee</a> Master in Statistics and Operational Research, Polytechnic University of Catalunya.

## 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 PhD Student at the Department of Information, Logistics and Innovation. Working with Wout Dul-laert.
Nov 2015	<a href="#">University of Calabria</a> Visiting PhD Student at the Department of Mechanical, Energy and Management Engineering. Working with Demetrio Laganà.
MAR-MAY 2015	<a href="#">Danish Technical University (DTU)</a> Visiting PhD Student at the Department of Management Engineering. Working with Stefan Røpke.

## Grants

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2018	<a href="#">Juan de la Cierva Formación</a> Two-year grant from the Spanish government. Ranked 1 <sup>st</sup> out of 49 participants from all areas of Mathematics.
2017	<a href="#">COST STSM Grant</a> 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 1<sup>st</sup> out of 9 qualified participants (grade: 92/100). Funded: 40 915 Eur (three years).

## Invited talks

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- 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

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- 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	<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