

# Alberto Santini

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Affiliations    [Tenure-track assistant professor and “Juan de la Cierva” professor](#)  
Department of Economics and Business, Pompeu Fabra University, Spain  
[Affiliate professor](#)  
Barcelona Graduate School of Economics, Spain  
[Affiliate professor](#)  
Barcelona Graduate School of Mathematics, 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](#)  
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  
Grade: 12/12

2008–10    [University of Catania, Italy](#)  
B.Sc. 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)

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- 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)

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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 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: *Odyseus 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 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 [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 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 [Founder](#)  
Founder of AIROYoung, the youth chapter of the Italian Operational Research Association.

## Academic experience Seminars and Workshops

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- 2018-19 [Coordinator of the “Marketing and Operational Research” seminar series](#)  
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 [Member of the Organising Committee](#)  
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 [Workshop Organiser](#)  
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 [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.
- 2015 [Seminars Organiser](#)  
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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- JAN 2019 [Member of the Programme Committee](#)  
HM2019, the 11<sup>th</sup> International Workshop on Hybrid Metaheuristics. Concepción, Chile.
- SEP 2018 [Member of the Organising Committee](#) and [Session Chair](#)  
ODS 2018, Optimisation and Decision Science 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.
- SEP 2017 [Session Chair](#)  
“AIROYoung” session at the ODS 2017, Optimisation and Decision Science Conference. Sorrento, Italy.

- 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” session at the EURO 2016 Conference. Poznan, Poland.
- SEP 2015 [Session Chair](#)  
 “Exact Methods for Routing Problems” at the AIRO 2015 Conference. Pisa, Italy.

## 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.
- 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.
- 2016–17 [Foundations of OR \(teaching assistant\)](#)  
 A-K cohort taught by Enrico Malaguti, L-Z cohort taught by Michele Monaci.  
 University of Bologna, .
- 2014–18 [Optimisation Algorithms \(teaching assistant\)](#)  
 Course taught by Paolo Toth.  
 University of Bologna, M.Eng. in Computer Engineering.

## Academic experience Evaluation Committees

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- 2018 [Grant proposal evaluator](#)  
 “FONDECYT Initiation into Research” programme, Chilean National Science and Technology Commission.
- 2018–19 [Member of the M.Sc. Thesis Defence Committee](#)  
 Master’s 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 Ph.D. Student at the Department of Information, Logistics and Innovation. Working with Wout Dullaert.
- Nov 2015 [University of Calabria](#)  
 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 [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 [Master’s 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’s 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