Latest update: June 5, 2024

Stefano Gualandi

Curriculum Vitae

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Place, date of birth:	Pavia, 13 March 1975	ORCID:	`http://orcid.org/0000-0002-2111-3528`
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Research Interests

Computational Optimization [J30, J26, J11, J9, P29], **Computational Optimal Transport** [J29, J25, J24, P28, P25, P22], **Combinatorial Optimization** [J27, J15, J6], **Integer Programming** [J16, J13, J12, J10, J2, J1], **Nonlinear Programming** [J18, J14, J19], **Optimization Algorithms for Machine Learning** [J17, R2, P30], **Wireless Networks** [J8, J7, J5, J4, J3], **Data Science** [J28, J23, J22, J21, J20]

Research Positions and Qualifications

2023–*present* **Professor in Operations Research (SSD MAT/09)**,
University of Pavia, Dept. of Mathematics.
☞ Leading the *Computational Optimization Research Group*: `https://compopt.it`

2019–2023 **Associate Professor in Operations Research (SSD MAT/09)**,
University of Pavia, Dept. of Mathematics.

14 Apr 2021 **National Scientific Qualification to function as Full Professor**.
Sector: 01/A6 - Operations Research

2016–19 *(3 years)* **Senior Tenure Track (RTD-B)**,
University of Pavia, Dept. of Mathematics.

2013–16 *(38 months)* **Researcher**, *AntOptima, SA*
Spin-off by Istituto Dalle Molle di Studi sull'Intelligenza Artificiale (IDSIA), Lugano.
☞ EU-FP7 Research Project: White Room based on reconfigurable robotic island for optoelectronics

2011–13 *(34 months)* **Postdoctoral researcher**, *University of Pavia, Dept. of Mathematics.*
☞ Project: Algorithm Engineering for Networks and Data. Awarded as Dote Ricercatori Grant

2008–10 *(21 months)* **Postdoctoral researcher**, *Politecnico di Milano, Dept of Electronics and Computer Science.*
☞ Project: Hybrid constraint and integer programming for very large scale optimization problems

2002–05 *(3 years)* **Research Assistant**, *Université Catholique de Louvain (UCL), Louvain-la-Neuve, Belgium.*
☞ EU-RTP Euclide project: Development of a mission planner for teams of Unmanned Aerial Vehicles

Education

2005–08 **PhD in Information Technology (awarded: 22.05.2008)**,
Dept of Electronics and Computer Science, Politecnico di Milano.
☞ Thesis: *Enhancing Constraint Programming-based Column Generation for Integer Programs*

2002–04 **MSc in Artificial Intelligence (as part-time student)**, *Katholieke Universiteit Leuven, Belgium*, Grade: magna cum laude.
☞ Master Thesis: *Distributed artificial intelligence and multiagent systems*

1996–02 **MSc in Computer Engineering**, *University of Pavia*, Grade: 110/110 cum laude.
☞ Master Thesis: *Studio e applicabilità del constraint programming al route planning*

Institutional responsibilities

2020–*present* **Member of the Research Steering Committee**,
University of Pavia, Dept. of Mathematics.

2020–*present* **Reference person for the Master degree in Mathematics**,
University of Pavia, Dept. of Mathematics.

2019–*present* **Reference person for "Terza Missione"**, *University of Pavia, Dept. of Mathematics.*

2018–*present* **Coordinator of the "Lauree Magistrali Plus" (LM+) project**,
University of Pavia, Dept. of Mathematics, This project permits to our students to collaborate with industries for their MSc thesis.
☞ Project website: `https://matematica.unipv.it/laurea-magistrale-plus`

2021 **Gruppo di lavoro di ateneo per scouting di imprese e proposte per il Parco Cardano per l'innovazione sostenibile**, *(Decreto rettorale)*, University of Pavia.

2020 **Gruppo di lavoro di ateneo per lo sviluppo di un documento scientifico per la ripresa post-emergenza COVID**, *(Decreto rettorale)*, University of Pavia.

Supervision

Researchers and postdocs

2022–*present* **Monica Montardini**, *Researcher RTDa. Funded by PON, DM 1061.*

2021–*present* **Davide Duma**, *Researcher RTDb. Initialliy funded by Dipartimento di Eccellenza 2018–2022.*

2022–2023 **Claudio Tomasi**, *Postdoc.*

2023 **Luca Ferrarini**, *Postdoc.*

2021–22 **Gennaro Auricchio**, *Postdoc.*

PhD students

2023–*present* **Bernardo Forni**, *(XXXIX ciclo).*

2023–*present* **Gabor Riccardi**, *(XXXIX ciclo).*

2021–*present* **Ambrogio Maria Bernardelli**, *(XXXVII ciclo).*

2021–*present* **Lorenzo Bonasera**, *(XXXVII ciclo).*

2020–2023 **Eleonora Vercesi**, *(XXXVI ciclo)*, Now postdoc in Switzerland.

2019-23 **Luca Ferrarini**, *(XXXV ciclo)*, Now postdoc in Paris.

2019-23 **Andrea Codegoni**, *(XXXV ciclo)*, Hired by ArgoVision.

2019-23 **Lorenzo Zambon**, *(XXXV ciclo)*, Now postdoc in Switzerland.

2017-21 **Gennaro Auricchio**, *(XXXIII ciclo)*, Now postdoc in UK, (co-supervisor prof. M. Veneroni).

MSc/BSc student (dissertations)

2016–*present* I have supervised **16 BSc thesis** (lauree triennali) and **8 MSc thesis** (lauree magistrali), for both the Dept of Mathematics and the Dept of Engineering

Full list of dissertations: `https://mate.unipv.it/gualandi/for-students/`

PhD student examination

2024 **Krunal Kishor Patel**, Département de mathématiques et de génie industriel, Polytechnique Montréal, Supervisor: A. Lodi.

2023 **Jafar Jamal**, *(XXXV ciclo)*, University of Modena e Reggio Emilia, Supervisor: R. Montemanni.

2022 **Henri Lefebvre**, *(XXXV ciclo)*, University of Bologna, Supervisors: M. Monaci, E. Malaguti.

2022 **Federico Battista**, *(XXXV ciclo)*, Sapienza University of Rome, Supervisors: M. De Santis, F. Rossi, S. Smriglio.

2022 **Varun Murugan**, *(XXXIV ciclo)*, Universitè Libre de Brussels, Supervisors: T.J. Massart, F. Auricchio.

2021 **Ruth Walton**, University of Southampton, Postgraduate Research Graduate School on Mathematical Sciences, Supervisor: S. Coniglio.

Teaching Activities

PhD level

2019– **Member of the Faculty Board of the International PhD Program in Computational Mathematics and Decision Sciences**, *Joint program between University of Pavia and Università della Svizzera Italiana*, `http://compmat.unipv.it`.

Spring 2024 **Computational Optimal Transport**, *(24 hours)*, University of Pavia, Math Dept.

Spring 2010 **Solving Complex Optimization Problems with Constraint Modeling Languages**, *(20 hours)*, Politecnico di Milano, DEIB.

Master level

2022–*present* **Operations Research**, *MAT/09, 9 ECTS (1 year)*, University of Pavia, Math Dept.

2023 **Optimization for Deep Learning**, *MAT/09, (1 year)*, Almo Collegio Borromeo, Pavia.

2019–21 **Optimization Models and Algorithms for Data Science**, *MAT/09, 6 ECTS (3 years)*, University of Pavia, Math Dept.

2018–19 **Optimization Algorithms for Machine Learning**, *MAT/09, 1 ECTS (2 years)*, Collegio Ghislieri, Pavia.

Undergraduate level

2017–*present* **Programming 1**, *INF/01, 6 ECTS (6 years)*, University of Pavia, Math Dept.

2016–21 **Numerical Methods–Nonlinear Optimization**, *MAT/09, 3 ECTS (6 years)*, University of Pavia, Bioengineering Dept.

2016–17 **Programming 2**, *INF/01, 3 ECTS (1 year)*, University of Pavia, Math Dept.

Teaching assistant

Before 2013, I have been teaching assistant for the following courses at both master and undergraduate level:

2005–2013 **Politecnico di Milano, DEIB**, *MAT/09*, Foundations of Operations Research (both in Italian and English), Design and Analysis of Algorithms, Graph Optimization.

2004–2005 **Université Catholique de Louvain**, *INF/01*, Data structures and algorithms (in French), Introduction to Informatics (in French).

Research Grants

PRIN-PNRR 2024–25 **Head of Unit**, *Budget:* 232 300 €,
Awarded by Ministry of University and Research of Italy.
☞ Project: *Highly-specialized EXact Algorithms for Grid Operations at the National level*

EU-JRC 2022–23 **Principal Investigator**, *Budget:* 135 000 €,
Awarded by European Commission, Joint Research Center, Unit C.6, Seville, Spain.
☞ Project: *Development of a multimodal schedule-based route planner*

EUROSTAT 2020–21 **Principal Investigator**, *Budget:* 15 000 €,
Awarded by European Commission, Eurostat, Luxemburg.
☞ Project: *Development of a ready-to-use algorithm for the efficient computation of approximate Kantorovich-Wasserstein distance for large spatial maps*

EU-JRC 2017–18 **Principal Investigator**, *Budget:* 14 500 €,
Awarded by European Commission, Joint Research Center, Unit C.6, Seville, Spain.
☞ Project: *Application of routing to large time-dependent road networks*

NVIDIA 2018 **Principal Investigator**, Awarded by Nvidia with a GPU Quadro P6000 (value 5 700K €).
☞ Project: *Biomedical data analysis via Kantorovich metrics*

DOTA4ML 2017–18 **Principal Investigator**, Project supported by CINECA and the Italian Super Computing Resource Allocation (ISCRA).
☞ Project: *Distributed Optimal Transport Algorithms for Machine Learning*

FFABR 2017 **Principal Investigator**, Fondi per il Finanziamento delle Attività Base di Ricerca, MIUR. Budget: 3 000 €.

Industrial Research Projects

FEDEGARI 2021–24 **Principal Investigator**, *Budget:* 90 000 €, Funded by: `https://fedegari.com/`.
☞ Project: *Artificial Intelligence for Predictive Maintenance of Industrial Sterilizers*

CESI 2021–24 **Principal Investigator**, *Budget:* 75 000 € *(for Ph.D. grant)*, Funded by PON, DM 1061, 10/08/2021. Industrial partner: `https://www.cesi.it/`.
☞ Project: *AC-Optimal Power Flow model under uncertainties for Renewable Energy Sources*

LOGISHIFT 2018–19 **Principal Investigator**, *Budget:* 45 000 €, Funded by: `https://www.binarysystem.eu/`.
☞ Project: *Models and Algorithms of Mathematical Optimization for disruptions management in rail freight transportation*

COMDATA 2017–18 **Principal Investigator**, *Budget:* 28 500 €, Funded by: `https://www.comdata.it/`.
☞ Project: *Resource Allocation Optimization in Modern Call Centers*

Participation to Research Projects

CN-HPC 2022–25 **PNRR Centro Nazionale: HPC, Big Data e Quantum Computing**, *Research member (9 man/month)*, Spoke 6: Multiscale and Engineering.

NODES 2022–25 **PNRR Ecosistemi: Nord Ovest Digitale e Sostenibile**, *Research member (4 man/month)*, Spoke 6: Agrindustria primaria.

Euro HPC 2021-24 **Microcard: Numerical modeling of cardiac electrophysiology at the cellular scale**, *Research member (4 man/month)*, European research project, Horizon 2020.

DSF 2020-22 **Fluidica Digitale per le Scienze della Vita – Digital Smart Fluidics**, *Research member (6 man/month)*, Italian research project, Regione Lombardia.

EU FP7 2013–16 **White Room based on Reconfigurable Robotic Island for Optoeletronics**, *Work-package leader (full time)*, European research project.

ATM 2012–13 **Sistema di gestione ed ottimizzazione real-time del trasporto pubblico**, *Research member (full time)*, Industrial project.

MAIOR 2010 **Metodi di Constraint Programming e Ottimizzazione per la Generazione di Colonne**, *Research member (full time)*, Industrial project.

PRIN 2008 **Metodi di ottimizzazione per la soluzione di problemi di pianificazione e gestione nelle reti di telecomunicazioni**, *Research member*, Progetti di Ricerca di Interesse Nazionale.

PRIN 2006 **Pianificazione di reti wireless: modelli e algoritmi di ottimizzazione**, *Research member*, Progetti di Ricerca di Interesse Nazionale.

Euclide 2002–05 **Development of a mission planner for teams of Unmanned Aerial Vehicles**, Research member, European industrial project.

Awards

CPAIOR 2020 **Distinguished Paper Award**, *International Conference on Integration of Artificial Intelligence and Operations Research techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR).*
☞ *Primal Heuristics for Wasserstein Barycenters.* S. Gualandi, L.-M. Rousseau, P.-Y. Bouchet.

Invited Seminars

Dec 2022 **European Commission, Eurostat**, *Unit A.5*, Luxembourg.
☞ Title: *Computation of approximate Kantorovich-Wasserstein distance for large spatial maps*

Nov 2022 **European Commission, Joint Research Center**, *Unit C.6*, Seville, Spain.
☞ Title: *Mathematical Optimization into action: algorithms for public transport analysis*

Nov 2022 **Gaoling School of Artificial Intelligence, RUC**.
☞ Title: *Primal Parallel Heuristics for Computing Wasserstein Barycenters*

Sep 2022 **Radiomics Toolbox: Workflow&Quality Management**, *Fondazione Mondino*, Pavia.
☞ Title: *Deep Learning for Biomedical Images*

Sep 2022 **European Working Group on Practice of Operations Research**.
☞ Title: *OR for policy evaluation: Evaluating public transport by multimodal schedule-based routing*

Jun 2022 **Gruppo UMI – Matematica per l'Intelligenza Artificiale e il Machine Learning**.
☞ Title: *Computing Wasserstein Barycenters: The role of Linear Programming*

Dec 2021 **Zuse Institute of Berlin (ZIB)**, *MAI Division Seminar.*
☞ Title: *Computing Wasserstein Barycenters: The role of Linear Programming*

Sep 2021 **Radiomics Toolbox: Workflow&Quality Management**, *Fondazione Mondino*, Pavia.
☞ Title: *Deep Learning for Biomedical Images*

Feb 2021 **Deep Learning and Combinatorial Optimization**, *Institute for Pure and Applied Mathematics (IPAM), UCLA Campus, Los Angeles.*
☞ Title: *Discrete Optimal Transport by Parallel Network Simplex*

Feb 2020 **Current trends in Radiomics**, *Fondazione Mondino*, Pavia.
☞ Title: *Image Clustering using Wasserstein Metrics*

Jan 2020 **Combinatorial Optimization Workshop (COW)**, *Aussois, France.*
☞ Title: *A note on a GPU-based Network Simplex Algorithm*

May 2019 **Spring PhD School on Computational Mathematics, Statistics and Machine Learning**, *University of Pavia.*
☞ Title: *Computational Optimal Transport: A (biased) Overview*

Nov 2018 **University of Southampton**, *Department of Mathematical Sciences, UK.*
☞ Title: *Computing Kantorovich-Wasserstein Distances with the Network Simplex Algorithm*

Jan 2018 **Combinatorial Optimization Workshop (COW)**, *Aussois, France.*
☞ Title: *On the Computation of Distances between 2D-Histograms by Minimum Cost Flows*

Nov 2014 **Istituto di Matematica Applicata e Tecnologie Informatiche (CNR)**, *Pavia.*
☞ Title: *Public Transport and Big Data Analytics*

Jan 2014 **Combinatorial Optimization Workshop (COW)**, *Aussois, France.*
☞ Title: *On the separation of rank inequalities for the max stable set problem*

Nov 2013 **University of Aachen**, *Dept. of Mathematics.*
☞ Title: *Resource Constrained Shortest Paths*

Apr 2013 **University of Southern Denmark**, *Dept. of Mathematics and Computer Science, Odense.*
☞ Title: *Resource Constrained Shortest Paths with Super Additive Objective Functions*

Nov 2009 **Research Institute for Discrete Mathematics**, *Bonn. Invited by Prof. Bernard Korte.*
☞ Title: *k-Clustering Minimum Biclique Completion Via a Hybrid CP and SDP approach*

Apr 2009 **University of Southern Denmark**, *Dept. of Mathematics and Computer Science, Odense.*
☞ Title: *Graph Coloring via Constraint Programming-based Column Generation*

Short Visiting (less than two weeks)

Oct 2022 **Dagsthul Seminar: Data-Driven Combinatorial Optimization**, *Leibniz-Zentrum für Informatik, Germany.*

Nov 2018 **Visiting Researcher at University of Southampton**, *Dept of Mathematical Sciences.*

Sept 2018 **Visiting Researcher at CIRRELT and École Polytechnique de Montréal**, *Canada.*

Nov 2013 **Visiting Researcher at Aachen University**, *Germany.*

Sept 2013 **Guest Lecturer for DM204: Scheduling, Timetabling and Routing**, *Department of Mathematics and Computer Science, University of Southern Denmark, Odense.*

Apr 2013 **Visiting Researcher at University of Southern Denmark**, *Odense, DK.*

Conference Organization

IMATI CNR 2023 **Co-organizer**, *Istituto di Matematica Applicata e Tecnologie Informatiche, Pavia.*
☞ Conference: *Giornate Lions Magenes e Centenario del CNR*

INFORMS 2023 **Organizer**, *INFORMS Annual Meeting, Phoenix.*
☞ Session: *Machine Learning for Optimization*

EURO 2021 **Invited session organizer**, *European Conference on Operational Research.*
☞ Session: *Graph Coloring problems*

AIRO 2014 **Co-organizer**, *Annual Conference of the Italian Operations Research Society, Como.*
☞ Session: *Mixed Integer Linear Programming*

ISMP 2012 **Invited session organizer**, *International Symposium of Mathematical Programming.*
☞ Session: *Combinatorial Optimization: Generalizing shortest paths, cycles, and Steiner trees*

CPAIOR 2011 **Co-organizer**, *International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, Berlin.*
☞ Workshop: *Workshop on Hybrid Methods for Nonlinear Combinatorial Optimization Problems*

AIRO 2009 **Organizer**, *Annual Conference of the Italian Operations Research Society, Siena.*
☞ Session: *Hybrid Methods of Constraint Programming and Integer Programming*

Conference presentations (as speaker)

NTTS 2023 **European Conference on New Techniques and Technologies for Statistics**, *EU Commission, Brussels.*
☞ Talk: *On the Application of the Fourier-based Distance to Spatial Statistics*

uRos 2022 **International Conference on the Use of R in Official Statistics**, *National Institute of Statistics, Romania.*
☞ Talk: *Efficient Computation of Kantorovich-Wasserstein distances for large spatial maps*

OR63 2021 **OR Society's Annual Conference in UK**, *University of Southampton*, (Invited session).
☞ Talk: *(Some) Facets of the Total Matching Polytope*

CPAIOR 2019 **International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems**, Thessaloniki, Greece.
☞ Talk: *Computing Wasserstein Barycenters via Linear Programming*

EWGPOR 2019 **EURO Working Group on Practice of OR**, *Bologna.*
☞ Talk: *Optimization via Machine Learning: Application to Modern Call Centers Management*

ODS 2019 **International Conference on Optimization and Decision Science**, *Genova.*
☞ Talk: *The Maximum Nearby Flow Problem*

ISMP 2018 **International Symposium of Mathematical Programming**, *Bordeaux.*
☞ Talk: *Approximate Wasserstein Distances of order 1 between grey scale images (2D Histograms)*

WIRN 2015 **Italian Workshop on Neural Networks**, *Vietri sul Mare, Salerno.*
☞ Talk: *Dynamic Production Scheduling of High Power Multiemitter Diode Lasers*

EURO 2013 **European Conference on Operational Research**, *Roma.*
☞ Talk: *Resource Constrained Shortest Paths with Side Constraints and Non Linear Costs*

CP 2012 **International Conference on Principles and Practice of Constraint Programming**, *Quebec City, Canada.*
☞ Talk: *Resource constrained shortest paths with a super additive objective function*

ISMP 2012 **International Symposium of Mathematical Programming**, *Berlin.*
☞ Talk: *Resource Constrained Shortest Path with a super-additive objective function*

AIRO 2011 **Annual Conference of the Italian Operational Research Society**, *Brescia.*
☞ Talk: *On the Resource Constrained Shortest Path Problem with Sequence Constraints Arising in Crew Scheduling*

CPAIOR 2010 **International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems**.
☞ Talk: *On the Design of the Next Generation Access Networks*

CPAIOR 2010 **International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems**.
☞ Talk: *A constraint programming approach for the service consolidation problem*

CTW 2010 **Cologne Twente Workshop on Graphs and Combinatorial Optimization**.
☞ Talk: *A Branch-and-Price Approach to the k-Clustering Minimum Biclique Completion Problem*

CTW 2010 **Cologne Twente Workshop on Graphs and Combinatorial Optimization**.
☞ Talk: *On the Design of the Fiber To The Home Networks*

ISCO 2010 **International Symposium on Combinatorial Optimization**, *Hammamet, Tunisia.*
☞ Talk: *On minimum reload cost cycle cover*

AIRO 2009 **Annual Conference of the Italian Operational Research Society**, *Siena.*
☞ Talk: *Graph Multicoloring via Constraint Programming-based Column Generation*

CPAIOR 2009 **International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems**.
☞ Talk: *k-Clustering Minimum Biclique Completion Via a Hybrid CP and SDP approach*

INOC 2009 **International Network Optimization Conference**.
☞ Talk: *Graph Coloring via Constraint Programming-based Column Generation*

CTW 2008 **Cologne Twente Workshop on Graphs and Combinatorial Optimization**.
☞ Talk: *Exact Graph Coloring via Hybrid Approaches*

INOC 2007 **International Network Optimization Conference**.
☞ Talk: *Scheduling and routing in wireless multi-hop networks by column generation*

Recent researchers invited for scientific collaborations

The full list of invited seminars is available at `https://compopt.it/news/seminars`

May 2024 **prof. Bartolomeo Stellao**, *Princeton University.*
☞ Seminar: *Learning for Real-Time Decision Making*

Apr 2023 **prof. Axel Parmentier**, *Ecole des Ponts, Paris.*
☞ Seminar: *Learning with combinatorial optimization layers and applications to dynamic VRP*

Feb 2023 **Juan Nicolas Ibanez and Martina Fischetti**, *European Commission's Joint Research Centre (EC-JRC).*
☞ Seminar: *Routing over large transport networks across Europe: challenges and opportunities*

Nov 2022 **prof. Yuri Faenza**, *Columbia University*.
☞ Seminar: *Incremental knapsack problems*

Jun 2022 **prof. Austin Buchanan**, *Oklahoma State University.*.
☞ Seminar: *Imposing contiguity constraints in political districting models*

May 2022 **Giorgio Corani**, *Istituto Dalle Molle di Studi sull'Intelligenza Artificiale (IDSIA)*.
☞ Seminar: *A Bayesian approach to the problem of forecast reconciliation*

Mar 2022 **prof. Thiago Serra**, *Bucknell University, Pennsylvania, US*.
☞ Seminar: *What Makes Neural Networks So Expressive, and What Could Make Them Smaller? Some Answers Based on Polyhedral Theory and Mixed-Integer Linear Programming*

Mar 2022 **prof. Stefano Coniglio**, *University of Southampton*.
☞ Seminar: *Norm minimization problems in data science: an integer programming perspective*

Feb 2021 **Mathieu Besancon**, *Zuse Institute Berlin*.
☞ Seminar: *Frank-Wolfe methods for large-scale constrained optimization*

Editorial Activities

2020–*present* **Associate Editor of INFORMS Journal on Computing**.

2008–*present* **Reviewer for the following journals**.
Mathematical Programming, European Journal of Operational Research, European Journal of Computational Optimization, INFORMS Journal on Computing, Mathematical Methods of Operational Research, Discrete Applied Mathematics, Discrete Optimization, Discrete Algorithms, Networks, Journal of Heuristics, Operations Research Letters, Information Processing Letters, Journal of Artificial Intelligence Research, Ad Hoc Networks, Computer Communications, Journal of Parallel and Distributed Computing, Constraints

2022–*present* **Senior PC member**, *Association for the Advancement of Artificial Intelligence (AAAI)*.

2008–*present* **PC member for main international conferences (for AI conferences, I am involved in the Optimization-related tracks)**.
IPCO, CPAIOR, ICORES, NeurIPS, ICML, AAAI, CP, IJCAI, ECAI

Bibliometrics

Documents: 30 journals article and 30 conferences proceedings

Scholar, *Citations: 1154, H-index: 19*.

Scopus, *Citations: 676, H-index: 15*.

ISI Web of Science, *Citations: 498, H-index: 12*.

Journal Articles

[J30] **On the generation of metric TSP instances with a large integrality gap by branch-and-cut**, *E. Vercesi, S. Gualandi, M. Mastrolilli, L.M. Gambardella*, Mathematical Programming Computation, 2023, 1–28, doi:10.1007/s12532-023-00235-7.

[J29] **The Fourier discrepancy function**, *G. Auricchio, A. Codegoni, S. Gualandi, L. Zambon*, Communications in Mathematical Sciences, 2023, 21 (3), 627-–639, doi:10.4310/CMS.2023.v21.n3.a2.

[J28] **Kinetic Description of the Body Size Distributions of Species**, *S. Gualandi, G. Toscani, E. Vercesi*, Mathematical Models and Methods in Applied Sciences, 2022, doi:10.1142/S021820252250066X.

[J27] **Total Coloring and Total Matching: Polyhedra and Facets**, *L. Ferrarini, Gualandi*, European Journal of Operational Research, 303, Issue 1, 129–142, https://doi.org/10.1016/j.ejor.2022.02.025.

[J26] **On computing the bound of the closure of rank inequalities with a small right-hand side and the maximum subgraph with bounded stability number problem**, *S. Coniglio, S. Gualandi*, INFORMS Journal on Computing 34 (2), 1006–1023, `https://doi.org/10.1287/ijoc.2021.1115`.

[J25] **On the Computation of Kantorovich-Wasserstein Distances between 2D-Histograms by Uncapacitated Minimum Cost Flows**, *F. Bassetti, S. Gualandi, M. Veneroni*, SIAM Journal on Optimization, 30 (3), 2441–2469, 2020, `https://doi.org/10.1137/19M1261195`.

[J24] **The Equivalence of Fourier-based and Wasserstein Metrics on Imaging Problems**, *G. Auricchio, A. Codegoni, S. Gualandi, G. Toscani, M. Veneroni*, Rendiconti Lincei 31 (3), 627–649, DOI: 10.4171/RLM/908.

[J23] **Size distribution of cities: A kinetic explanation**, *S. Gualandi, G. Toscani*, Physica A: Statistical Mechanics and its Applications 524, 221–234, 2019, DOI: 10.1016/j.physa.2019.04.260.

[J22] **Human behavior and lognormal distribution: A kinetic description**, *S. Gualandi, G. Toscani*, Mathematical Models and Methods in Applied Sciences, vol. 29(4), 717–753, 2019, DOI: 10.1142/S0218202519400049.

[J21] **Call center service times are lognormal: A Fokker-Planck description**, *S. Gualandi, G. Toscani*, Mathematical Models and Methods in Applied Sciences. vol. 28 (8), 1513–1527, 2018, DOI: 10.1142/S0218202518500410.

[J20] **Pareto tails in socio-economic phenomena: A kinetic description**, *S. Gualandi, G. Toscani*, Economics: The Open-Access, Open-Assessment E-Journal, vol. 12(31), 1–17, 2018, DOI: 10.5018/economics-ejournal.ja.2018-31.

[J19] **Handling Preferences via Lexicographic Optimization in Project Assignment**, *M. Chiarandini, R. Fagerberg, S. Gualandi*, Annals of Operations Research, vol. 275(1), 39–78, 2017, DOI: 10.1007/s10479-017-2710-1.

[J18] **Lower bounding procedure for the asymmetric quadratic traveling salesman problem**, *B. Rostami, F. Malucelli, P. Belotti, S. Gualandi*, European Journal of Operational Research, vol. 253(3): 584–592, 2016, DOI: 10.1016/j.ejor.2016.03.031.

[J17] **A Lagrangian Propagator for Artificial Neural Networks in Constraint Programming**, *M. Lombardi, S. Gualandi*, Constraints, vol. 21, 435–462, 2016, DOI: 10.1007/s10601-015-9234-6.

[J16] **Delay Management in Public Transportation: Service Regularity Issues and Crew Re-scheduling**, *S. Carosi, S. Gualandi, F. Malucelli, E. Tresoldi*, Transportation Research Procedia, vol. 10: 483–492, 2015, DOI: 10.1016/j.trpro.2015.09.002.

[J15] **Coordinated Cutting Plane Generation via Multi-objective Separation**, *E. Amaldi, S. Coniglio, S. Gualandi*, Mathematical Programming - Series A, vol. 143(1): 87–110, 2014, DOI: 10.1007/s10107-012-0596-x.

[J14] **On minimum reload cost cycle cover**, *G. Galbiati, S. Gualandi, F. Maffioli*, Discrete Applied Mathematics, vol. 164(1): 112–120, 2014, DOI: 10.1016/j.dam.2011.12.006.

[J13] **Constraint Programming-based Column Generation (INVITED SURVEY)**, *S. Gualandi, F. Malucelli*, Annals of Operations Research, vol. 204(1): 11–32, 2013, DOI: 10.1007/s10479-012-1299-7.

[J12] **Branch-and-price approach to the k-clustering minimum biclique completion problem**, *S. Gualandi, F. Maffioli, C. Magni*, International Transactions in Operations Research, vol. 20(1):101–117, 2013, DOI: 10.1111/j.1475-3995.2012.00860.x.

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Software packages

DOT-Lib **Discrete Optimal Transport Library**,
C++ implementation with a GPU CUDA kernel.
https://github.com/stegua/dotlibD

OT1D **Discrete Optimal Transport in 1D by Linear Programming**,
C++ implementation with Python wrappers, DOI: 10.5281/zenodo.7809831.
https://github.com/stegua/ot1d

S-KWD **Computing Kantorovich-Wasserstein distances for large spatial maps**,
C++ implementation with Python wrapper and R-CRAN package,
https://cran.r-project.org/web/packages/SpatialKWD.
https://github.com/eurostat/Spatial-KWD

Technical skills

Programming C/C++, C#, Python, Julia, Java, Matlab/Octave

Math Progr. Gurobi, CPLEX, Couenne, CBC, Pyomo, AMPL

Spoken languages

Italian (mother tongue), English (fluent), French (fluent)

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