

# CURRICULUM VITAE

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## General information

Period	Experience
Mar 2018 – to present	Full Professor in <i>Manufacturing and Production Systems</i> at the Department of Mechanical Engineering of Politecnico di Milano (Italy).
Jan 2017 – to present	Guest Professor at the School of Mechanical Engineering of Shanghai Jiao Tong University (China)
Dec 2010 - to 2018	Associate Professor in <i>Manufacturing and Production Systems</i> at the Department of Mechanical Engineering of Politecnico di Milano (Italy).
Feb 2014 – Dec 2016	Distinguished Full Professor at the School of Mechanical Engineering of Shanghai Jiao Tong University (China)
June 2001 - Dec 2010	Assistant Professor in <i>Manufacturing and Production Systems</i> at the Department of Mechanical Engineering of Politecnico di Milano (Italy).
Sept 1998- May 2001	Assegnista di Ricerca (temporary researcher) on the topic “ <i>Design of manufacturing systems and planning of manufacturing processes</i> ” at the Department of Mechanical Engineering of Politecnico di Milano (Italy).
Feb 1998 - Sept 1998	Temporary contract on the European Research Project “ <i>MOD-FLEX-PROD (Contract n. CT970440): A New Modular System Architecture for Increasing Productivity and Flexibility</i> ” at the Department of Mechanical Engineering of Politecnico di Milano (Italy).
9 April, 1997	Laurea (equivalent to Master) Degree in Ingegneria Gestionale (Industrial Engineering) at Politecnico di Milano (Italy).

Andrea Matta is Full Professor of Manufacturing and Production Systems at Department of Mechanical Engineering of Politecnico di Milano. He graduated at Politecnico di Milano in 1997 in Industrial Engineering. From 1997 to 2001 he is temporary researcher at the Department of

Mechanical Engineering of Politecnico di Milano. From 2001 to 2010 he is faculty as Assistant Professor of Politecnico di Milano. In 2010 he becomes Associate Professor at Politecnico di Milano. From 2014 to 2016 he has been Distinguished Professor at the Department of Industrial Engineering and Management, School of Mechanical Engineering, at Shanghai Jiao Tong University where he is currently Guest Professor.

He is Editor in Chief of Flexible Services and Manufacturing Journal (former known as International Journal of Flexible Manufacturing Systems - 2016 IF 1.980) published by Springer. Since 2010 he is Scientific responsible of the Research Area 1 - Manufacturing Systems at MUSP (Macchine Utensili e Sistemi di Produzione – Laboratory for Machine Tools and Production Systems, [www.musp.it](http://www.musp.it)) and member of the MUSP Scientific-Technical Committee.

He is delegate of the Rector of Politecnico di Milano for the strategic partnership with Shanghai Jiao Tong University since 2017.

In the period between October 1999 and March 2000 he is visitor researcher at the Laboratory Productique et Logistique of Ecole Centrale Paris (France) in close cooperation with Prof. Yves Dallery. He is visiting professor at the Department of Industrial Engineering and Operations Research at University of California, Berkeley (USA) in 2007 in close cooperation with Prof. Lee W. Schruben. He has been professor of Manufacturing and Computer Aided Manufacturing at Tongji University of Shanghai (China) in 2009, 2013, 2015 and 2016.

He currently teaches two courses at Politecnico di Milano: Manufacturing Processes and Quality, Integrated Manufacturing Systems. He is Past President of the Association of Italian Scholars in China.

## Research interests

His research area includes analysis, design and management of production and service systems. The main research themes are related to:

- Simulation-optimization of manufacturing systems
- Performance evaluation of stochastic manufacturing systems
- Resource planning and scheduling in home care systems
- Energy saving in manufacturing.

He has published 144 scientific papers on international and national journals, and on international and national conference proceedings. His **h-index** is equal to 20 and his works have been cited 1222 times (SCOPUS DATA March-23-2019). He has been cited by International Journal of Production research among the *Leading Scholars in Production Research* by Alexandre Dolgui (2018, Leading scholars in Production Research for the 55th volume anniversary of IJPR, International Journal of Production Research, 56:1-2, 1-9, DOI: 10.1080/00207543.2018.1429119).

## Teaching experience (10 credits = 100 hours of lectures, practice and laboratory):

(i) as Professor at Shanghai Jiao Tong University from 2014 to 2016:

- Stochastic models (6 credits) for industrial engineering students at undergraduate level in the academic years: 2014, 2015, 2016.

- System modelling and simulation (4 credits) for industrial engineering students at bachelor level in the academic years: 2014, 2015, 2016.

(ii) as Professor at Politecnico di Milano from 1998-2014 and since 2017:

- Manufacturing systems (5 credits) for mechanical engineering students at master level in the academic years: 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011.
- Integrated manufacturing systems (5 credits) for industrial engineering students at bachelor level in the academic years: 2002-2003, 2007-2008, 2008-2009.
- Integrated manufacturing systems (8 credits) for mechanical engineering students at master level in the academic years: 2017-2018, 2018-2019.
- Reconfigurable Manufacturing Systems (10 credits) for industrial engineering students at master level in the academic years: 2003-2004, 2004-2005.
- Manufacturing processes (10 credits) for mechanical engineering students at bachelor level in the academic years: 2010-2011, 2011-2012, 2012-2013, 2016-2017.
- Manufacturing processes (5 credits) for mechanical and industrial engineering students at bachelor level in the academic years: 1999-2000, 2000-2001, 2002-2003, 2005-2006.
- Manufacturing and quality (10 credits) for industrial engineering students at bachelor level in the academic years: 2016-2017, 2017-2018, 2018-2019.
- Computer Aided Manufacturing (10 credits) for automation engineering students at master level in the academic years: 2011-2012, 2012-2013, 2013-2014.
- Computer Aided Manufacturing (5 credits) for industrial engineering students at bachelor level in the academic years: 2001-2002.
- Virtual Manufacturing (10 credits) for industrial engineering students at master level in the academic years: 2006-2007.
- Product Lifecycle Management (3.3 credits) for industrial engineering students at master level in the academic years: 2008-2009, 2009-2010.

(iii) as Professor at Tongji University:

- Manufacturing processes (5 credits) for mechanical and production engineering students at bachelor level in the academic years: 2009-2010, 2012-2013.
- Computer Aided Manufacturing (5 credits) for mechanical and production engineering students at bachelor level in the academic years: 2009-2010, 2012-2013, 2014-2015, 2015-2016.
- Discrete event simulation (12 hours) for mechanical engineering students at master level in the academic year: 2012-2013.

(iv) as teaching assistant at Politecnico di Milano:

- Integrated manufacturing systems for mechanical and industrial engineering students at master level: 30 hours of laboratory of discrete event simulation in academic years 1997-1998, 1998-1999, 2002-2003, 2003-2004.

- Manufacturing processes for mechanical and industrial engineering students at master level: 40 hours of teaching numerical applications of machining theory, casting and forming in academic years 1997-1998, 1998-1999, 1999-2000, 2001-2002.

### Service to university

- Member of the Commission for Student Tutoring of School of Engineering of Politecnico di Milano.
- Delegate of the Rector of Politecnico di Milano for the strategic partnership with Shanghai Jiao Tong University (China): 2017-present.
- Member of the Commission for Teaching Innovation of Mechanical Engineering studies of Politecnico di Milano: 2017- present.
- Member of the Scientific-Technical Committee of the MUSP (Macchine Utensili e Sistemi di Produzione – Laboratory for Machine Tools and Production Systems, [www.musp.it](http://www.musp.it)): 2008- present.
- Responsible for the Department of Mechanical Engineering for the development of a Double Master Degree in Mechanical Engineering in Manufacturing and Production Systems with Tongji University (China).
- Member of the Commission for company internships of mechanical engineering students at Politecnico di Milano: 2010-2014.
- Member of the Commission for the assessment of bibliometric indicators of the research achievements of the Department of Mechanical Engineering at Politecnico di Milano: 2009-2014.
- Responsible of the website of the research line Manufacturing and Production Systems of the Department of Mechanical Engineering, Politecnico di Milano: 2007-2009.

### Responsibility of research projects

- **Responsible** for Politecnico di Milano of the industrial project “*Resource allocation and layout alternative evaluation in electric motor assembly lines of Bari Plant*” funded by Magneti Marelli. Period: 2019. Number of partners: 1. Project funding: 31,000 euro. Funding for the Research group: 31,000 euro. Role: principal investigator. Task: design of manufacturing and assembly line.
- **Responsible** for Politecnico di Milano of the industrial project “*Analysis of alternative layouts for the assembly of the GDI injector IHP10E*” funded by Magneti Marelli. Period: 2018. Number of partners: 1. Project funding: 103,000 euro. Funding for the Research group: 103,000 euro. Role: principal investigator. Task: design of calibration and assembly line.
- **Responsible** for Politecnico di Milano of the industrial project “*Analysis of alternative layouts for the assembly of 81 and 85kw throttle body*” funded by Magneti Marelli. Period: 2017. Number of partners: 1. Project funding: 13,000 euro. Funding for the Research group: 13,000 euro. Role: principal investigator. Task: design of assembly line.
- **Principal investigator** for Shanghai Jiao Tong University of the project “*A Simulation-Optimization Framework for Design and Control of Complex Production Systems*” funded

- by National Science Foundation of China. Period: 2014 –2017. Number of partners: 1. Project funding: 820,000 RMB (around 107,000 euro). Funding for the Research group: 820,000 RMB. Role: principal investigator. Task: develop simulation-optimization methods for design and control of production systems.
- **Principal investigator** for Shanghai Jiao Tong University of the project “*Multi stakeholder frameworks in Health Care*” funded by Shanghai Jiao Tong University. Period: 2016 –2017. Number of partners: 2. Project funding: 12,400 euro. Funding for the Research group: 6,200 euro. Role: principal investigator. Task: develop simulation-optimization methods for health care systems engineering.
  - **Scientific responsible** for Department of Mechanical Engineering of Politecnico di Milano “*SMARTA*” (2014), a research project funded by Regione Lombardia. Period: March 2014 – December 2015. Number of partners: 8. Project funding: 1,654,800 euro. Funding for the Research group: 100,000 euro. Role: scientific leader for the Department of Mechanical Engineer. Task: development of patient stochastic models for human resource planning in home health care.
  - **Scientific responsible** for Politecnico di Milano in the European Integrated Project “*PROMISE: PROduct lifecycle Management and Information tracking using Smart Embedded systems*” (FP6-2002-IST-NMP-1), an EU funded research project under the 6<sup>th</sup> Framework. Period: September 2004 – March 2008. Number of partners: 22. Project funding: 7,999,970 euro. Funding for the Research group: 218,000 euro. Role: scientific leader for Politecnico di Milano. Task: development of methods for the reconfiguration of manufacturing systems.
  - **Scientific responsible** for Politecnico di Milano of the research project “*EMVeM Energy efficiency Management for Vehicles and Machines*”, 2<sup>nd</sup> level partner of an EU funded research project under the 7<sup>th</sup> Framework. Period: January 2013 – June 2016. Number of partners: 19. Project funding: 3,526,437 euro. Funding for the Research group: 1 PhD grant plus travel expenses (approximately 70,000 euro). Role: scientific leader for Politecnico di Milano. Task: development of models for energy saving in CNC machine tools.
  - **Scientific responsible** for Department of Mechanical Engineering of Politecnico di Milano “*EMC<sup>2</sup>-FACTORY: Eco Manufactured transportation means from Clean and Competitive Factory*” (2011, Grant agreement 285363), an EU funded research project under the 7<sup>th</sup> Framework. Period: October 2011 – September 2014. Number of partners: 17. Project funding: 7,499,776 euro. Funding for the Research group: 100,000 euro. Role: scientific leader for the Department of Mechanical Engineer. Task: development of models for energy saving in transfer lines in the automotive sector (close collaboration with FIAT).
  - **Scientific responsible** for MUSP Laboratory of the research project: “*Development of algorithms integrated with shop floor systems for an adaptive management of a modular tool storage*” funded by Regione Emilia Romagna. Period: January 2010 – January 2011. Number of partners: 2. Project funding: 173,000 euro. Funding for the Research group: 80,000 euro. Role: scientific leader for the MUSP Laboratory. Task: development of optimization models for real time tool management in automated tool storages.
  - **Principal Investigator** of the research project “*Analysis of machine tools energy efficiency*” funded by Siemens a private company. Period: June 2012 – December 2012. Number of

- partners: 2. Project funding: 25,000 euro. Funding for the Research group: 25,000 euro. Role: scientific leader for Politecnico di Milano. Task: development of a procedure for measuring energy adsorption in CNC machining centers.
- **Principal investigator** of the research project “*Total Production Scheduling*” funded by DUDA a private company for profit. Period: October 2005 – current. Number of partners: 2. Project funding: 100,000. Funding for the Research group: 33,000 euro. Role: scientific leader for Politecnico di Milano. Task: development of scheduling algorithms for production planning. The scheduling algorithms developed in the project have been installed in 3 real companies and are currently used.
  - **Principal investigator** of the research project “*Patient modelling in home health care systems*” funded by Fondazione LUVI, a no-profit private organization. Period: March 2007 – February 2008. Number of partners: 2. Project funding: 20,000 euro. Funding for the Research group: 20,000 euro. Role: principal investigator. Task: development of patient assignment mathematical models.
  - **Principal investigator** of the research project “*Development of a tool for supporting service planning in home health care systems*” funded by Fondazione LUVI, a non-profit private organization. Period: January 2006 – December 2007. Number of partners: 2. Project funding: 28,000 euro. Funding for the Research group: 28,000 euro. Role: principal investigator. Task: development of patient stochastic models for demand prediction.
  - **Scientific responsible** for Politecnico di Milano of the cooperation project “*COOPERA – Home Health Care systems*” funded by Région Rhone Alpes (France). Period: January 2012 – January 2014. Number of partners: 3. Project funding: 13,000 euro. Funding for the Research group: 4,000 euro. Role: scientific leader for Politecnico di Milano. Task: comparison of French and Italian home health care systems.

## Involvement in research projects

- “*Software frameworks and technologies for the development and maintenance of open-source distributed simulation code, oriented to the manufacturing field*”, a research project funded by MIUR Ministero dell’Istruzione, dell’Università e della Ricerca. Period: November 2002 – November 2006. Number of partners: 4. Project funding: 2,287,000 euro. Funding for the Research group: 332,600 euro. Role: project manager for the Department of Mechanical Engineer, work package manager and researcher. Task: development of (i) an UML model of flexible manufacturing systems, (ii) a smoothed perturbation analysis model.
- “*Models for capacity planning in advanced manufacturing systems*”, a research project funded by MIUR Ministero dell’Istruzione, dell’Università e della Ricerca. Period: January 2000 – December 2002. Number of partners: 5. Project funding: 180,760 euro. Funding for the Research group: 36,152 euro. Role: project manager for the Department of Mechanical Engineer, work package manager and researcher. Task: development of performance evaluation models of manufacturing systems.
- “*DRIVE: DRug In a Virtual Enterprise*” (IST-1999-12040), an EU funded research project under the 5<sup>th</sup> Framework. Period: May 2000 – December 2003. Number of partners: 9. Project funding: 2,950,601euro. Funding for the Research group: 268,000 euro. Role: project manager for the Department of Mechanical Engineer, work package manager and

researcher. Task: development of simulation-optimization models for the drug replenishment in the hospital pharmacy and wards.

- “*MOD FLEX PROD: A New Modular System Architecture for Increasing Productivity and Flexibility*” (1997, CT970440), an EU funded research project under the 4<sup>th</sup> Framework. Period: May 1997 – June 2000. Number of partners: 7. Funding for the Research group: 116,000 euro. Role: work package manager and researcher. Task: development of (i) a new manufacturing system architecture, (ii) an optimization procedure for system configuration.
- “*VRLKCiP Virtual Research Lab for A Knowledge Community in Production*”, an EU funded research project under the 6<sup>th</sup> Framework. Period: June 2004 – May 2008. Number of partners: 25. Project funding: 6,300,000 euro. Funding for the Research group: 200,000 euro. Role: researcher. Task: development of simulation models of manufacturing systems.

## Awards

- Most Cited Chinese Researcher in 2016 awarded by Elsevier
- Most Cited Chinese Researcher in 2015 awarded by Elsevier
- 2015 ME Internationalization Award for contributing to improve Internationalization of the School of Mechanical Engineering, Shanghai Jiao Tong University.
- Best Student Paper Award of the IEEE Conf. Automation Science & Engineering (CASE2014) in Taipei with the paper “*Energy Saving Policies for a Machine Tool with Warm-Up, Stochastic Arrivals and Buffer Information*” by Nicla Frigerio and Andrea Matta
- Shanghai One Thousand Talent (2013)
- Eastern Scholar (2013)
- Nomination for the WSC11 Best Theoretical Paper Award for the manuscript "Simulation-optimization of flow lines: an LP-based bounding approach" (authors: A. Alfieri and A. Matta) presented at the 2011 Winter Simulation Conference at Phoenix (Arizona, USA). The Winter Simulation Conference is the premier international forum for disseminating recent advances in the field of system simulation. The number of conference attendees has been between 600 and 800 in the last years. Of over 300 hundred papers included in the proceedings of the 2011 Winter Simulation Conference, only 9 were selected as nominees for the Best Theoretical Paper Finalists and 13 for the Best Application Paper Finalists.
- Young Researcher Award from Department of Mechanical Engineering of Politecnico di Milano for his scientific publications in the years 2008. Only 5 researchers were awarded in a Department with around 40 young researchers.
- Young Researcher Award from Department of Mechanical Engineering of Politecnico di Milano for his scientific publications in the years 2005. Only 3 researchers were awarded in a Department with around 35 young researchers.

## Memberships in scientific organizations

- Senior Member of IEEE Robotics and Automation Society (RAS) 2014-present
- INFORMS Institute for Operations Research and the Management Sciences, 2008-present.
- INFORMS Simulation (I-Sim), 2008-present.

- AITEM (Associazione Italiana Tecnologia Meccanica – Italian Association for Manufacturing – associated with ASME), 2001-present.
- Co-chair of the technical committee Sustainable Production Automation IEEE RAS
- Past President of the Association of Italian Scholars in China
- Member of the technical committee Automation in Health Care IEEE RAS
- Member of the technical committee Industrial Automated Systems and Control IEEE RAS

## Doctoral Committee

Member of the evaluation committee of 10 PhD defenses.

- Salma Chahed Jebalia, Modelisation et analyse de l'organisation et du fonctionnement des structures d'hospitalisation a domicile, *Ecole Centrale Paris* (France), 2008
- Chen Ruifeng, Analytical methods for performance enhancement in unreliable multistage manufacturing systems with imperfect production, *National University of Singapore* (Singapore), 2010
- Zhang Tian, Aide au Pilotage del la Chaine de Prise en Charge de la Chimiotherapie a Domicile, *Université Jean Monnet de Saint-Etienne* (France), 2012.
- Cao Yongxin, Developing an Integrated Quantity and Quality Approach for Improving the Performance of Multistage Manufacturing Systems, *National University of Singapore* (Singapore), 2012.
- Carlos Rodriguez-Verjan, Conception des structures de soins à domicile, *Ecole Nationale Supérieure des Mines de Saint Etienne* (France), 2013.
- Inad Nawajah, Bayesian analysis of home care longitudinal data, *Politecnico di Milano* (Italy), 2014.
- Ketky Kulkarni, Hybrid Simulation and Optimisation Approaches to the Job Shop Scheduling Problem, *IIT Bombay* (India), 2015.
- Wanying Chen, Outils et modèles pour l'organisation de réponses logistiques face des situations de crise sanitaires, *INSA de Lyon* (France), 2015.
- Stefan Lemmens, Analytical modeles for multi-echelon supply chains, **KU Leuven** (Belgium), 2018.
- Martin Prodel, Modelisation Automatique et Simulation de Parcours de Soins a Partir de Bases de Donnees de Sante', *Ecole Nationale Supérieure des Mines de Saint Etienne* (France), 2017.

## Doctoral students

Advisor of 7 doctoral students:

- Tomasella Maurizio, *Optimal Production System Reconfiguration Policies to React to Product Changes*, 2009, Politecnico di Milano, Department of Mechanical Engineering. After the PhD degree Dr. Maurizio Tomasella was engaged by the Cambridge University (Institute for Manufacturing) with a post-doc contract for 3 years. He is actually Faculty Lecturer in management science at University of Edinburgh, Edinburgh, (United Kingdom).



- Pedrielli Giulia, *Time Buffer for Approximate Optimization of Production Systems*, 2013, Politecnico di Milano, Department of Mechanical Engineering. She is actually a Research Fellow at the Centre for Maritime Studies, National University of Singapore, Singapore, (Singapore). She is actually assistant professor from August 2016 at Arizona State University (USA).
- Yalcindag Semih, *Human Resource Planning Models for Home Health Care Services: Assignment and Routing Problems*, 2014, Politecnico di Milano, Department of Mechanical Engineering and Ecole Centrale Paris, Laboratory of Industrial Engineering. Thesis co-supervised with prof. Evren Sahin of Ecole Centrale Paris. He is actually assistant professor at Yeditepe University, Istanbul, (Turkey).
- Frigerio Nicola, *Optimal Stochastic Switching of Machine Tools in Energy Efficient Manufacturing Systems*, 2016, Politecnico di Milano, Department of Mechanical Engineering. She is currently research fellow at Politecnico di Milano.
- Ziwei Lin, *Multi-resolution methods for performance evaluation of manufacturing systems*, thesis under development (second year) SJTU, Department of Industrial Engineering and Management.
- Mengyi Zhang, *Simulation-optimization methods using simulation model structures*, thesis under development (first year), Politecnico di Milano, Department of Mechanical Engineering.
- Giovanni Lugaresi, *Simulation-optimization methods for online decisions in manufacturing systems*, thesis under development (first year), Politecnico di Milano, Department of Mechanical Engineering.

## Master students

Supervision of several master thesis in industrial and mechanical engineering. Some students have developed their thesis in co-supervision with professors of other universities, the most important are Ecole Centrale Paris (4 master thesis, prof. Dallery), MIT Massachusetts Institute of Technology (1 master thesis, prof. Gershwin), Cambridge University (1 master thesis, prof. McFarlane).

## Service to scientific journals

- **Editor in Chief** of *Flexible Services and Manufacturing Journal* (ex International Journal of Flexible Manufacturing systems), ISSN: 1936-6582, starting from Jan 2017
- **Associate Editor** of *IEEE Robotics and Automation Society Letters*, eISSN: 2377-3766, 2015-2018
- **Member of the Advisory Board** of *OR Spectrum*, ISSN: 0171-6468, 2012-2019.
- **Associate Editor** of *Flexible Services and Manufacturing Journal* (ex International Journal of Flexible Manufacturing systems), ISSN: 1936-6582, 2012-2016
- **Guest Co-Editor** of IEEE Transactions of Automation and Science Engineering of the Special Issue Intelligent Energy Solutions to Sustainable Production and Service Automation (Editors: Ying (Gina) Tang, Congbo Li, Qing (Cindy) Chang, Andrea Matta) to published in 2020

- **Guest Co-Editor** of IISE Transactions of the Special Issue Contributions to Stochastic Models of Manufacturing and Service Operations (Editors: George Liberopoulos, Cathal Heavey, Stefan Helber, Fikri Karaesmen, Andrea Matta) published in 2018
- **Guest Co-Editor** of OR Spectrum of the Special Issue Dynamic/Stochastic Models for Production Planning & Control (Editors: Stefan Helber, Heinrich Kuhn, Michael Manitz, Andrea Matta, Raik Stolletz) currently ongoing.
- **Guest Co-Editor** of *Flexible Services and Manufacturing Journal* of 2 Special Issues: Health Care Systems Engineering (Editors: Jingshan Li, Andrea Matta, Evren Sahin) published in 2016, Analysis, Design, and Management of Health Care Systems (Editors: Andrea Matta, Alain Guinet, Jingshan Li, Evren Sahin, Nico Vandaele) published in 2018.

### Conference scientific & organizing committee

Chair of 1 international conference, member of scientific committee in 11 international conferences, member of editorial board in 4 international conferences, co-organizers of several special sessions:

- Chair of the International Conference on *Health Care Systems Engineering*, held in Milan (Italy) on 22nd-24th May, 2013.
- Awards Committee Member of the *13th annual IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2017), held in Xian (China) on 20th-24th August, 2018.
- Member of the Conference Editorial Board of the *14th annual IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2018), held in Munich (Germany) on 20th-23rd August, 2017.
- Member of the Conference Editorial Board of the *13th annual IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2017), held in Xian (China) on 20th-23rd August, 2017.
- Member of the Scientific Committee of the *27th International Conference on Flexible Automation and Intelligent Manufacturing* (FAIM 2017), held in Modena (Italy) on 27th-30th June, 2017.
- Member of the Scientific Committee of the *3rd International Conference on Health Care Systems Engineering* (HCSE 2017), held in Florence (Italy) on 29th-31st May, 2017.
- Member of the Scientific Committee of the 8<sup>th</sup> Gestion et Ingénierie des Systèmes Hospitaliers GISEH conference, to be held in Casablanca (Morocco) on 11<sup>th</sup> -13<sup>th</sup> July, 2016.
- Member of the Program Committee of the *21st IEEE International Conference on Emerging Technologies and Factory Automation* (IEEE ETFA 2016), held in Berlin (Germany) on 6th-9th September, 2016.
- Member of the Program Committee of the *2nd Workshop on Models and Methods for hospital management and planning* (IEEE M2H 2016), held in Berlin (Germany) on 6th September, 2016.
- Member of the Conference Editorial Board of the *12th annual IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2016), held in Fort Worth (USA) on 21st-24th August, 2016.

- Member of the Scientific Committee of the SMMSO, Conference on Stochastic Models of Manufacturing and Service Operations.
- Co-organizer of the special session on *Sustainable Production* of the 11th annual *IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2015), held in Gothenburg (Sweden) on 24th-28th August, 2015.
- Member of the Conference Editorial Board of the 11th annual *IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2015), held in Gothenburg (Sweden) on 24th-28th August, 2015.
- Member of the Scientific Committee of the *2nd International Conference on Health Care Systems Engineering* (HCSE 2015), held in Lyon (France) on 27th-29th May, 2015.
- Member of the Scientific Committee of the 7<sup>th</sup> Gestion et Ingénierie des Systèmes Hospitaliers GISEH conference, held in Liege (Belgium) on 07<sup>th</sup> -09<sup>th</sup> July, 2014.
- Member of the Scientific Committee of the International Conference on *Health Care Systems Engineering*, held in Lyon (France) on 27th-24th May, 2014.
- Member of the Conference Editorial Board of the 10th annual *IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2014) held in Taipei (Taiwan) on 18th-22nd August, 2014.
- Co-organizer of the special session on *Sustainable Production* of the 10th annual *IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2014) held in Taipei (Taiwan) on 18th-22nd August, 2014.
- Member of the Organizing Committee of the 9th annual *IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2013) held in Madison, Wisconsin (USA) on 17th-21st August, 2013.
- Co-organizer of the special session on *Health Care Management and Optimization* of the 9th annual *IEEE International Conference on Automation Science and Engineering* (IEEE CASE 2013) held in Madison, Wisconsin (USA) on 17th-21st August, 2013.
- Member of the Scientific Committee of the international conference *Innovation in Medicine and Healthcare 2013* held in Piraeus (Greece) on 17th-19th May, 2013.
- Member of the Scientific Committee of the international conference *Modern Information Technology in the Innovation Processes of the Industrial Enterprises* (MITIP) in the years 2009, 2010 and 2011.
- Member of the Organizing Committee of the *Seventh International Conference on Stochastic Models of Manufacturing and Service Operations* held in Ostuni (Italy) on 7th-12th June, 2009.
- Member of the Scientific Committee of the *2007 EU RFID Academic Convocation*.

## Referee

(i) for several scientific journals to review submitted manuscripts:

- Annals of Operations Research
- European Journal of Operations Research
- Flexible Services and Manufacturing
- Health Care Management Science

- IEEE journals on Automation
- IIE Transactions
- International Journal of Computer Integrated Manufacturing
- International Journal of Manufacturing Technology and Management
- International Journal of Operations & Quantitative Management
- International Journal of Production Economics
- International Journal of Production Research
- IEEE Transactions on Automation Science and Engineering
- Journal of Manufacturing Systems
- OR Spectrum
- Production Planning and Control
- Scientia Iranica
- Stochastic models

(ii) for research authorities to review project proposals:

- French National Research Agency
- ARC – Rhone Alpes (France)
- KU Leuven University of Leuven (Belgium)
- NSERC (Canada)
- A-STAR (Singapore)

(iii) for universities to review applications for Professorships:

- Position for associate professor, KAIST (South Korea)
- Position for associate professor, École Polytechnique de Montréal (Canada)

## **Keynote Talks**

- Discrete Event Optimization: Theory, Applications and Future Challenges, 30th European Conference on Modeling and Simulation, Regensburg (Germany), June 01-03, 2016.

## **Invited talks**

- Ecole Centrale Paris (France) – May 2004
- Rutgers University (USA) – April 2007, December 2014
- IFMA Institut Francais de Mécanique Avancée (France) – February 2007
- Tongji University (China) – November 2009, 2012
- Università di Pisa (Italy) – February 2012
- Shanghai Jiao Tong University (China) – March 2013
- University of Mannheim (Germany) – November 2013
- University of Grenoble (France) – February 2014
- Seoul National University – November 2014
- South Eastern Nanjing University – December 2014
- University of Southern California – December 2015

## Visiting

He has received the visits of several distinguished professors and students.

(i) Professors:

- Prof. S.B. Gershwin (MIT Massachusetts Institute of Technology, USA), one week
- Prof. Y. Dallery (Ecole Centrale Paris, France), one week
- Prof. G. Shanthikumar (Purdue University, USA), one week
- Prof. M. Jafari (Rutgers University, USA), one month
- Prof. H. Tempelmeier (University of Cologne, Germany), one week
- Prof. M. Di Mascolo (University of Grenoble, France), one week
- Prof. E. Sahin (Ecole Centrale Paris, France), one week.
- Prof. Z. Zabynsky (University of Washington), two weeks.
- Prof. J. MacGregor Smith (University of Massachusetts, USA), 3 months

(ii) PhD students:

- S. Chahed (Ecole Centrale Paris, France), one month
- E. Benzarti (Ecole Centrale Paris, France), two months
- M.F. Ragnisco (Università della Sapienza, Italy), six months
- S. Weiss (University of Mannheim, Germany), one month
- A. Errarhout (University of Roannes, France), 8 months

(iii) master students:

- H. Ayard (IFMA, France), five months
- B. Bascouil (IFMA, France), five months
- R. Chefson (IFMA, France), five months
- M. Cohen (IFMA, France), five months
- C. Colpes (IFMA, France), five months
- D. Deas (Indian Institute of Technology of Karghapur, India), two months
- C. Haentjens (IFMA, France), five months
- J. Hamard (IFMA, France), five months
- P. Lathuilière (IFMA, France), five months
- F. Leroy (IFMA, France), five months
- N. Maurine (IFMA, France), five months
- E. Rousseau (IFMA, France), five months
- B. Valet (IFMA, France), five months
- P. Vijay (IFMA, France), five months
- C. Vittoz (IFMA, France), five months
- Alexandre Mellak (IFMA, France), five months
- Nathan Bastidon (Sigma, France), five months

## Consulting

- Analysis and design of stator lines, Magneti Marelli
- Analysis and design of injector assembly and calibration line, Magneti Marelli

- Analysis and design of throttle body line, Magneti Marelli (China)
- Assignment and scheduling of caregivers, CompassCare (USA)
- Analysis of simulation project management, COMAU S.p.A. (FCA Group).
- Production scheduling, Ceratizit.
- Estimation of machine standard times, Ceratizit
- Selection of the ERP, Milgrandi.
- Production planning, Advanced Technology Valve S.p.A.
- Optimal cutting speed parameters and line balancing, GVS S.p.A.
- Design of transfer lines for ink-jet cartridges in white-room, Olivetti S.p.A.
- Design of transfer lines for milk production, Centrale del latte di Milano.

### ***LIST OF PUBLICATIONS***

	<b>Number of publications</b>
International Journals	49
Book Chapters	9
International Conference Proceedings	73
National Journals	2
National Conference Proceedings	11
	<b>(total) 144</b>

Note: 142 out of 144 publications have received anonymous peer review process.

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- [A3] **MATTA A,** TOLIO T, KARAESMEN F, DALLERY Y. (2001) An Integrated Approach for the Configuration of Automated Manufacturing Systems. ROBOTICS AND COMPUTER-INTEGRATED MANUFACTURING, vol. 17, pp. 19-26 ISSN: 0736-5845.
- [A4] TOLIO T, **MATTA A,** GERSHWIN S.B. (2002) Analysis of Two-Machine Lines with Multiple Failure Modes. IIE TRANSACTIONS, vol. 34, pp. 51-62 ISSN: 0740-817X.
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- [A6] **MATTA A,** TONTINI F, TOLIO T. (2004) Tool Management in Flexible Manufacturing Systems with Network Part Program. INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol. 42, pp. 3703-3730 ISSN: 0020-7543.

- [A7] **MATTA A**, FURIA C.A, ROSSI M. (2004) Semi-Formal and Formal Models Applied to Flexible Manufacturing Systems. LECTURE NOTES IN COMPUTER SCIENCE, vol. 3280, pp. 718-728 ISSN: 0302-9743.
- [A8] **MATTA A**, RUNCHINA M, TOLIO T. (2005) Automated Manufacturing Flow Lines with Shared Buffer. OR SPECTRUM, vol. 27, pp. 243-263 ISSN: 0171-6468.
- [A9] **MATTA A**, DALLERY Y, DI MASCOLO M. (2005) Analysis of Assembly Systems Controlled with Kanbans. EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 166, pp. 310-336 ISSN: 0377-2217.
- [A10] COLLEDANI M, **MATTA A**, TOLIO T. (2005) Performance Evaluation of Production Lines with Finite Buffer Capacity Producing Two Different Products. OR SPECTRUM, vol. 27, pp. 242-263 ISSN: 0171-6468.
- [A11] COLLEDANI M, GRASSO M., **MATTA A**, TOLIO T. (2006) A new Analytical Method for Buffer Space Allocation in Production Lines. CIRP JOURNAL OF MANUFACTURING SYSTEMS, vol. 34, 2005. ISSN: 1581-5048.
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- [A15] MAGGIO N, **MATTA A**, GERSHWIN S.B, TOLIO T. (2009) A Decomposition Approximation for Three-Machine Closed-Loop Production Systems with Unreliable Machines, Finite Buffers, and a Fixed Population. IIE TRANSACTIONS, vol. 41, pp. 562-574 ISSN: 0740-817X.
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- [A17] CASSINA J, TOMASELLA M, TAISCH M, **MATTA A**. (2009) A New Closed-Loop PLM Standard for Mass Products. INTERNATIONAL JOURNAL OF PRODUCT DEVELOPMENT ISSN: 1477-9056, vol. 8, pp. 141-161.
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- [A19] LANZARONE E, **MATTA A**, SCACCABAROZZI G. (2010) A patient stochastic model to support human resource planning in home care. PRODUCTION PLANNING AND CONTROL, vol. 21, pp. 3- 25 ISSN: 0953-7287.
- [A20] LANZARONE E, **MATTA A**. (2012) A Cost Assignment Policy for Home Care Patients. FLEXIBLE SERVICES AND MANUFACTURING, vol. 24, pp. 465-496 ISSN: 1936-6582.
- [A21] ALFIERI A, **MATTA A**. (2012) Mathematical programming representation of pull controlled single-product serial manufacturing systems. JOURNAL OF INTELLIGENT MANUFACTURING, vol. 23(1), pp. 23-35 ISSN: 0956-5515.

- [A22] **MATTA A**, PEZZONI M, SEMERARO Q. (2012) A Kriging-based algorithm to optimize production systems approximated by analytical models. *JOURNAL OF INTELLIGENT MANUFACTURING*, vol. 23(3), pp. 587-597 ISSN: 0956-5515.
- [A23] ALFIERI A, **MATTA A**. (2012) Mathematical programming formulations for approximate simulation of multistage production systems. *EUROPEAN JOURNAL OF OPERATIONAL RESEARCH*, vol. 219(3), pp. 773-783 ISSN: 0377-2217.
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- [A25] ALFIERI A, **MATTA A**. (2013) Mathematical programming time-based decomposition algorithm for discrete event simulation. *EUROPEAN JOURNAL OF OPERATIONAL RESEARCH*, vol. 231(3), pp. 557-566 ISSN: 0377-2217.
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- [A41] ALBERTELLI P, KESHARI A, **MATTA A**. (2016) Energy oriented multi cutting parameter optimization in face milling. *INTERNATIONAL JOURNAL OF CLEANER PRODUCTION*, vol. 137, pp. 1602-1618, ISSN: 0959-6526.
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- [A43] LI N, YU X, **MATTA A**. (2017). Modelling and workload reallocation of call centres with multi-type customers. *INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH*, vol. 55(19), pp. 5664-5680, ISSN: 0020-7543.
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- [A45] PEDRIELLI G, **MATTA A**, ALFIERI A, ZHANG M. (2018) Design and Control of Manufacturing Systems: a Discrete Event Optimization Methodology. *INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH*, vol. 56(1-2), pp. 543-564, ISSN: 0020-7543.
- [A46] ALFIERI A, LISTORTI E, **MATTA A**. (2018). Improving surgical outcomes through optimal volumes allocation. *FLEXIBLE SERVICES AND MANUFACTURING JOURNAL*, vol. 30(1-2), pp. 1-24, ISSN: 1936-6582, doi: 10.1007/s10696-016-9266-2
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- [A49] LIN Z, **MATTA A**, SHANTHIKUMAR, JG (2019). Combining simulation experiments and analytical models with area-based accuracy for performance evaluation of manufacturing systems. IISE TRANSACTIONS, vol. 51, p. 266-283, ISSN: 2472-5854, doi: 10.1080/24725854.2018.1490046

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- [B1] LEVANTESI R, **MATTA A**, TOLIO T. (2002) Performance Evaluation of Production Lines with Random Processing Times, Multiple Failure Modes and Finite Buffer Capacity - Part I: the Building Block. In: S.B. Gershwin, Y. Dallery, C. Papadopoulos (eds.) Analysis and Modeling of Manufacturing Systems. (pp. 181-200). ISBN: 1402073038 : Kluwer Academic Publishers (The Netherlands).
- [B2] LEVANTESI R, **MATTA A**, TOLIO T. (2002) Performance Evaluation of Production Lines with Random Processing Times, Multiple Failure Modes and Finite Buffer Capacity - Part II: the Decomposition. In: S.B. Gershwin, Y. Dallery, C. Papadopoulos (eds.) Analysis and Modeling of Manufacturing Systems. (pp. 201-220). ISBN: 1402073038 : Kluwer Academic Publishers (The Netherlands).
- [B3] **MATTA A**, SEMERARO Q, TOLIO T. (2005). Configuration of Advanced Manufacturing Systems. In: Design of Advanced Manufacturing Systems. (pp. 125-189). ISBN: 1-4020-2930-6. : Springer (NETHERLANDS).
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- [B5] TOMASELLA M., **MATTA A**. (2011) Adaptive production In: F., Markus, (ed.) Closed-Loop Product Life Cycle Management - Using Smart Embedded Systems. (pp. 263-286). ISBN 978-1-936007-61-5 : ISA - International Society of Automation (The Netherlands).
- [B6] TOMASELLA M., **MATTA A**, CASSINA J. (2011) Product data and knowledge management (PDKM) In: F., Markus, (ed.) Closed-Loop Product Life Cycle Management - Using Smart Embedded Systems. (pp. 110-134). ISBN 978-1-936007-61-5 : ISA - International Society of Automation (The Netherlands).
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- [B8] FRIGERIO N., **MATTA A**. (2017) Energy Efficient Manufacturing Systems: Current Research and Future Challenges. In: J. Li, B. Lennartson, Y. Tang, S. Biller and A. Matta (eds.) Sustainable Production Automation. (pp. 21-58). ISBN 978-1-60650-905-0 : Momentum Press (USA).
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### **Papers appeared on proceedings of international conferences**

- [C1] **MATTA A**, TOLIO T, GRIECO A, NUCCI F. (2000) New Policy to Manage Tools in Flexible Manufacturing Systems Using Network Part Programs. Intelligent Systems in Design and Manufacturing III. Boston, USA. November 6-8, 2000.

- [C2] LEVANTESI R, **MATTA A**, TOLIO T. (2000) Performance Evaluation Of Assembly/Disassembly Systems with Deterministic Processing Times and Multiple Failure Modes. Special International Conference on Production Research. Bangkok, Thailand. August 2-4, 2000.
- [C3] ANGLANI A, CARICATO P, GRIECO A, NUCCI F, **MATTA A**, SEMERARO Q, TOLIO T. (2000) Evaluation of Capacity Expansion by Means of Fuzzy-DEVS. 14nd European Simulation Multiconference. Ghent, Belgium. May 23-26, 2000.
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- [C5] **MATTA A**, MONITTO M, TOLIO T. (2001) A Method for the Dynamic Configuration of Manufacturing Systems. 16th International Conference on Production Research. Prague, Czech Republic. 29 July-03 August, 2001.
- [C6] LEVANTESI R, **MATTA A**, TOLIO T. (2001) A New Algorithm for Buffer Allocation in Production Lines. 3rd Aegean International Conference on Design and Analysis of Manufacturing Systems. Tinos Island, Greece. May 19-22, 2001.
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- [C8] ALBANESE M, **MATTA A**, TOLIO T. (2003) Simultaneous Perturbation Stochastic Approximation to Optimize Drug Management in Hospital Systems. Industrial Simulation Conference 2003. Valencia, Spain. June 9-11, 2003. (pp. 118-124). ISBN/ISSN: 90-77381-03-1.
- [C9] ALBANESE M, DE CAPITANI C, **MATTA A**, TOLIO T, SCOTTI P. (2003) A Tool for Monitoring the Operative Management in Healthcare Systems. First International Conference on Performance Measures, Benchmarking and Best Practices. Guimares, Portugal. June 10-13, 2003. (pp. 149-155). ISBN/ISSN: 972-8692-08-0.
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