

PERSONAL INFORMATION

Fabrizio Rossi

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Date of birth March 1967 | **Nationality** Italian

WORK EXPERIENCE

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- 2019 – Present **Full Professor of Operations Research**
DISIM, University of L'Aquila
- 2025 – Present **Vice-rector for Teaching**
University of L'Aquila
- 2019 – 2024 **Member of the Administration Board**
University of L'Aquila
- July 2015 – 2016 **Lecturer**
Scuola Nazionale dell'Amministrazione
e-Government courses
- 2014–June 2015 **Adjunct Professor**
Scuola Nazionale dell'Amministrazione
Professor of Innovative Technologies for Web Applications and e-Government
- 2011 – 2013 **Lecturer**
Scuola Nazionale dell'Amministrazione
e-Government courses
- 2010 – 2012 **Member of the Administration Board**
University of L'Aquila
- 2005 – 2019 **Associate Professor of Operations Research**
DISIM, University of L'Aquila
- 1997 – 2005 **Assistant Professor of Operations Research**
University of L'Aquila
- Visiting Scholarships**
- 2019 Department of Statistics and Operations Research, Wien University, Austria
- 2015 Wisconsin Institute for Discovery, University of Wisconsin-Madison, Madison (USA)
- 2013 Wisconsin Institute for Discovery, University of Wisconsin-Madison, Madison (USA)

1998 Department of Industrial Engineering and Operations Research, Columbia University, New York, USA

EDUCATION AND TRAINING

1996 Visiting Student

Department of Industrial Engineering and Operations Research
Columbia University, New York, USA

1994–1996 PhD in Operations Research

Sapienza University of Rome

1993 Research fellow

Centro Vito Volterra
University of Rome Tor Vergata

1992 Laurea Degree in Electronic Engineering

Sapienza University of Rome

RESEARCH AND TEACHING

Research

1996-present Fabrizio Rossi's scientific activity concerns theoretical and computational study of exact and approximation algorithms for *hard* Combinatorial Optimization problems arising in telecommunication, in production manufacturing, in logistics, in service industry and, recently, in tourism and biology. The methodological focus of the research is on Integer Linear and Non-Linear mathematical programming models to design algorithms capable to solve large-scale problems identified in industrial contexts.

Research projects

(as a Coordinator/Principal Investigator)

- 2025–2027 Coordinator of the University of L'Aquila research unit, research project *Infrastructure Investments for Optimal Rail REPLACEMENT Bus Services*, funded by the Research Council of Norway.
- 2023–2025 Coordinator of the University of L'Aquila research unit, research program PRIN 2022, *Precision medicine in renal replacement therapy for critically ill patients*.
- 2010–2012 Coordinator of the University of L'Aquila research unit, research program PRIN 2008, *Mixed Integer Linear Programming methods for designing and implementing wireless networks*.
- 2008–2009 Principal Investigator of the research project *Optimizing analog to digital transition in broadcasting systems*, funded by Fondazione "Ugo Bordon".
- 2007–2011 Coordinator of the research grant *Models and algorithms for the Maximum Stable Set problem*; Dipartimento di Informatica, Università di L'Aquila.
- 2007–2009 Coordinator of the University of L'Aquila research unit, research program PRIN 2006, *Models and algorithms for joint power and frequency assignment in large scale wireless networks*.
- 2006–2007 Coordinator of the research grant *Optimization algorithms for Customer Relationship Management*; Dipartimento di Informatica, Università di L'Aquila.
- 2006 Principal Investigator of the research project *Algoritmi per la gestione di servizi di connettività su reti SDH*, Dipartimento di Informatica, Università di L'Aquila (industry funded).
- 2005–2007 Principal Investigator of the research project *Optimization algorithms for Customer Relationship Management*, Dipartimento di Informatica, Università di L'Aquila (industry funded).
- 2004–2005 Coordinator of the University of L'Aquila research unit, research project *MAS-A Multimission Automatic Scheduler*, funded by European Space Agency (ESA) in the framework *ITI-Innovation Triangle Initiative*

2002–2005 Coordinator of the University of L'Aquila research unit, research project SAILOR, *Satellite Integrated UMTS Emulator*, funded by the European Commission, program FP5-IST, Project ID: IST-2001-37266.

Awards

- 2023 Journal of Information Technology and Tourism (JITT), article of the year award, with A. Attanasio, M. Maravalle, H. Muccini, G. Scatena and F. Tarquini.
- 2014 INFORMS Computing Society (ICS) Prize 2014, with J. Linderoth, J. Ostrowski and S. Smriglio.
- 2009 University of L'Aquila Operations Research group (C. Arbib, F. Rossi F. e S. Smriglio), Second position among non US Universities, *Eighth Rothkopf Rankings of Universities, Contributions to the INFORMS Practice Literature, Interfaces*, Vol. 39 N. 6 (2009).
- 2006 *Euro Excellence in Practice Award (EEPA)*, Euro XXI, Iceland, Reykjavik, July 2-5, 2006: C. Mannino, F. Rossi, S. Smriglio, The Network Packing Problem in Terrestrial Broadcasting, *Operations Research* 54 (4), 611-626, (2006), finalist paper.

Teaching activities

- 1997–present University of L'Aquila: classes at Bachelor and Master Level. Current assignments: Data Analytics and Data Driven Decision, Network Algorithms and Foundations and Application of Machine Learning.
- 2009–present Courses for various International Master Programs at the Department of Engineering, Computer Science and Mathematics of the University of L'Aquila.
- 2012–2018 University of L'Aquila, Master in Web Technology, VII, IX, X e XI eds.
- 2004–2007 Courses in Operations Research and Combinatorial Optimization, University of Rome "Tor Vergata"
- 2013–2016 Lecturer and Adjunct Professor at the Italian National School of Administration (Scuola Nazionale dell'Amministrazione).
- 2001-2017 Member of the PhD Board in Operations Research, Automation and Operations Research, Automation, Bioengineering and Operations Research, Sapienza University of Rome.

PUBLICATIONS

International Journals

1. Mattia, S., Rossi, F. and Smriglio, S., Robust shift scheduling with discretionary rest breaks, *Omega (United Kingdom)*, 141, (2026)
2. Battista, F., Rossi, F. and Smriglio, S., Application of the Lovász-Schrijver Operator to Compact Stable Set Integer Programs, *Mathematical Programming Computation*, (2025)
3. Villa, G. et al., Use of oxiris membrane in real-world clinical practice in critical care patients: a multicenter observational study, *Journal of Anesthesia, Analgesia and Critical Care* 5 (1), (2025).
4. Romano, L., Manno, A., Rossi, F., Masedu, F., Attanasio, M., Vistoli, F. and Giuliani, A., Statistical models versus machine learning approach for competing risks in proctological surgery, *Updates in Surgery*, 77 (2), (2025), 333–341.
5. Arbib, C., D'Ascenzo, A., Rossi, F. and Santoni, D., An Integer Linear Programming Model to Optimize Coding DNA Sequences By Joint Control of Transcript Indicators, *Journal of Computational Biology*, 31 (5), (2024), 416–428.
6. Zelli, V., Manno, A., Compagnoni, C., Rasheed Oyewole, I., Zazzeroni, F., Alesse, E., Rossi, F., Arbib, C., Tessitore, A., Classification of tumor types using XGBoost machine learning model: a vector space transformation of genomic alterations, *Journal of Translational Medicine*, 1 (21), (2023).
7. Attanasio, Alessandro and Maravalle, Maurizio and Muccini, Henry and Rossi, Fabrizio and Scatena, Gianluca and Tarquini, Francesco, Visitors flow management at Uffizi Gallery in Florence, Italy, *Information Technology & Tourism*, 3 (24), (2022), 409–434.
8. Manno, A. Rossi, F. and Smriglio, S., Cerone, L., Comparing deep and shallow neural networks in forecasting call center arrivals, *Soft Computing* (2022)
9. Linderoth, J., Núñez Ares, J., Ostrowski, J., Rossi, F., Smriglio, S., Orbital Conflict: Cutting Planes for Symmetric Integer Programs, *INFORMS Journal on Optimization* (2021).
10. Avella, P., Boccia, P., Mattia, S., Rossi, F., Weak flow cover inequalities for the capacitated facility location problem, *European Journal of Operational Research*, 289 (2), (2021), 485–494.
11. Marinelli, F., Pizzuti, A., Rossi, F., LP-based dual bounds for the maximum quasi-clique problem *Discrete Applied Mathematics*, 296, (2021), 118–40.
12. Letchford, A.N., Rossi, F., Smriglio, S., The stable set problem: Clique and nodal inequalities revisited *Computers and Operations Research*, 123, (2020), 105024.
13. Arbib, C., Pinar, M.C., Rossi, F., Tessitore, A., Codon optimization by 0-1 linear programming *Computers and Operations Research*, 119, (2020), 104932.
14. Agnetis, A., Rossi, F., Smriglio, S., Some results on shop scheduling with S-precedence constraints among job tasks, *Algorithms*, 12 (12), (2019), 104.
15. Marzi, F., Rossi, F., Smriglio, S., Computational study of separation algorithms for clique inequalities, *Soft Computing*, 23, 9 (2019) 3013–3027.
16. Altobelli, E., Amichetti, M., Langiu, A., Marzi, F., Mignosi, F., Pisciotta, P., Placidi, G., Rossi, F., Russo, F., Schwarz, M., Smriglio, S., Vennarini, S., Combinatorial optimisation in radiotherapy treatment planning, *AIMS Medical Science*, 5 (3) (2018), 204–223.
17. Mattia, S., Rossi, F., Servilio, M., Smriglio, S., Staffing and scheduling flexible call centers by two-stage robust optimization, *Omega*, 72 (2017), 25–37.
18. Giandomenico, M., Letchford, A.N., Rossi, F., Smriglio, S., Ellipsoidal relaxations of the stable set problem: theory and algorithms, *SIAM J. Optim.*, 25, 3 (2015) 1944–1963.
19. Giandomenico M., Letchford A., Rossi F., Smriglio S., Approximating the Lovász θ Function with the Subgradient Method, *Electronic Notes in Discrete Mathematics*, 41 (2013), 157–164.
20. Bonomo F., Giandomenico M., Rossi F., A note on the Cornaz–Jost transformation to solve the graph coloring problem, *Information Processing Letters*, 113, 18 (2013), 649–652.
21. Giandomenico, M., Rossi, F., Smriglio, S., Strong lift-and-project cutting planes for the stable set problem, *Mathematical Programming Ser. A*, 141, 1 (2013), 165–192.
22. Marinelli, F., Nocella, S., Rossi, F., Smriglio, S., A Lagrangian heuristic for satellite range scheduling with resource constraints, *Computers & Operations Research*, 38, 11 (2011), 1572–1583.
23. Ostrowski, J., Linderoth, L., Rossi, F., Smriglio, S., Solving large Steiner Triple Covering Problems, *Operations Research Letters*, 39, 2 (2011), 127–131.
24. Ostrowski, J., Linderoth, L., Rossi, F., Smriglio, S., Orbital Branching, *Mathematical Programming Ser. A*, 126, 1 (2011) 147–178.
25. Giandomenico M., Rossi F., Smriglio S., Routing Concurrent Video Signals over SDH Networks, *Electronic Notes in Discrete Mathematics*, 36 (2010), 767–774.

International Journals (cont.)

26. Giandomenico, M., Letchford, A.N., Rossi, F., Smriglio S., An application of the Lovász–Schrijver $M(K, K)$ operator to the stable set problem, *Mathematical Programming Ser. A*, 120, 2 (2009), 381–401.
27. Mannino, C., Rossi, F., Sassano, A., Smriglio S., Time Offset Optimization in Digital Broadcasting, *Discrete Applied Mathematics*, 156, 3 (2008) 339–351.
28. Mannino, C., Rossi, F., Smriglio S., The Network Packing Problem in Terrestrial Broadcasting, *Operations Research*, 54, 4 (2006) 611–626.
29. Agnetis, A., Rossi, F., Smriglio, S., An Implicit Enumeration Scheme for the Batch Selection Problem, *Networks*, 44, 2 (2004), 151–159.
30. Arbib, C., Marinelli, F., Rossi, F., Di Iorio, F., Cutting and Reuse: an Application from Automobile Component Manufacturing, *Operations Research*, 50, 6 (2002), 923–934.
31. Rossi, F., Sassano, A., Smriglio, S., Models and Algorithms for Terrestrial Digital Broadcasting, *Annals of Operations Research*, 107, 3 (2001), 267–283.
32. Rossi, F., Smriglio, S., A Branch-and-Cut Algorithm for the Maximum Cardinality Stable Set Problem, *Operations Research Letters*, 28, 2 (2001), 63–74.
33. Rossi, F., Smriglio, S., A Set Packing Model for the Ground-Holding Problem in Congested Networks, *European Journal of Operational Research*, 131, 2 (2001), 400–416.
34. Arbib, C., Rossi, F., Optimal Resource Assignment through Negotiation in a Multi-agent Manufacturing Environment, *IIE Transactions on Design and Manufacturing*, 32, 10 (2000), 963–974.
35. Arbib, C., Rossi, F., An Optimization Problem Arising in the Design of Multiring Systems, *European Journal of Operational Research*, 124, 1 (2000), 63–76.
36. Agnetis, A., Rossi, F., Gristina, G., An Exact Algorithm for the Batch Sequencing Problem in a Two-Machine Flow Shop with Limited Buffer, *Naval Research Logistics* 45, 2 (1998), 141–164.
37. Agnetis A., Pacifici A., Rossi F., Lucertini M., Nicoletti S., Nicolò F., Oriolo G., Pacciarelli D., Pesaro E., Scheduling of Flexible Flow Lines in an Automotive Assembly Plant, *European Journal of Operational Research*, 97, 2 (1997), 348–362.
38. Agnetis, A., Macchiaroli, R., Pacciarelli, D., Rossi F., Assigning Jobs to Time Frames on a Single Machine to Minimize Total Tardiness, *IIE Transactions*, 29 (1997), 965–976.
39. Agnetis, A., Pacciarelli, D., Rossi, F., Batch Scheduling in a Two Machine Flow Shop with Limited Buffer, *Discrete Applied Mathematics*, 72, 3 (1997), 243–260.
40. Agnetis, A., Pacciarelli, D., Rossi, F., Lot scheduling in a Two Machine Cell with Swapping Device, *IIE Transactions*, 28 (1996), 911–917.
41. Agnetis, A., Dror, M., Vakharia, A., Rossi F., Tool handling and scheduling in a Two Machine Flexible Manufacturing Cell, *IIE Transactions*, 28 (1996), 425–437.

Series and conference papers
(selection)

42. D’Ascenzo, A., Meffert, J., Mutzel, P. and Rossi, F., Enhancing Graph Edit Distance Computation: Stronger and Orientation-based ILP Formulations, *Proceedings of the VLDB Endowment*, 18 (11), (2025), 4737 – 4749.
43. Capuano, R., Muccini, H., Rossi, F., CatreS: A context-aware recommender system for indoor and outdoor museums tours planning, *CEUR Workshop Proceedings*, 2020, 2601, pp. 31–34.
44. Muccini, H., Rossi, F., Traini, L., A smart city run-time planner for multi-site congestion management, *2017 International Conference on Smart Systems and Technologies (SST)*, Osijek, 2017, 175–179.
45. Salini, A., Malavolta, I., Rossi, F., Leveraging Web Analytics for Automatically Generating Mobile Navigation Models, *2016 IEEE International Conference on Mobile Services (MS)*, San Francisco, CA, 2016, 103–110.
46. Letchford A. N., Marzi, F., Rossi, F., Smriglio, S., Strengthening Chvátal-Gomory Cuts for the Stable Set Problem, *Lecture Notes in Computer Science*, 9849, 4th International Symposium on Combinatorial Optimization: ISCO 2016, Salerno, Italy, May 16-18, 2016, Springer, 2016.
47. Mattia S., Rossi F., Servilio, M., Smriglio, S., Robust Shift Scheduling in Call Centers, *Lecture Notes in Computer Science* 8596, 3rd International Symposium on Combinatorial Optimization: ISCO 2014, Lisbon, Portugal, March 5–7, 2014, Springer, 2014.
48. Giandomenico, M., Letchford, A., Rossi, F., Smriglio, S., A New Approach to the Stable Set Problem Based on Ellipsoids, *Lecture Notes in Computer Science* 6655/2011, 15th International IPCO Conference, Armonk, USA, June 15–17, 2011, Springer, 2011.

Series and conference papers
(selection, cont.)

49. Ostrowski, J., Linderoth, J. T., Rossi, F., Smriglio, S., Constraint Orbital Branching, *Lecture Notes in Computer Sciences* 5035/2008, 13th International IPCO Conference, Bertinoro, Italy, May 26-28, 2008, Springer, 2008.
50. Ostrowski, J., Linderoth, J. T., Rossi, F., Smriglio, S., Orbital Branching, *Lecture Notes in Computer Sciences* 4513/2007, 12th International IPCO Conference, Ithaca, NY, USA, June 25-27, 2007, Springer, 2007.
51. Arbib, C., Ciaschetti, G., Rossi, F., Distributing Material Flows in a Manufacturing System with Large Product Mix: Two Models Based on Column Generation, *Lecture Notes in Economics and Mathematical Systems* 480, New Trends in Distribution Logistics, Springer, 1999.

Book chapters

52. Rossi, F., Sassano, A., Smriglio, S., The Shortest Walk to Watch the TV, in *The Power of Algorithms*, Springer, 2013.
53. Rossi, F., Sassano, A., Smriglio, S., Il percorso più breve per vedere la TV, in *L'informatica invisibile*, Mondadori Università, 2011.
54. Agnetis, A., Lucertini, M., Nicoletti, S., Nicolò, F., Oriolo, G., Pacciarelli D., Pacifici, A., Pesaro, E., Rossi, F., The Decision Process for the Material Flow Management in a FIAT Car Assembly Plant, *Optimization in Industry 3: Mathematical Programming and Modeling Techniques in Practice*, John Wiley & Sons, 1995.