

Massimo Paolucci - Curriculum vitae

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1. Personal data

Born in Genova (Italy) on February 15th, 1961. Married, one daughter, living in Genova.

Current academic position: Assistant professor in Operations Research. Department of Informatics, Bioengineering, Robotics and Systems Engineering (DIBRIS), Polytechnic School, University of Genoa.

Work address: Dipartimento di Informatica, Robotica, Bioingegneria e Ingegneria dei Sistemi (DIBRIS), Università degli Studi di Genova, Via Opera Pia 13, 16145 Genova. Tel: 010-3532996. Fax: 010-3532948.

E-mail: massimo.paolucci@unige.it

2. Previous positions and education

- From March 1992 Assistant professor in Operations Research at DIST until 2012 and then at DIBRIS.
- Ph.D. in Electronic Engineering. Dipartimento di Informatica, Sistemistica e Telematica, Università di Genova (DIST). November 1987 - October 1990.
- Laurea Degree in Electronic Engineering (Summa cum Laude and Publishing Dignity), Facoltà di Ingegneria, Università di Genova. March 1986.

3. Research activities

The research activities of Massimo Paolucci mainly take place in Lido Lab, DIBRIS. He previously worked as a researcher also in the Industrial Automation Laboratory of the DIST, the Italian Centre of Excellence on integrated logistics (CIELI) and the Interuniversity Research Centre on Environmental Monitoring (CIMA). His main research interests are:

- *Matheuristic and metaheuristic algorithms for combinatorial optimization*
Hybrid metaheuristic approaches (such as, integration of tabu search (TS), simulated annealing (SA) and variable neighborhood search (VNS)); population based metaheuristics (ant colony optimization (ACO), particle swarm optimization (PSO)).
Matheuristic approaches for the solution of Mixed Integer Programming (MIP) models.
- *Planning and scheduling in manufacturing systems*
Energy-aware scheduling, aiming at optimizing, besides the classical objectives for manufacturing production, the electricity consumption due to the operation of the machines.
A matheuristic approach based on rolling horizon strategy for production planning in mixed-model assembly lines manufacturing environment.
Algorithms for scheduling of parallel machines in the presence of sequence-dependent setup with the objective of minimizing the total tardiness and both earliness and tardiness.
Development of a decision support system based on an interactive Gantt chart for detailed scheduling applied to a general discrete manufacturing model.
On-line scheduling algorithms with objective non-regular (just-in-time scheduling with minimization of tardiness and earliness) using agent-based approaches.
- *Logistics problems*
He collaborates with the Department of Economics and Quantitative Methods (DIEM) of the Faculty of Economics of the University of Genoa in modeling and solving maritime logistics problems, in particular, the Master Bay Planning Problem (MBPP) consisting in determining an optimal loading plan for a containership ship. Both single port and multi-port models are studied, the latter consisting in determining the load plan taking into account the sequence of ports included in the ship route.
Optimization of transport operation in intermodal transport networks.
Optimization of the train loading plan.
Vehicle routing problem with time windows for planning service operations in a gas distribution network of the a metropolitan area.
- *Decision support systems for environmental problems*

Optimal management of the collection of municipal solid waste. Optimal planning the flows of different types of municipal solid waste to possible facilities for their treatment (recycling plants, incinerators and landfills), considering both economic aspects and environmental aspects
Optimal planning vehicle operations for the separate waste collection.

4. Teaching activities

Since 1993 he is teaching courses in operations research, holding seminars and supporting students. He was supervisors of degree dissertations of about one hundred graduates and since 2001 of four doctoral students research in Electronic Engineering and Computer Science.

He is currently teaching Methods and Models for Decision Support (Master degree in Computer Engineering and in Security Engineering: Transport and Territorial Systems) and Operation Research (Master degree in Multimedia Signal Processing And Telecommunication Networks).

Since 2008 he is member of the scientific board for the "University Master's Degree in System Engineering and Project Management" held at the TLC Italian Army School in Chiavari.

Since 2016 member of the Academic Board of the PhD program in Computer Science and Systems Engineering

5. Editorial board

Associate editor of Operational Research and Management Science Letters (ORMS) Letters and Journal of Applied Operational Research (JAOR).

6. Academic and industrial projects

He was involved in the following Italian academic projects:

- "Flow of import and export port in container terminal: the study and resolution of decision problems and analysis of efficiency", National Coordinator Prof. P. Dell'Olmo, 2007.
- "Modeling, optimization and control of production systems/inventory/distribution", National Coordinator Prof. R. Minciardi accountable, 2005.
- "New methodologies for optimization and control of distributed production system in cooperative and competitive environment", National Coordinator Prof. R. Minciardi, 2003.
- "Neural Control Techniques", National Coordinator G. Picci, 1998.
- "Decentralized decision-making structures for production processes and logistics systems", National Coordinator Prof. F. Nicolo, 1997.

He was involved in several research projects with industrial partners, some funded by these partners, other by regional or national government. Recently he was the scientific manager for research projects with companies such as Siemens, Orizzonte Sistemi Navali, Finsa Consulting, SINA.

Since 2010 he is founding member of IROI srl, a spinoff of the University of Genoa applying to industrial problems methodologies for decision support, in particular optimization and simulation methods.

Since 2013 he is founding member of NOVIGO TECHNOLOGY Srl, a second spinoff of the University of Genoa, operating for the development of innovative ICT solutions for the manufacturing industry.