

# Alberto Santini

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**Affiliations**    [Tenure-track assistant 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 | 1. Enrico Malaguti, Silvano Martello, and Alberto Santini. The Traveling Salesman Problem with pickups, deliveries, and draft limits. <i>Omega</i> , 74:50–58, 2018. doi: 10.1016/j.omega.2017.01.005                             |
|      | 2. Fabio Furini, Enrico Malaguti, and Alberto Santini. An exact algorithm for the Partition Coloring Problem. <i>Computers &amp; Operations Research (in press)</i> , pages 1–17, 2018. doi: 10.1016/j.cor.2017.12.019            |
| 2017 | 3. Alberto Santini, Stefan Ropke, and Christian E.M. Plum. A branch-and-price approach to the Feeder Network Design Problem. <i>European Journal of Operational Research</i> , 264:607–622, 2017. doi: 10.1016/j.ejor.2017.06.063 |
|      | 4. Andrea Bettinelli, Alberto Santini, and Daniele Vigo. A real-time conflict solution algorithm for the Train Rescheduling Problem. <i>Transportation Research Part B</i> , 106:237–265, 2017. doi: 10.1016/j.trb.2017.10.005    |
|      | 5. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. Measuring the impact of acceptance criteria on the Adaptive Large Neighbourhood Search metaheuristic. <i>Journal of Heuristics (under revision)</i> , pages 1–25, 2017 |

- 2015            6. Alberto Santini, Henrik Alsing Friberg, and Stefan Ropke. A note on a model for quay crane scheduling with non-crossing constraints. *Engineering Optimization*, 47(6):860–865, 2015. doi: 10.1080/0305215X.2014.958731

## Publications Journal Papers (in preparation)

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- 2018            7. Alberto Santini. A hybrid machine-learning and metaheuristic approach to the Orienteering Problem. *In preparation*, 2018
8. Stefan Ropke and Alberto Santini. Parallel Adaptive Large Neighbourhood Search. *In preparation*, pages 1–16, 2018
9. Eduardo Álvarez Miranda, Elena Fernández, and Alberto Santini. Algorithms for the postal zoning problem for packet delivery. *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 preparation*, 2018
11. Demetrio Laganà and Alberto Santini. Exact solution methods for the Constrained Shortest Path Tour Problem. *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. Technical Report 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. Technical Report OR-14-27, DEI, University of Bologna, 2014

## Conference Talks

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- 2017            14. Fabio Furini, Enrico Malaguti, and Alberto Santini. Exact and heuristic algorithms for the partition colouring problem. In *ODS 2017 Conference*, 2017
- 2016            15. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. Poster: A comparison of acceptance criteria for the ALNS metaheuristic. In *AIRO 2016 Conference*, 2016
16. Alberto Santini, Stefan Ropke, and Lars Magnus Hvattum. A comparison of acceptance criteria for the Adaptive Large Neighbourhood Search metaheuristic. In *EURO 2016 Conference*, 2016
- 2015            17. Enrico Malaguti, Silvano Martello, and Alberto Santini. A maritime version of the Travelling Salesman Problem. In *Odysseus 2015 Conference*, 2015
18. Alberto Santini, Stefan Ropke, and Christian E.M. Plum. A rich maritime extension of the Vehicle Routing Problem. In *AIRO 2015 Conference*, 2015
- 2014            19. Enrico Malaguti, Silvano Martello, and Alberto Santini. The Travelling Salesman Problem with pickup, delivery and draught limits. In *AIRO 2014 Conference*, 2014

## Academic experience Organisation

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- SEP 2018       [Member of the Organising Committee](#)  
“ODS 2018” Conference. Taormina, Italy.
- MAR 2018       [Member of the Organising Committee](#)

	The 2 <sup>nd</sup> AIRO Young Workshop. Invited speakers: Geir Hasle and Roberto Roberti. Cosenza, Italy, 03-05 MAR 2018.
SEP 2017	<b>Session Chair</b> “AIRO Young” session at the ODS 2017 Conference. Sorrento, Italy.
FEB 2017	<b>Workshop Organiser</b> Organised, together with Lavinia Amorosi, the 1 <sup>st</sup> AIRO Young Workshop, on the theme “Emerging Optimization Problems on Complex Networks”. Invited speakers: Justo Puerto and Maria Grazia Scutellà. Rome, Italy, 16-17 FEB 2017.
2016-2017	<b>Founder and Coordinator</b> Founder and coordinator of AIRO Young, 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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2018	<b>Teacher</b> Course “Operations Management” taught at Pompeu Fabra University.
2017	<b>Teacher</b> Course “Optimisation methods for Big Data Analytics” taught at RWTH Aachen (Summer Semester). Student evaluation: 1.5 (on a scale where 1.0 is the best evaluation, and 5.0 is the worst).
2016-17	<b>Teaching assistant</b> Course “Foundations of OR”, A-K cohort taught by Enrico Malaguti, L-Z cohort taught by Michele Monaci. M. Eng. in Management Engineering, University of Bologna.
2016-17	<b>Teaching assistant</b>
2015-16	Course “Optimisation Algorithms M” taught by Paolo Toth. M.Eng. in Computer Engineering, University of Bologna.
2014-15	

## Academic experience Evaluation Committees

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2018	<b>Member of the MSc Thesis Defence Committee</b> For the master in Statistics and Operational Research, at the Polytechnic University of Catalunya.
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## Academic experience Visiting Positions

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Nov 2017	<b>INSEC-TEC, Portugal</b> Visiting Ana Viana, as part of a Short-Term Scientific Mission for COST Action “European Network for Collaboration on Kidney Exchange Programmes”.
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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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2017	<a href="#">COST STSM Grant</a> Short-Term Scientific Mission grant to conduct research at INESC-TEC under COST Action “European Net-work for Collaboration on Kidney Exchange Programmes”. Funded: 1 500 Eur.
2016	<a href="#">PRIN (Research Projects of Relevant National Interest) 2016</a> 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	<a href="#">Association of European Operational Research Societies (EURO)</a> Grant to organise the “EURO Young Researchers OR Webinars”. Funded: 1 000 Eur.
2015	<a href="#">Marco Polo scholarship</a> Grant to conduct research abroad. Funded: 1 878 Eur (three months).
2014-16	<a href="#">PhD grant by the University of Bologna</a> 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 href="#">“A real-time conflict resolution algorithm for the train rescheduling problem.”</a> Invited to present at: Vrije Universiteit, Amsterdam (Feb 2016); Danish Technical University, Copenhagen (Oct 2016); DSB Training Centre, Nyborg (Oct 2016).
2015	<a href="#">“TSP with pickups, deliveries, and draught limits.”</a> University of Bologna. Part of a series of seminars held by PhD students and young researchers.
2014	<a href="#">“Recent trends in Operational Research and practical business applications.”</a> American University of Armenia; series of two seminars at the College of Science and Engineering.
2014	<a href="#">“Data Enevelopment Analysis and OR applications in measuring efficiency.”</a> 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	<a href="#">Project, M.Sc. in Business Administration and Computer Science, RWTH Aachen</a> Supervisor, “Improving document-level machine translation with word2vec”, Sean Eulenberg.
APR-SEP 2017	<a href="#">Master Thesis, M.Sc. in Business Administration and Computer Science, RWTH Aachen</a> Co-supervisor, “A heuristic algorithm for the electric pickup and delivery problem”, Lutz Venhofen.
SEP-DEC 2016	<a href="#">Master Thesis, M.Eng. in Management Engineering, University of Bologna</a>

	Co-supervisor, “Embedding robustness in train rescheduling algorithms”, Alessandro Morandi.
FEB-APR 2016	<a href="#">Project, M.Eng. in Computer Engineering, University of Bologna</a> Co-supervisor, “A genetic algorithm for real-time energy optimisation of train timetables”, Francesco Di Lella.
SEP-DEC 2015	<a href="#">Master 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 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> Web Developer. Copenhagen, Denmark.

## Other

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LANGUAGES	Italian: mothertongue English: fluent French: fluent Danish: good Armenian: studying
VOLUNTEERING	Italian Red Cross Danish Red Cross International Rotaract Club of Copenhagen