Daniele Manerba, Ph.D. – Academic CV

Born in Brescia (Italy), 1983. Italian. Male.

Affiliation: Department of Information Engineering, University of Brescia.
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GoogleScholar: https://scholar.google.it/citations?user=pXW63_QAAAAJ
Scopus: https://www.scopus.com/authid/detail.uri?authorId=55220200300

Current position: 01/01/2016 – 31/12/2016. Post-doc research fellow (MAT/09 - Operational Research, ING-INF/07 - Electric and electronic measures, ING-INF/01 - Electronics) at Department of Information Engineering - University of Brescia. Subject: "Development and validation of optimization models and algorithms for Energy Management".

Previous positions:

- 01/10/2015 – 31/12/2015. Post-doc research fellow (MAT/09, Operational Research) at Department of Information Engineering - University of Brescia. Subject: "Analysis and optimization of the colo-rectal cancer therapy process".

- 01/10/2014 – 30/09/2015. Post-doc research fellow (MAT/09, Operational Research) at Department of Information Engineering - University of Brescia. Subject: "Optimization models and algorithms for management, consumption, and storage of energy".

- 01/09/2010 – 31/08/2011. Research fellow (MAT/09, Operational Research) at Department of Information Engineering - University of Brescia. Project: "Mathematical models and algorithms for procurement problems with purchasing costs, travelling costs and discount policies".

Publications

National and international journals

- P. Beraldi, M. E. Bruni, D. Manerba, R. Mansini. A Stochastic Programming approach for the Traveling Purchaser Problem. *IMA Journal of Management Mathematics.* To appear. DOI: 10.1093/imaman/dpv022

- D. Manerba, R. Mansini, The Nurse Routing Problem with Workload Constraints and Incompatible Services, *IFAC-PapersOnLine* 49 (12), pp. 1192-1197. 2016.

- M. Gendreau, D. Manerba, R. Mansini. The Multi-Vehicle Traveling Purchaser Problem with Pairwise Incompatibility Constraints and Unitary Demands: A Branch-and-Price approach. *European Journal of Operational Research* 248 (1), pp. 59-71. 2016.

- D. Manerba. Optimization models and algorithms for problems in Procurement Logistics. *4OR - A Quarterly Journal of Operations Research* 13 (3), pp. 339-340. 2015.

- D. Manerba, R. Mansini. A branch-and-cut algorithm for the Multi-vehicle Traveling Purchaser Problem with Pairwise Incompatibility Constraints. *Networks* 65 (2), pp. 139-154. 2015.

- D. Manerba, R. Mansini. An Effective Matheuristic for the Capacitated Total Quantity Discount Problem. *Computers and Operations Research* 41 (1), pp. 1-11. 2014.

- D. Manerba, R. Mansini. An Exact Algorithm for the Capacitated Total Quantity Discount Problem. *European Journal of Operational Research* 222 (2) pp. 287-300. 2012.

Proceedings/abstracts of selective conferences

- The Nurse Routing Problem with Workload Constraints and Incompatible Services. *MIM 2016, 8th IFAC Conference on Manufacturing Modelling, Management and Control*. June 28-30, 2016. Troyes, France (with R. Mansini).

- A Nurse Routing Problem with operational side-constraints. *VeRoLog2016*. June 6-8, 2016. Nantes, France (with R. Mansini).

- Introducing incompatibility restrictions among products in a multi-vehicle procurement and routing context. In: *NOW 2015 - Network Optimization Workshop*. May, 18-21, 2015. La Rochelle, France (with M. Gendreau, R. Mansini)

- A branch-and-price algorithm for the Multi-Vehicle Travelling Purchaser Problem with Pairwise Incompatibility Constraints and Unitary Demands. *AIRO 2014 – Decision Models for Smarter Cities*. September 2-5, 2014. Como, Italy (with M. Gendreau, R. Mansini).

- A column generation approach for the Multi-Vehicle Travelling Purchaser Problem with Pairwise Incompatibility Constraints. *IFORS*. July 13-18,2014. Barcellona, Spain (with M. Gendreau, R. Mansini).

- Multi-Vehicle Traveling Purchaser Problem with Exclusionary Side Constraints. *VeRoLog2013*. July, 7-10, 2013. Southampton, England (with R. Mansini).

- Vehicle Purchaser Problem with Exclusionary Side Constraints. *AIRO 2012 - Graph Algorithms and Optimization.* September 4-7, 2012. Vietri sul Mare (SA), Italy (with R. Mansini, M. Picchi).

- The Traveling Purchaser Problem under Uncertainty. *AIRO 2012 - Graph Algorithms and Optimization.* September 4-7, 2012. Vietri sul Mare (SA), Italy (with M. E. Bruni, P. Beraldi, R. Mansini).

- The Capacitated Traveling Purchaser Problem with Total Quantity Discount. *Odysseus2012 - 5th International Workshop on Freight Transportation and Logistics*, May 21-25, 2012. Mykonos, Greece (with R. Mansini).

- An exact algorithm for the Capacitated Total Quantity Discount Problem. *AIRO 2011 - Operational Research in Transportation and Logistics*. September 6-9, 2011. Brescia, Italy (with R. Mansini).

Technical Reports

- D. Manerba, R. Mansini, J. Riera-Ledesma. The Traveling Purchaser Problem and its Variants. *Technical report OR@DII-2016-01*. OR@DII - Dept. of Information Engineering, University of Brescia, 2016.
- D. Manerba, R. Mansini, M. Gendreau. The Multi-Vehicle Traveling Purchaser Problem with Pairwise Incompatibility Constraints and Unitary Demands: A Branch-and-Price approach. *Technical report* CIRRELT-2014-52. CIRRELT, Montreal. 2014
- D. Manerba, R. Mansini. A branch-and-cut algorithm for the Multi-vehicle Traveling Purchaser Problem with Exclusionary Side Constraints. *Technical report OR@DII-2013-02*. OR@DII - Dept. of Information Engineering, University of Brescia, 2013.
- D. Manerba, R. Mansini. An effective hybrid heuristic for the Capacitated Total Quantity Discount Problem. *Technical report RT_2011-03-67*, Dept. of Information Engineering, University of Brescia, 2011.
- D. Manerba, R. Mansini. An exact algorithm for the Capacitated Total Quantity Discount Problem. *Technical report RT_2011-02-66*, Dept. of Information Engineering, University of Brescia, 2011.

Posters

- D. Manerba, R. Mansini. The Multi-Vehicle Traveling Purchaser Problem with Exclusionary Side Constraints. *Presented during "VRP2013: European Spring School on Vehicle Routing" poster session*. May, 2013. Angers, France

Seminars:

- 02/12/2016 – "Door-to-door garbage collection with Arc Routing: the case study of Brescia". University of Verona, Italy.
- 04/10/2016 – "Energy Management System per la gestione dell'edificio", in "Progetto S.C.U.O.LA. Smart Campus as Urban Open Lab, Obiettivi e risultati dei dimostratori di Brescia". University of Brescia, Italy.
- 22/01/2015 – "Optimization Models and Algorithms for Problems in Procurement Logistics". University of Brescia, Italy.

Curriculum studiorum

Academic degrees:

- March 16, 2015 – Ph.D. Degree in "Information and Automation Engineering" under the supervision of Prof. Renata Mansini. Department of Information Engineering, University of Brescia. Thesis: "Optimization Models and Algorithms for Problems in Procurement Logistics".

- March 24, 2010 – Master Degree in Informatic Engineering, University of Brescia. Thesis: "The Capacitated Travelling Purchaser Problem with Volume Discount: models and algorithms". Supervisor: Prof. Renata Mansini.

- November, 2007 – Bachelor Degree in Information Engineering, University of Brescia. Thesis: "A web application for maintaining and programming a DNS server". Supervisors: Prof. Marina Zanella, Prof. Paolo Prandini.

Schools/Ph.D. courses attended

- "Discrete Optimization", on-line course with Prof. Pascal Van Hentenryck. University of Melbourne (www.coursera.org - 2013)

- "VRP2013: European Spring School on Vehicle Routing", 25.5 hours course with Professors Daniele Vigo, Christian Prins, Dominique Feillet, Victor Pillac and Michel Gendreau. Université Catholique de l'Ouest (Angers, France - 2013)

- "Linear and Discrete Optimization", on-line course with Prof. Fritz Eisenbrand. École Polytechnique Fédérale de Lausanne (www.coursera.org - 2013)

- "Optimization on graphs", 20 hours course with Prof. Giovanni Righini. University of Milano (Milano, Italy - 2013)

- "Stochastic programming", 25 hours course with Prof. Lewis Ntaimo and Prof. Guglielmo Lulli. University of Milano-Bicocca (Milano, Italy - 2012)

Reviewer for the following journals:

- European Journal of Operational Research (EJOR)
- Transportation Science (TS)
- Computers & Operations Research (COR)
- Journal of the Operational Research Society (JORS)
- Annals of Operations Research (ANOR)
- Transportation Research Part E: Logistics and Transportation Review (TRE)
- 4OR – A Quarterly Journal of Operation Research
- International Transactions in Operational Research (ITOR)
- Journal of Scheduling (JOSH)
- Computers & Industrial Engineering (CAIE)
- International Journal of Management Science and Engineering Management (IJMSEM)
- International Journal of Production Research (IJPR)
- Scientia Iranica – International Journal of Science and Technology
- Assembly Automation

Organization Committee of the following conferences:

- AIRO 2011 - Operational Research in Transportation and Logistics. September 6-9, 2011. Brescia, Italy

Chair of the following conference sessions:

- *Healthcare Logistics*. VEROLOG, June 6-8, 2016. Nantes (France).
- *Variants of the Vehicle Routing Problem*. IFORS, July 13-18, 2014. Barcellona (Spain).

Teaching activities

Teaching assistant

- 2015/2016 – Teaching assistant in "Operational Research" course, University of Brescia.
- 2014/2015 – Teaching assistant in "Operational Research" course, University of Brescia.
- 2013/2014 – Teaching assistant in "Operational Research" course, University of Brescia.
- 2012/2013 – Teaching assistant in "Optimization Algorithms" course, University of Brescia.
- 2011/2012 – Teaching assistant in "Operational Research" course, University of Brescia.

Supervisor of the following master thesis:

- Alice Raffaele – "Time-constrained Vehicle Routing Problem" – *Master thesis in Information Engineering*, University of Brescia, Italy. Supervisor: R. Mansini, J.-F. Coté. Co-supervisor: D. Manerba. 2016.
- Alessandro Gobbi – "Ottimizzazione del percorso di cura per pazienti con neoplasia al colon-retto: processi decisionali, modelli e algoritmi" – *Master thesis in Information Engineering*, University of Brescia, Italy. Supervisor: R. Mansini. Co-supervisor: D. Manerba. 2016.
- Riccardo Orizio – "Vehicle Routing Problems with Time Windows Incentives" – *Master thesis in Information Engineering*, University of Brescia, Italy. Supervisors: R. Mansini, J.-F. Coté. Co-supervisor: D. Manerba. 2016.

Lectures:

- Lecturer at "Arc Routing Problems: optimization models, algorithms, and applications" PhD mini-course. Nov 4, Dec 1-2, 2016. Dept. of Computer Science - University of Verona (Italy).
- Laboratory Instructor/Lecturer at "Modelling week" Ph.D. school. September 4-11, 2016. Dept. of Computer Science - University of Verona (Italy).
- April 2013 – "Polyhedral Analysis and Integer Linear Programming" (8 hours), University of Brescia (Italy).
- March 2012 - "Cplex: optimal solution of MILP problems" (4 hours), University of Brescia, (Italy).

Price and Awards

- EU/ME scholarship to attend "VRP2013: European Spring School on Vehicle Routing"

Research interests:

- Integer programming and combinatorial optimization
- Polyhedral analysis / polyhedral combinatorics
- Exact algorithms, meta-heuristics and matheuristics
- Distribution/Procurement Logistics, Supplier Selection, Vehicle Routing problems
- Optimization on graphs
- Stochastic programming
- Smart Grid optimization

- Healthcare Logistics

Groups and memberships:

- OR@DII – Operation Research group at Dept. of Information Engineering of University of Brescia (http://or-dii.unibs.it/)
- OR@BRESCIA – Interdipartimental Operation Research group at University of Brescia
- AIRO – Italian Association of Operational Research
- EU/ME – European working group on Metaheuristics
- VeRoLog – EURO working group on Vehicle Routing and Logistics Optimization

Research collaborations and experiences

- Oct. 2014 – Dic. 2014: visiting PhD student at CIRRELT – Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation. Montreal (Canada). Supervisor Prof. Michel Gendreau.

Partecipation in national and international projects

Current:

- A.I.A.C.C.I.O. - Advanced Integrated Assistance for Colorectal Cancer: Interventive Options. Duration: 3 years
- S.IN. - Social INnovation (00665), Virtual eGateway (Gateway domestico per la gestione interattiva dei flussi di energia). Duration: 3 years

Previous:

- SCUOLA - Smart Campus as Urban Open LAbs.
  Regione Lombardia, "Smart Cities and Communities".
  Duration: March, 2014 - November, 2015.

- Portale integrato per la tracciabilità di filiera e la trasparenza dei prodotti di IV gamma nel comparto ortofrutta.
  Regione Lombardia, "FEARS PSR Programma di Sviluppo Rurale 2007-2013, Misura 124".
  Duration: 2 years (July, 2012 - July, 2014)

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