

Last update May 31, 2011

A. PERSONAL DATA

Family name	Perboli
Name	Guido
Email	guido.perboli at polito.it

A1. EDUCATION

2002	Ph.D. in Computer Engineering - Politecnico di Torino
1999	Master degree in Computer Engineering - Politecnico di Torino

A2. WORKING CAREER

2007–2011	Assistant Professor at the Control and Computer Engineering Department (DAUIN) of the Politecnico di Torino Torino, Italy
2002–2007	Ph.D. Fellow at DAUIN of the Politecnico di Torino.

A3. MAIN RESEARCH TOPICS

Max 1000 characters ~ 12 rows

Combinatorial optimization and, in particular, models and methods for packing, transportation, and logistics.

Packing

New, fast and accurate lower bounds have been introduced for the Bin Packing problem. The new bounds are characterized by a negligible computational effort and an excellent performance. New approaches for the accommodation of items in two and three dimensions have been studied. By means of these new approaches, heuristic algorithms for the bin packing and container packing problems have been developed and tested, obtaining better results than the state of the art methods.

Transportation and logistics

A new family of VRP problems, the Multi-Echelon VRP problems, have been introduced. For the 2-Echelon version of these problems, models, math-heuristics and several cut families have been introduced.

B. SCIENTIFIC ACTIVITIES

B1. NUMBER OF PUBLICATIONS

Taken from your U-GOV research catalog, when available

Publication type	Number
Papers in peer-reviewed international journals	15
Book chapters	2
Books (authored)	1
Proceedings of peer-reviewed international conferences	19
Books and journal issues edited	0
Patents	0
Other	8
Total	45

B2. LIST OF PUBLICATIONS

Taken from your U-GOV research catalogue, when available

Papers in peer-reviewed international journals

- [Bal+11] M. Baldi, M. Ghirardi, G. Perboli, and R. Tadei. “The capacitated transshipment location problem under uncertainty: a computational study”. *PROCEDIA: SOCIAL & BEHAVIORAL SCIENCES*, forthcoming, 2011.
- [Cra+11a] T. Crainic, G. Perboli, W. Rei, and R. Tadei. “Efficient lower bounds and heuristics for the variable cost and size bin packing problem”. *COMPUTERS & OPERATIONS RESEARCH*, 38, 2011, pp. 1474–1482.
- [Cra+11c] T. Crainic, G. Perboli, S. Mancini, and R. Tadei. “Impact of generalized travel costs on satellite location in two-echelon VRP”. *PROCEDIA: SOCIAL & BEHAVIORAL SCIENCES*, forthcoming, 2011.
- [Cra+11d] T. Crainic, S. Mancini, G. Perboli, and R. Tadei. “Multi-start heuristics for the Two-Echelon Vehicle Routing Problem”. *LECTURE NOTES IN COMPUTER SCIENCE*, 6622, 2011, pp. 179–190.
- [PTV11] G. Perboli, R. Tadei, and D. Vigo. “The Two-Echelon Capacitated Vehicle Routing Problem: models and math-based heuristics”. *TRANSPORTATION SCIENCE*, forthcoming, 2011. DOI: 10.1287/trsc.1110.0368.
- [Cra+10c] T. Crainic, G. Perboli, S. Mancini, and R. Tadei. “Two-Echelon Vehicle Routing Problem: A Satellite Location Analysis”. *PROCEDIA: SOCIAL & BEHAVIORAL SCIENCES*, 2, 2010, pp. 5944–5955.
- [DPT10] F. Defflorio, G. Perboli, and R. Tadei. “Freight distribution performance indicators for service quality planning in large transportation networks”. *FLEXIBLE SERVICES AND MANUFACTURING JOURNAL*, 22, 2010, pp. 36–60.
- [PTM10] G. Perboli, R. Tadei, and F. Masoero. “New Families of Valid Inequalities for the Two-Echelon Vehicle Routing Problem”. *ELECTRONIC NOTES IN DISCRETE MATHEMATICS*, 36, 2010, pp. 639–646.
- [CPT09] T. Crainic, G. Perboli, and R. Tadei. “TS2PACK: A Two-Level Tabu Search for the Three-dimensional Bin Packing Problem”. *EUROPEAN JOURNAL OF OPERATIONAL RESEARCH*, 195, 2009, pp. 744–760.
- [TRP09b] R. Tadei, N. Ricciardi, and G. Perboli. “The Stochastic p-Median Problem with Unknown Cost Probability Distribution”. *OPERATIONS RESEARCH LETTERS*, 37, Issue 2, 2009, pp. 135–141.
- [CPT08] T. Crainic, G. Perboli, and R. Tadei. “Extreme-Point-based Heuristics for the Three-Dimensional Bin Packing problem”. *INFORMS JOURNAL ON COMPUTING*, 20, 2008, pp. 368–384.

- [PPR08] G. Perboli, F. Pezzella, and T. R. “EVE-OPT: an Hybrid Algorithm for the Capability Vehicle Routing Problem”. *MATHEMATICAL METHODS OF OPERATIONS RESEARCH*, 68, 2008, pp. 361–382.
- [Cra+07a] T. Crainic, G. Perboli, M. Pezzuto, and R. Tadei. “Computing the Asymptotic Worst-case of Bin Packing Lower Bounds”. *EUROPEAN JOURNAL OF OPERATIONAL RESEARCH*, 183, 2007, pp. 1295–1303.
- [Cra+07b] T. Crainic, G. Perboli, M. Pezzuto, and R. Tadei. “New Bin Packing Fast Lower Bounds”. *COMPUTERS & OPERATIONS RESEARCH*, 34, 2007, pp. 3439–3457.
- [TPDC02] R. Tadei, G. Perboli, and F. Della Croce. “A heuristic algorithm for the Auto-Carrier transportation problem”. *TRANSPORTATION SCIENCE*, 36, 2002, pp. 55–62.

Book chapters

- [Col+03] L. Colaneri, F. D. Croce, G. Perboli, and R. Tadei. “A heuristic procedure for Rack Configuration in the Space Vehicle Accommodation problem”. In: T. Ciriani, G. Fasano, S. Gliozzi, and R. Tadei (eds.), *Operations Research in Space and Air*, Kluwer Academic Publishers, 2003, pp. 27–42.
- [Man+rt] S. Mancini, T. G. Crainic, G. Perboli, and R. Tadei. “A GRASP with Path-Relinking metaheuristic for the Two-Echelon Vehicle Routing Problem”. In: L. D. Gaspero, A. Schaerf, and T. Stützle (eds.), *MIC 2011, Proceedings of the 9th Metaheuristics International Conference*, forthcoming, S1–26–1–S1–26–7.

Books (authored)

- [GGP05] M. Ghirardi, A. Grosso, and G. Perboli. *Esercizi di Ricerca Operativa*. Esculapio, 2005.

Proceedings of peer-reviewed international conferences

- [Bur+11] G. Burzio, L. Guidotti, G. Perboli, and R. Tadei. “A Subjective Field Operational Test on LDW Impact - Lessons Learned and Preliminary Results”, 2011, pp. 605–607.
- [GPS11] M. Ghirardi, G. Perboli, and D. Sasia. “Maximizing the Throughput of multimodal logistic platforms by simulation-optimization: the Duferco case study”. *Proceedings of 6th IEEE Conference on Automation Science and Engineering*, 2011, forthcoming.
- [PCT11a] G. Perboli, T. Crainic, and R. Tadei. “An Efficient Metaheuristic for Multi-Dimensional Multi-Container Packing”. *Proceedings of 6th IEEE Conference on Automation Science and Engineering*, 2011, forthcoming.
- [Bur+10a] G. Burzio, L. Guidotti, R. Montanari, G. Perboli, and R. Tadei. “A subjective field test on lane departure warning function - euroFOT”. *Proceedings of TRA-Transport Research Arena - Europe 2010*, 2010.
- [Bur+10b] G. Burzio, L. Guidotti, G. Perboli, M. Settanni, R. Tadei, and F. Tesauri. “Investigating the impact of a Lane Departure Warning system in real driving conditions - A subjective Field Operational Test”. *Proceedings of European Conference on Human Centred Design for Intelligent Transport Systems*, HUMANIST publications, 2010, pp. 313–322.
- [Cra+10b] T. Crainic, G. Perboli, S. Mancini, and R. Tadei. “New fast heuristics for the Two-Echelon Vehicle Routing Problem,” *TRISTAN VII*, 2010, pp. 1–4.
- [Tad+10] R. Tadei, N. Ricciardi, G. Perboli, and M. M Baldi. “An Efficient Heuristic for the Transshipment Location Problem under Uncertainty with Lower and Upper Capacity Constraints”. *Proceedings of CIRO 2010*, 2010.

- [Bur+09] G. Burzio, G. Mussino, R. Tadei, G. Perboli, M. Dell’Amico, and L. Guidotti. “A subjective field test on lane departure warning function in the framework of the euroFOT project”. *Human System Interactions, 2009. HSI ’09*, IEEE Press, 2009, pp. 608–610. DOI: 10.1109/HSI.2009.5091047.
- [Cra+09] T. Crainic, S. Mancini, G. Perboli, and R. Tadei. “A Branch and Bound for the two-echelon vehicle routing problem”. *Odysseus 2009*, 2009, pp. 1–6.
- [Cra+08b] T. Crainic, S. Mancini, G. Perboli, and R. Tadei. “Lower bounds for the Two-Echelon Vehicle Routing Problem”. *9th EU/MEeting on Metaheuristics for Logistics and Vehicle Routing*, 2008.
- [CPT07] T. Crainic, G. Perboli, and R. Tadei. “UniPack: a new heuristic framework for Multi-Dimensional Packing Problems”. *Proceedings of MIC 2007 The Seventh Metaheuristics International Conference*, 2007, pp. 1–6.
- [GF+07] J. Gonzalez Felius, G. Perboli, R. Tadei, and D. Vigo. “The Two-Echelon Capacitated Vehicle Routing Problem”. *Proceedings of the 22th European Conference on Operational Research*, 2007.
- [CPT06] T. Crainic, G. Perboli, and R. Tadei. “New Heuristics for Three-Dimensional Packing Problems”. *Proceedings of Odysseus 2006 Freight Transportation and Logistics*, 2006, pp. 120–122.
- [CPT04] T. Crainic, G. Perboli, and R. Tadei. “Two-Level Tabu Search for 3-D Orthogonal Bin Packing”. *Proceedings of INFORMS Annual Meeting*, 2004.
- [CPT03] T. Crainic, G. Perboli, and R. Tadei. “An Interval Graph-based Tabu Search Framework for Multi-dimensional Packing”. *Proceedings of Odysseus 2003 Freight Transportation and Logistics*, 2003, pp. 1–6.
- [Per+01] G. Perboli, T. R., F. D. Croce, and L. Colaneri. “A heuristic procedure for the Space Cargo Rack Configuration Problem”. *Proceedings 13th European Conference on Combinatorial Optimization*, 2001.
- [PT00] G. Perboli and F. Tadei R. and Della Croce. “A heuristic algorithm for the Auto-Carrier Transportation Problem”. *Proceedings of the 17th European Conference on Operational Research*, 2000.
- [PTDC00] G. Perboli, R. Tadei, and F. Della Croce. “A heuristic algorithm for the Auto-Carrier Transportation Problem”. *Proceedings of Odysseus 2000 Freight Transportation and Logistic*, 2000.
- [Bur+h] G. Burzio, L. Guidotti, G. Perboli, and R. Tadei. “A subjective field operational test on LDW impact - Lessons learned and preliminary results”, 8th ITS European Congress.

Other

- [Cra+11b] T. Crainic, S. Mancini, G. Perboli, and R. Tadei. *Heuristics for the two-echelon vehicle routing problem: A multi-start approach*. Tech. rep. CIRRELT, CIRRELT-2011-16, 2011.
- [PCT11b] G. Perboli, T. Crainic, and R. Tadei. *An efficient meta-heuristic for multi-dimensional multi-container packing*. Tech. rep. CIRRELT-2011-14, 2011, submitted.
- [Tad+11] R. Tadei, G. Perboli, N. Ricciardi, and M. M. Baldi. *The Transshipment Location Problem under Uncertainty with Lower and Upper Capacity Constraints*. Tech. rep. CIRRELT-2011-31, 2011, submitted.
- [Bal+10] M. Baldi, T. Crainic, G. Perboli, and R. Tadei. *The Generalized Bin Packing Problem*. Tech. rep. 2010, submitted.

- [Cra+10a] T. Crainic, S. Mancini, G. Perboli, and R. Tadei. *Multi-start heuristics for the two-echelon vehicle routing problem*. Tech. rep. CIRRELT, CIRRELT-2010-30, 2010.
- [PTM09] G. Perboli, R. Tadei, and F. Masoero. *Valid inequalities for the two-echelon capacitated vehicle routing problem*. Tech. rep. CIRRELT-2009-39, 2009.
- [TRP09a] R. Tadei, N. Ricciardi, and G. Perboli. *A Lagrangian heuristic for the capacitated transshipment location problem under uncertainty*. Tech. rep. CIRRELT-2009-56, 2009.
- [Cra+08a] T. Crainic, S. Mancini, G. Perboli, and R. Tadei. *Clustering-based heuristics for the two-echelon vehicle routing problem*. Tech. rep. CIRRELT, CIRRELT-2008-55, 2008.

B3. HIGH LEVEL INTERNATIONAL AWARDS AND RECOGNITIONS

Best paper award	Finalist at the best paper award of the seventh annual IEEE Conference on Automation Science and Engineering (IEEE CASE 2011).
Foreign academic qualification	In 2006, he obtained in France the qualification as maître de conférence for the sections "Mathématiques appliquées et applications des mathématiques" (26), "Informatique" (27) et "Génie informatique, automatique et traitement du signal" (61) of Conseil National des Universités.

B4. RESEARCH PERIODS ABROAD

Last 5 academic years

From (mm/yyyy)	To (mm/yyyy)	Institution/University	Role
07/2011	08/2011	CRT - Montréal	Invited researcher
04/2010	05/2010	CRT - Montréal	Invited researcher
08/2009	08/2009	CRT - Montréal	Invited researcher
07/2008	07/2008	CRT - Montréal	Invited researcher
07/2007	08/2007	CRT - Montréal	Invited researcher
05/2006	06/2006	CRT - Montréal	Invited researcher

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C. TEACHING ACTIVITIES

C1. TEACHING IN CHARGE

Number of credits (CFU) per academic year, level, scientific sector (S.S.D.), and language - Last 5 academic years

Academic Year (yyyy/yyyy)	Bachelor		Master		Ph.D.		Specializing Master		S.S.D.	Total
	Italian	English	Italian	English	Italian	English	Italian	English		
2010/2011	5		5						MAT/09	10
2009/2010	5		5						MAT/09	10
2009/2010			5						INGINF/04	5
2008/2009	5								MAT/09	5
Total	15		15							30

C2. ASSISTANT TEACHING

Number of credits (CFU) per academic year, level, scientific sector (S.S.D.), and language - Last 5 academic years

Academic Year (yyyy/yyyy)	Bachelor		Master		Ph.D.		Specializing Master		S.S.D.	Total
	Italian	English	Italian	English	Italian	English	Italian	English		
2010/2011			5						MAT/09	5
2009/2010	10		5						MAT/09	15
2008/2009	10		10						MAT/09	20
2007/2008	15		5						MAT/09	20
2006/2007	10		5						MAT/09	15
Total	45		30							75

C3. PH.D. SUPERVISION

Specify only the number of Ph.D. Laureates that you have supervised - Last 5 academic years

Academic Year	Ph.D. Laureates
2010/2011	1
Total	1

D. MANAGEMENT ACTIVITIES

D1. RESEARCH PROJECTS MANAGEMENT

FP7, PRIN, etc. – N.B.: no industrial contracts (see D5). Specify only the projects where you have been General coordinator or Research Unit coordinator - Last 5 academic years

Project name (Sponsor)	Project type L: Local N: National E: European O: Other	Period (yyyy/yyyy)	Project coordinator	Research Unit coordinator
ORNet (Politecnico di Torino)	L	2007/2009	X	X

D2. ROLE AND MEMBERSHIP IN BOARDS/COMMITTEES/RESEARCH CENTERS ETC.

Type	Name	Role	Period (yyyy/yyyy)
Committee	Odysseus 2012	Member of the Scientific Committee	2011-2012
Research Center	CIRRELT	Associate Member	2008-Today
University	UQAM – Université du Québec a Montréal	Member of the "Chaire de recherche industrielle du CRSNG en management logistique"	2008-2010
Board	AIRO	AIRO Steering Committee member	2004-2007
Board	AIRONews	Editorial Board member	1999-2005

D3. UNIVERSITY MANAGEMENT

Dean, Dept. Director, Bachelor/Master/Ph.D. Coordinator, etc. - Last 5 academic years

Type	Period (yyyy/yyyy)
Chief of LabORO - Laboratory of Operations Research and Optimization	2008-Today
Member of <i>Commissione Comunicazione Esterna</i> of the III Engineering School of Politecnico di Torino	2006-today
Ph.D. Students Dept. representative	2006-2008

D4. OR COMMUNITY MANAGEMENT

Conference organization, CIRO/AIRO/EURO/IFORS activities, etc.

Type	Period (yyyy/yyyy)
Chair of the Young Thematic Branch of AIRO	2006-2008
Chair of the Organizing Committee of the I FIMA International Conference - Models and Methods for Human Genomics	2005-2006
Member of the Organizing Committee of the International Conference AIROWINTER 2004	2003-2004
Member of the Organizing Committee of the International Conference AIROWINTER 2003	2003-2004
Project Manager of the unit for the development of the web-services of AIRO – The Italian Operations Research Society	2001-2002
Member of the Organizing Committee of the International Conference AIRO97	1996-1997
Member of the Organizing Committee of XV Euro Summer Institute (ESI XV)	1996-1997

D5. TECHNOLOGY TRANSFER MANAGEMENT

Industrial contracts (only if Project Leader), consultancy services, workshop/seminar for companies, etc.

Type	Period (yyyy/yyyy)
Industrial Contract with BDS srl, Turin, for the development and the analysis of Customer Satisfaction and Profiling questionnaires	2008-Today
Coordinator of ICARO2 Project, funded by HP Philanthropic Grants	2002-2003
Coordinator of ICARO Project, funded by HP Philanthropic Grants	2000-2001

E. OTHER USEFUL INFORMATION

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