

Curriculum Vitae - Giovanni Miragliotta

Sommario

§ 0 – Short CV	2
§ 1 – General Info	3
§ 2 – Academic Highlights	4
§ 3 – Current Research	6
§ 4 – Current Teaching	7
§ 5 – Publications List	9
§ 6 – Research Details	20
§ 7 – Teaching details	26
Enclosures	29

§ 0 – Short CV

BIO:	Giovanni Miragliotta, born in Italy,	th
CONTACTS:		
CURRENT POSITION:	Full Professor, School of Management, Politecnico di Milano, Italy.	
EDUCATION:	MSc in Management Engineering, cum laude, 1998, Politecnico di Milano. PhD in Management Engineering, 2003, Politecnico di Milano.	
CURRENT TEACHING:	<u>Undergraduate / Graduate programs (@Politecnico di Milano):</u> <i>Advanced Supply Chain Planning</i> , Master of Science, Management Engineering. <i>Industrial Plants</i> , Bachelor of Science, Energy Engineering. <u>Executive / Corporate programs:</u> Operations Management, Extended enterprise & Digital Supply Chain, Industry 4.0, Artificial Intelligence and Data Governance in both Fulltime and Parttime (Executive) MBA programs, as well as Academic Specialization Masters (1 st level).	
CURRENT RESEARCH:	His research area covers Operations and Supply Chain Management, deepening the impact of Digital Transformation in the light of the new challenges of the Green Transition. He participated to national and international research projects. In the last 10 years only, he has been (co)designer and (co)director of research projects with a total funding of over 10.0 mln €.	
PUBLICATIONS:	He is (co-) author of over 110 publications covering the areas of Operations Management, Research Methodologies and Digital innovation, of which 32 are SCOPUS indexed (oct-2023: 1,807 citations, H-index = 14) plus two contributions to International Books. He is co-author of over 40 national research reports on ICT driven business innovation.	
MAIN ACADEMIC RESPONSIBILITIES	Senior director at Osservatori.net (streams: IoT, Industry 4.0, AI, Smart Mobility, 5G). Co-director of IoT Lab, the applied research laboratory of Politecnico di Milano on IoT technologies and Smart & Connected Products (www.iotlab.polimi.it). Co-director of AIRIC, the applied research laboratory of Politecnico di Milano on Artificial Intelligence (www.airic.polimi.it). Scientific coordinator of three areas at MADE, the competence center of Politecnico di Milano devoted to Industry 4.0 (Logistics 4.0, Smart & Connected Products, Digital Backbone). Member of the organizing committee of 1000-MAD, the research platform of Politecnico di Milano dedicated to Autonomous drive technologies.	
CORPORATE COLLABORATION	Since 1998, he managed about 100 collaboration projects for Politecnico di Milano in the areas of Operational Excellence, BPR, Performance Measurement, New technologies adoption and Digital strategy. Among the companies he worked for, the following ones can be mentioned: ABB, Agrati, Almagora, Benetton, Bertazzoni, Bayer, Bracco, Caprari, Carel, Consorzio Dafne, Dallara, DHL, Edison, Eitowers, ENI, Ferrari, ICR Cosmetics, Inail, Indicod-ECR, La Marzocco, Mondadori, Movyon, Neologistica, Paylab Ingenico, Ricoh Europe, Sea Aeroporti, Selex ES, Snam Rete Gas, Sony Europe, Vimar, Whirlpool.	
ENTREPRENEURSHIP	Co-founder of IqConsulting srl, acknowledged as an academic spinoff in Dec-2015 by Università degli Studi di Brescia, acquired by Digital360 in 2021.	

§ 1 – General Info

GIOVANNI MIRAGLIOTTA

BIO:

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ADDRESS:

CONTACTS:

OBJECTIVE: Excellence in: academic teaching and research in Operations Management, deepening the impact of Digital Transformation in the light of the new challenges of the Green Transition; business advisory in Operations Management and Digital Transformation.

POSITION: Full Professor at the Department of Management, Economics and Industrial Engineering, Politecnico di Milano.

EDUCATION: 2003, PhD in Management Engineering, 2003, Politecnico di Milano.
PhD title: “*Techniques and tools for multisite production management*”.
The PhD program was funded by Atomos, a company developing APS / MES solutions. The algorithm developed in the PhD program is still at the core of Atomos’ Expert Plan Suite.
2002, Visiting scholar, Anderson School of Business, UCLA, Los Angeles.
2001, Euroma Doctoral Seminar on Research Methodology, Brussels.
1998, Master degree in Management Engineering, cum laude, Politecnico di Milano. MSc thesis title: “*Strategic stocks sizing through uncertainty deployment*” (in Italian). From the thesis, two scientific publications were originated.

ENTREPRENEURSHIP: Co-founder of IqConsulting srl, acknowledged as an academic spinoff in Dec-2015 by Università degli Studi di Brescia, acquired by Digital360 in 2021.

§ 2 – Academic Highlights

ACADEMIC POSITIONS:

2023-to date:	Full Professor at the Department of Management, Economics and Industrial Engineering, Politecnico di Milano
2003-to date:	Core Faculty member at GSOM (formerly known as MIP), the Business School of Politecnico di Milano.
2014 - 2023:	Associate Professor at the Department of Management, Economics and Industrial Engineering, Politecnico di Milano
2003 - 2014:	Assistant Professor at the Department of Management, Economics and Industrial Engineering, Politecnico di Milano
2000 - 2003:	3-year program PhD student at Politecnico di Milano, Italy.
1998 - 2000:	Research fellow at the Department of Management Engineering, Faculty of Engineering, Politecnico di Milano, Italy.
1998 - 2005:	Freelance teacher at the Technology Institute, Carlo Cattaneo University - LIUC, Castellanza, Italy.
1998 - 2000:	Research fellow at the Department of Mechanical Engineering, Faculty of Engineering, University of Brescia, Italy.

MAIN ACADEMIC RESPONSIBILITIES:

2022-to date:	Co-Director of AIRIC, the applied research center of Politecnico di Milano on Artificial Intelligence (www.airic.polimi.it), in cooperation with the Dept. of Electronics, Information and Bio-engineering. Several areas of AI research have been started, across several industries (Automotive, Energy, Defense).
2022-to date:	Director of the specialization Master in “Supply Chain Analytics”, the creditized specialization master of GSOM, Politecnico di Milano, based on the BABD platform. He was responsible of designing the program specialization courses, activating partnerships and supervising the program execution.
2020-to date:	Co-Director of the Italian Observatory on 5G, promoted by the School of Management of the Politecnico di Milano in cooperation with the Dept. of Electronics, Information and Bio-engineering. Fourth edition ongoing.
2019-to date:	Co-Director of the Italian Observatory on Smart & Connected Car, promoted by the School of Management of the Politecnico di Milano in cooperation with the Dept. of Electronics, Information and Bio-engineering. Fifth edition ongoing.
2018-to date:	Academic Focal Point @MADE 4.0, the Competence center of Politecnico di Milano devoted to Industry 4.0. Design responsibilities for the following Use Cases: Logistics 4.0, Digital Backbone, Smart & Connected Product.
2016-to date:	Co-Director of the Italian Observatory on Artificial Intelligence, promoted by the School of Management of the Politecnico di Milano in cooperation with the Dept. of Electronics, Information and Bio-engineering. Seventh edition ongoing.

- 2011-to date: Co-Director of the Italian Observatory on the Internet of Things, promoted by the School of Management of the Politecnico di Milano in cooperation with the Dept. of Electronics, Information and Bio-engineering. Twelfth edition ongoing
- 2014-2021: Co-Director of the Italian Observatory on Industry 4.0, promoted by the School of management of the Politecnico di Milano, with 7 national conferences and several national research reports published.
- 2009-2016: Co-Director of the Italian Observatory on the Mobile Payment & Commerce, promoted by the School of management of the Politecnico di Milano, for 7 editions.
- 2006-to date: Project Manager of the IoT Lab (former *RFId Solution Center*), the applied research centre on IoT and RFId technologies, jointly promoted by the Dept. of Management, Economics and Industrial Engineering and by the Dept. of Electronics, Information and Bioengineering of Politecnico di Milano. Several competitive research projects (both Italian and EU) have been delivered through IoT Lab.
- 2004-2009: Co-Director of the Italian Observatory on the RFId Technology, promoted by the School of management of the Politecnico di Milano, with 4 national conferences and 4 national research reports published.
- 2003-to date: Occasional Reviewer for *Production Planning and Control*, *Intern. Journal of Production and Operations Management*, *Intern. Journal of Production Economics*, *Intern. Journal of Production Research*, *European Journal of Operational Research*, *Intern. Journal of RF Technologies Research and Applications*, *Sensors*.

ORGANIZING COMMITTEE MEMBERSHIP:

- 2022: Member of the organizing committee of “1000-MAD”, the research platform of Politecnico di Milano, dedicated to Autonomous drive technologies in a wide range of driving contexts, April 2023 - June 2024.
- 2019: Member of the organizing committee of the First Industrial Conference on “Artificial Intelligence in Healthcare”, held in Milan, October 2019.
- 2018: Member of the organizing committee of the Scientific Workshop on "4th industrial revolution: Business model innovation, local ecosystems and global competition", held in Trento, March 2018.
- 2016: Member of the organizing committee of the EDIM (European Doctorate in Industrial Management) workshop on "Industry 4.0, the digital transformation", promoted by Politecnico di Milano, Universidad Politecnica de Madrid (UPM) and Royal Institute of Technology (KTH), held in Cremona, Italy, June 2016.
- 2006: Member of the organizing committee of the RIRL International Conference, held in Pontremoli, Italy, September 2006
- 2003-2004: Member of the organizing committee of the Italian Summer School on Industrial Plants Engineering, 2003 and 2004 editions, Pontremoli.

§ 3 – Current Research (2013 TO DATE, SEE SECTION 6 FOR PREVIOUS YEARS)

Research Major: Operations Management and Digital Technologies

- *Industry 4.0*, investigating new technology capabilities, innovative manufacturing paradigms (e.g. cloud manufacturing) and the evolution of managerial skills, in the light of the Digital transformation and the Green Transition;
- *Supply Chain Management and Operations management*, focusing on both theoretical issues (e.g. network design, complexity management) and operative issues (digital innovation, brand protection).
- *Internet of Things and Radio Frequency Identification*, investigating new applications areas for passive and active wireless technologies, developing models to evaluate benefits stemming from their adoption in logistics and manufacturing processes.
- *Artificial Intelligence* and the impact on business and society, investigating AI applications, impacts on jobs and business ethics, KPI measurement for the implementation of the Italian Strategy on AI.

Research Minor:

- *Digital Commerce, Payment & Identity*, developing projects and analytical models to simulate the business dynamics (growth) and social impact of Digital Payment / Commerce and Digital Identity in Italy;
- *Facilities management*: outsourcing in SME, ICT driven industry best practices.

Since 2013, he has been (co)designer and (co)director of research projects with a total funding of over 10.0 mln € (see Section 6 for details).

INVITED SPEAKER WITH SCIENTIFIC ROLE (SELECTED ONES)

- 2023, Italian Industrial Software Forum, “Ambidexterity in Industry 4.0”, Milano.
- 2022, Visioni Politecniche, Public lecture on “Artificial Intelligence and its impact on jobs”, <https://www.youtube.com/watch?v=7mUxID1mn50&t=3832s>
- 2022, Decathlon Annual suppliers meeting, inspirational workshop on “The future of SCM”, Milano.
- 2021, ERS Conference, “AI for Supply Chain Management: a glimpse to the future”, keynote speech, Milano.
- 2021, Sanofi Aventis Supply Chain annual development meeting, “Artificial Intelligence in SC Planning”, Milano.
- 2020, Italcementi Board of Directors, inspirational workshop, “Decision Making, Collaboration, Innovation”, Stezzano.
- 2020, Bosch, 11th FI Global Coordination Meeting, “Artificial Intelligence, designed for life”, final keynote session, Torino.
- 2019, Invited Chairman, “International Initiatives on AI and Health”, First Industrial Conference on Artificial Intelligence and Healthcare, Milano.
- 2019, Ducati Motors Board of Directors, inspirational workshop, “The Fourth Industrial Revolution”, Borgo Panigale.

- 2018, CGIL, “Innovazione, sviluppo e Politiche Industriali ai tempi della digitalizzazione”, Milano.
- 2018, UK Embassy, “Exploiting the potential of the digital economy”, Milan.
- 2018, Alta Scuola Politecnica, “Internet of Things and CPS: application scenarios and use cases”, Loano
- 2017, Brembo Awards, “Industry 4.0, the great opportunity”, Bergamo.
- 2017, Consiglio Nazionale Dottori Commercialisti Esperti, “Industria 4.0, la grande opportunità”, Venezia.
- 2016, ABB Board of Directors, inspirational workshop, “Industrial Internet of Things”, Monza.
- 2015 Expo Accenture Technology Vision Summit, “Le sfide per l’innovazione digitale nelle banche italiane”, Milan.
- 2015 Expo, Associazione Società Italiane per Azioni, “Anti-counterfeiting technologies”, Venice.
- 2015, X Commissione della Camera dei Deputati, “Audizione sullo stato dell’Industria 4.0 in Italia”, Rome.
- 2014, CRIT Research Event, “Internet of things, diffusion and applications”, Modena.
- 2013, Comune di Milano, “Smart City Initiatives in Italy and lessons learned”, Milano.

RESEARCH COLLABORATION WITH PUBLIC INSTITUTIONS

- 2022 – European Commission, Auditions for Harmonization of EU Regulations on Artificial Intelligence, submission of a written contribution.
- 2021 – Ministry of Innovation and Digital Transformation (MITD): selected member of the experts’ board that supported the definition of the “Italian Strategy on Artificial Intelligence”. Official presentation on 2021, Oct 5th, addressing Italian Ministers Vittorio Colao, Cristina Messa and Giancarlo Giorgetti.
- 2019 – Ministry of Economic Development (MISE): analysis and development of a model for estimating the socio-economic benefits of 5G technologies for Italy. Official report presentation on 2020, January 16th, addressed to Donatella Proto, Senior director.
- 2016 – Italian Ministry of Economy and Finance (MEF): analysis and simulations of feasible incentive schemes for incentivising electronic payments. Official report presentation on 2016, July 8th, addressed to Luigi Casero, Vice Minister.
- 2016 - Ministry of Economic Development (MISE): support in reviewing and developing the Italian investment and incentive plan for the digitalization of Industry (Piano Calenda, Industria 4.0).
- 2015 – Italian Association of Telcom Companies and Italian Agency for Digital Transformation (AGID): analysis and simulation for the development of the Italian Public System for Digital Identity (SPID). Official report presentation on 2015, July 29th, addressed to Marianna Madia, Italian Ministry of Economic Development (MISE).
- 2014 – Agenzia per le comunicazioni (AGCOM), Audition “Indagine conoscitiva sui servizi di comunicazione Machine to Machine (M2M) in Italia”. Research presentation on 2014, June 24th, Rome.
- 2013 – Body of European Regulators for Electronics Communications (BEREC), “Obstacles to the development of the IoT market, highlights from the Italian Experience”. Research presentation on 2013, November 19th, Bruxelles.

§ 4 – Current teaching (2013 TO DATE, SEE SECTION 7 FOR PREVIOUS YEARS)

UNDERGRADUATE / GRADUATE PROGRAMS:

Politecnico di Milano, Official teacher of:

- *Advanced Supply Chain Planning*, Master of Science, 2nd year, Management Engineering
- *Industrial Plants*, Bachelor of Science, 2nd year, Energy Engineering.

Senior Lecturer in:

- *Operations management and Digital Supply Chain*, 1st level master in the International Master in Supply Chain and Purchasing Management, held by GSOM, Graduate School of Politecnico di Milano.
- *Digital Operations Management*, 1st level master in Global Executive Master in Operations and Supply Chain Management (GEMOS), joint program between GSOM Politecnico di Milano and EADA Business School in Barcelona, (Spain).
- *Distribution Design and Retailing 2.0*, 1st level master program in Luxury Management (MGLux - joint program with SP Jain School of Global Management of Mumbai, India, and IMLux - International Master in Luxury Management), promoted by GSOM, Graduate School of PoliMi.

POST-GRADUATE / DOCTORAL PROGRAMS:

- He acted as Supervisor for several Italian and International PhD Students. (see Section 7 for details).
- Occasional lecturer at the PhD Program in Management Engineering, PoliMi.
- PhD Opponent for several PhD Students (PoliMi and other universities).

POST-GRADUATE / CORPORATE TEACHING:

Senior lecturer, Fulltime and Parttime (Executive) MBA programs, as well as Academic Specialization Masters (1st level), at GSOM (formerly known as MIP), the Graduate School of Management of Politecnico di Milano, in the following areas.

- Operations & Supply Chain Management
- Internet of Things, Extended enterprise, Industry 4.0
- Artificial Intelligence and Data Governance

Senior lecturer in corporate training programs (Selected ones):

- 2012, 2014 - Finmeccanica – Operations Management (IT & USA)
- 2017, 2019 – AXA, Internet of Things
- 2017 – Toyota Handling, Industrial IoT
- 2017, 2019 – Comau – Industrial IoT and Smart Supply Chain (DE & UK)
- 2018, 2019, 2022, 2023, Luxottica – Digital Supply Chain & AI (world)
- 2021 – Team Systems, AI
- 2022 – Bulgari, AI
- 2022, 2023 – Pirelli, Supply Chain Analytics

§ 5 – Publications list

Giovanni Miragliotta is (co)-author of over 110 publications covering the areas of Operations Management and ICT driven innovation, of which 30 are SCOPUS indexed (apr-2023: 1675 citations, H-index = 14), plus two contributions to International Books (with ISBN).

He is co-author of over 40 national research reports on ICT driven business innovation.

SELECTED PUBLICATION LIST AND JUSTIFICATION

In the light of the current selection procedure, the following publications have been selected, upon the following criteria:

- Subject consistency with the selection procedure, but trying to encompass the various research subjects pursued in 20+ years of activity;
- Publication venue: with an emphasis on journals and book chapters, still including a few conferences with double-blinded review/relevant scientific value AND high impact.

Id	Venue - <i>Subject</i>	Year	Justification
1	Journal Manufacturing & Tech. Management <i>Manufacturing-as-a-Service (MaaS) platforms</i>	2023	Brand new research line, innovative topic
2	Technological Forecasting and Social Change <i>Smart technologies and Ambidexterity</i>	2022	Relationship between digital technologies and innovation ability in Industry
3	Production Planning and Control <i>ETO manufacturers and Cloud manufacturing</i>	2022	Relevant industrial sector in Italy, facing a new tech challenge
4	Intern. Journal of Retail and Distribution Mngt. <i>Omni-channel retailing strategies, BM innovation</i>	2019	Digital innovation in distribution, strategic perspective
5	Intern. Journal of Logistics Systems and Mgmt. <i>Omni-channel retailing and environm. impact</i>	2019	e-Commerce-driven innovation, interaction with sustainability
6	IFIP Conference + Book published (ISBN, Scopus) <i>Jobs and skills in I4.0: An exploratory research</i>	2017	Double blinded review, human-centered innovation, high impact (62 cits)
7	Journal of Cleaner Production <i>Energy management and IoT</i>	2015	Relevant topic, relevant journal, Green & Digital Operations
8	Inter. Journal of Productivity and Performance <i>RFId in tracking medical equipment</i>	2015	Methodological contribution, RFId benefits assessment
9	IEEE Conference on Industrial Engineering <i>Smart factories, IoT and energy management</i>	2014	IEEE conference, Green & Digital Operations, excellent impact (611 cits).
10	Supply Chain Mngt: an intern. Journal <i>Interpretative framew. on RFId adoption in FMCG</i>	2011	Strategic analysis of RFId impact in a believed-promising sector
11	Facilities <i>Roadmap for services' outsourcing</i>	2011	Research minor
12	Inter. Journal of Production Economics <i>Dimensional analysis in production systems design</i>	2011	Original topic on research methodology, single author publication
13	Intern. Journal of Operations and Production Mngt. <i>RFId introduction and profitability in FMCG</i>	2009	Profitability model of RFId in a believed-promising sector
14	Inter. Journal of Production Economics <i>Behavioural costs, standardization vs. variety</i>	2009	Impact of process complexity on employees' behaviour and related costs
15	Inter. Journal of Production Economics <i>Logistics and SC management in luxury fashion</i>	2008	Seminal paper of SCM in the luxury industry
16	Inter. Journal of Production Economics <i>A new taxonomy for the Bullwhip Effect</i>	2006	Conceptual framework on a relevant topic, single author publication

17	European Journal of Operational Research <i>Complex scheduling for reentrant semicond. shops</i>	2005	Traditional Operations Management research, complex situation
18	Research Methodologies in Supply Chain Mngt: <i>SC Dynamics with object oriented simulation</i>	2005	Research methodology, across distinct research fields (book chapter)
19	Inter. Journal of Production Economics <i>Complexity management and SC performance</i>	2004	Seminal paper on SC complexity, 3-yr research program, high impact (165 cit)
20	International Journal of Production Research <i>Stocks, Information, capacity in lumpy demand</i>	2004	Traditional OM, new model to balance risk and service, my Master thesis

COMPLETE PUBLICATION LIST

A1 - MAJOR PUBLICATIONS: INTERNATIONAL JOURNALS OR BOOKS CHAPTER

- [23] G. Miragliotta, N. Roskladka, A. Jaegler, 2023, “From “right to repair” to “willingness to repair”: Exploring consumer's perspective to product lifecycle extension”, Journal of cleaner production, available online, <https://doi.org/10.1016/j.jclepro.2023.139705>.
- [22] G. Miragliotta, G. Tedaldi, 2023, “Early adopters of Manufacturing-as-a-Service (MaaS): state of the art and deployment models”, Journal of Manufacturing & Technology Management, 34 (4), 580-600; <https://doi.org/10.1108/JMTM-01-2022-0052>.
- [21] G. Miragliotta, G. Tedaldi, L. Gastaldi, S. Lessanibahri, S., 2022, “Companies’ adoption of Smart Technologies to achieve structural ambidexterity: an analysis with SEM”, Technological Forecasting and Social Change, vol 17 (121187), 1-12.
- [20] G. Miragliotta, G. Tedaldi, 2022, “The role of Engineering-to-Order machinery manufacturers in future Cloud Manufacturing supply chains: a business case and a strategic perspective”, 2021, Production Planning and Control, 33(9-10), 1011–1023.
- [19] G. Miragliotta, N. Arvidsson, A. Ghezzi, M. Jucevski, R. Mangiaracina, 2019, “Transition towards omni-channel retailing strategies: a business model perspective”, International Journal of Retail & Distribution Management, 47(2), 78-93.
- [18] G. Miragliotta, M. Giuffrida, R. Mangiaracina, S. Perotti, A. Tumino, 2019, “Modelling the environmental impact of omni-channel purchasing in the apparel industry: The role of logistics”, International Journal of Logistics Systems and Management, 34(4), 431-456.
- [17] G. Miragliotta, F. Shrouf, 2015, “Energy management based on Internet of Things: practices and framework for adoption in production management”, Journal of Cleaner Production, Vol. 100, 235-246.
- [16] G. Miragliotta, L. Gastaldi, R. Mangiaracina, A. Perego, A. Tumino, 2015, “Measuring the Benefits of Tracking Medical Treatment through RFID”, International Journal of Productivity and Performance Management, Vol. 64, No. 2, pp. 175-193.
- [15] G. Miragliotta, R. Cigolini, M. Pero, 2011, “A road-map for outsourcing facilities-related services in SMEs”, Facilities, Vol. 29, No. 11/12, pp. 445-458.
- [14] G. Miragliotta, R. Balocco, A. Perego, A. Tumino, 2011, “RFID adoption in the FMCG supply chain: an interpretative framework”, Supply Chain Management: An International Journal, Vol. 16, No. 5, 299-315.
- [13] G. Miragliotta, 2011, “The power of Dimensional Analysis in production systems design”, International Journal of Production Economics, Vol. 131, No. 1, pp. 175–182.
- [12] G. Miragliotta, A. Perego, A. Tumino, 2009, “A quantitative model for the introduction of RFID in the Fast Moving Consumer Goods supply chain: are there any profits?”, International Journal of Operations & Production Management, Vol. 29, No. 10, pp. 1049-1082.

- [11] G. Miragliotta, A. Brun, I. Soydan, 2009, *Coordinating multi-business sales through management simulators*, International Journal of Productions Economics, Vol. 121, No. 2, 533-549.
- [10] G. Miragliotta, A. Brun, E. Capra, 2009, “VRP revisited: the impact of behavioural costs in balancing standardisation and variety”, International Journal of Productions Economics, Vol. 117, No. 1, 16-29.
- [9] G. Miragliotta, A. Brun, F. Caniato, M. Caridi, C. Castelli, S. Ronchi, A. Sianesi, G. Spina, 2008, *Logistics and Supply Chain Management in Luxury Fashion retail: empirical investigation of Italian firms*, International Journal of Productions Economics, Vol. 114, No. 2, 554-570.
- [8] G. Miragliotta, 2006, *Layers and Mechanisms: a new taxonomy for the Bullwhip Effect*, International Journal of Productions Economics, Vol. 104, No. 2, 365-381.
- [7] G. Miragliotta, A. Portioli Staudacher, 2006, *The integrated use of information and stocks in the management of uncertain lumpy demand*, International Journal of Computer Integrated Manufacturing, Vol. 19, No. 3, 220-233.
- [6] G. Miragliotta, M. Perona, 2005, *Decentralised, multi-objective driven scheduling for reentrant shops: a conceptual development and a test case*, European Journal of Operational research, Vol. 167, 644-662.
- [5] G. Miragliotta, F. Casella, L. Uglietti, 2005, *Analysis of Supply Chain Dynamics through Object Oriented Simulation*, in: Research Methodologies in Supply Chain Management, Physica Verlag, Heidelberg, Germany, 461-476, ISBN: 3-7908-1583-7.
- [4] G. Miragliotta, A. Portioli Staudacher, 2004, *Exploiting information sharing, stock management and capacity oversizing in the management of lumpy demand*, International Journal of Production Research, Vol. 42, No. 13, 2533-2554.
- [3] G. Miragliotta, M. Perona, 2004, *Complexity management and supply chain performance assessment. A field study and a conceptual framework*, International Journal of Production Economics, Vol. 90, 103-115 – Selected top 25 Most Downloaded article in the International Journal of Production Economics, Decision Science Area, July – Sept. 2004.
- [2] G. Miragliotta, A. Perego, M. Perona, 2003, *Design for Controlling in Distribution Process Redesign: principles and methodologies through a case study*, in: Logistics Management, Physica-Verlag, Heidelberg, Germany, 197-216, ISBN: 978-3-7908-2361-5.
- [1] G. Miragliotta, M. Perona, A. Portioli, 2002, *Complexity management in the supply chain: a theoretical model and an empirical investigation in the Italian household appliance industry*, Cost management in Supply Chains, Physica-Verlag, Heidelberg, Germany, 381-398, ISBN: 3-7908-1500-4.

A2 – INTERNATIONAL JOURNALS (NO ISI NOR SCOPUS)

- [2] G. Miragliotta, A. Perego, A. Tumino, 2010, “Swallowing the RFID pill: the redesign of a pharmaceutical wholesaler supply chain”, International Journal of Logistics Economics and Globalisation, Vol. 2, No. 3, 198-216.
- [1] G. Miragliotta, M. Perona, N. Saccani, 2003, *Managerial levers to improve firms' performances in the household appliances industry*, International Appliances Manufacturing, Vol.7, 158-164.

B1 – INTERNATIONAL CONFERENCES, SCOPUS INDEXED

- [10] G. Miragliotta, G. Tedaldi, 2021, Manufacturing-as-a-Service (MaaS): state-of-the-art of up and running solutions and a framework to assess the level of development of a Cloud Manufacturing platform”, Proceeding of the Summer School Francesco Turco, Sept 2021, Bergamo, Italy.
- [9] G. Miragliotta, E. Convertini, R. Distanti, A. Sianesi, 2018, “Data driven management in Industry 4.0: a method to measure data productivity”, 16th IFAC Papers Online, IFAC Symposium on Information Control Problems in Manufacturing, June 2018, Bergamo, Italy.
- [8] G. Miragliotta, A. Perego, A. Tumino, G. Salvadori, “Smart parking management in a smart city: Costs and benefits”, Proceedings - 2017 IEEE International Conference on Service Operations and Logistics, and Informatics, September 2017, Bari, Italy.
- [7] G. Miragliotta, M. Pinzone, P. Fantini, S. Perini, M. Taisch, 2017, “Jobs and skills in industry 4.0: An exploratory research”, IFIP Advances in Information and Communication Technology, APMS, June 2017, vol. 513, p. 282-288, Springer, Cham, ISBN: 978-3-319-66923-6.
- [6] G. Miragliotta, R. Mangiaracina, A. Perego, G. Salvadori, A. Tumino, 2016. “Adopting the Internet of Things technologies in agriculture: an analysis of the benefits in the organic wine industry”, Proceedings of the Summer School Francesco Turco AIDI, p. 48-53, September 2016, Naples, Italy, ISBN: 978-88-908649-0-2.
- [5] G. Miragliotta, F. Shrouf, J. Ordieres, 2014, “Smart Factories in Industry 4.0: a review of the concept and of Energy Management approaches in production based on the Internet of Things paradigm”, 2014 IEEE International Conference on Industrial, Engineering and Engineering Management, December 2014, 697–701, Selangor, Malaysia.
- [4] G. Miragliotta, F. Shrouf, 2013, “Using Internet of Things to improve eco-efficiency in Manufacturing: a review on available knowledge and a framework for IoT adoption”, IFIP Advances in Information and Communication Technology, 397 (PART 1), 96-102, ISBN: 9783642403514.
- [3] G. Miragliotta, C. Borea, E. Pala, A. Perego, A. Tumino, 2011, “A 6-step methodology to evaluate the cost and benefits of RFID-based innovation in the healthcare sector”, Proceedings of the 10th International Conference on Mobile Business (ICMB2011), pp. 351-361, June 2011, Como, Italy.
- [2] G. Miragliotta, A. Perego, A. Tumino, 2009, “RFID and Returnable Transport Items Management: an Activity-Based Model to Assess the Costs and Benefits in the Fruit and Vegetable Supply Chain”, Proceedings of the 3rd International Workshop on RFID Technology IWRT 2009, pp 39-48, May 2009, Milan, Italy.
- [1] G. Miragliotta, L. Battezzati, A. Perego, A. Tumino, 2008, “How new technologies can improve cold chain management?”, Proceedings of the 2nd International Workshop on RFID Technology Concepts, Applications, Challenges - IWRT 2008, Barcelona, Spain, 149-156.

B2 – INTERNATIONAL CONFERENCES, NON SCOPUS INDEXED

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- [28] Miragliotta, G., Brun, A., Caridi, M., Cigolini, R., Pero, M., Sianesi, A., Rossi, T., *What’s the right supply chain for your project?*, *Impiantistica Italiana*, 2015, 28 (3), 14-26.
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- [16] G. Miragliotta, A. Castellazzi, P. Locatelli, *Ultra-Wide Band, an unavoidable choice (in Italian)*, Automazione Industriale, Mar 2007, 28-30.
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E – TEXTBOOKS OR EXERCISE BOOKS

- [5] A. Sianesi, 2020, Management of the Production System, Etaslibri. Contribution to Chapter 2, “Performances measurement systems design”.
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- [3] G. Miragliotta, E. Cagno, M. Mancini, P. Trucco, 2010, *Industrial Plants – Exercises*, Cusl, Milan.
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E - MINOR PUBLICATIONS

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- [3] G. Miragliotta, A. Perego, *Looking for value of RFId Applications (in Italian)*, Sistemi e Impresa, Oct 2007, 57-68, ESTE Ed.
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- [1] G. Miragliotta, L. Battezzati, A. Perego, 2005, *RFId between present and future: the innovation, the applications and their impact on the Corporate Information System (in Italian)*, Computerworld, April 2005, Edizioni Nuov@ Periodici Italia.

F – REVIEWER ACTIVITY

Since 2000, he acts as blind reviewer for several international journals in the area of Operations Management and New Technologies, namely:

- Production Planning and Control, European Journal of Operational Research
- International Journal of Operations and Production Management, International Journal of Production Economics
- International Journal of Production Research, International Journal of Engineering, Science and Technology
- International Journal of RF Technologies, Sensors
- Facilities Management

§ 6 – Research Details

MAJOR THEORETICAL RESEARCH STREAMS.

2013-to date: *Digital and Sustainable Industry*

Topics: Technology scouting and trends, IT and OT convergence on applications to the manufacturing sector, Business Models for the estimate of the Italian market, Standards and interoperability, Jobs & Skills, Eco-efficient manufacturing, Sustainable design and Right to Repair.

Role: Independent researcher and PhD supervisor
Co-director of the Italian Observatory on Industry 4.0, Politecnico di Milano

Funding: \cong 1.4 mln €, provided by the main players of the Italian I4.0 value chain

Events: 7 national events (June 2015, June 2016, June 2017, June 2018, June 2019, June 2020, October 2021), average attendance in excess of 500 persons, with the publication of 7 national research reports.

International publications¹:

[A1] – 17, 20, 21, 22

[B1] – 4, 5, 7, 9, 10

[B2] – 34, 35, 37, 38, 40, 41, 42

Noticeable Research Impact (most relevant only):

- 2022 - Mondadori, development of a Decision Support System addressing the sustainability impact of different products (paper vs. digital) and different operations' configurations, supporting the company Operations strategy in the Green Transition.
- 2018 - Co-Author of Dreamy 4.0 – Digital Maturity Readiness Assessment model, Sections “Internal Logistics” and “Supply Chain Management”. Dreamy 4.0 has been selected by Confindustria Italiana as the standard assessment model to engage thousands of Italian companies toward Digital Industry (<https://www.testindustria4-0.com>).
- 2016 - Ministry of Economics Development (MISE): support in reviewing and developing the Italian investment and incentive plan for the digitalization of Industry (Piano Calenda, Industria 4.0).

2004-to date: *RFId, Internet of Things and Connected Products*

Topics: Technology scouting and trends, applications to manufacturing, retail and other private and public sectors, Models for the estimate of the Italian market, technology adoption models, Public-Private-Partnerships in financing large IoT projects, Smart Mobility.

Role: Independent researcher and PhD supervisor
Co-director of the Italian Observatory on RFId (2004-2008), Politecnico Milano
Co-director of the Italian Observatory on IoT (2011-to date), Politecnico Milano

Funding: \cong 4.0 mln €, provided by the main players of the Italian IoT value chain

¹ [A1] or [A2]: International Journals or Book Chapters, [B1] or [B2]: International Conferences, see Section 5.

Events: 16 national events (Apr 2005, Jun 2006, Jun 2007, Jun 2008, Mar 2012, Mar 2013, Feb 2014, Apr 2015, Apr 2016, Apr 2017, April 2018, April 2019, April 2020, April 2021, Aprile 2021, April 2023), average attendance in excess of 500 persons, with the publication of 16 national research reports

Teaching: JS case on Industrial IoT design, Lanifici Italiani case on RFID for Track & Trace.

International publications:

[A1] – 12, 14, 16

[B1] – 1, 2, 3, 6, 8

[B2] - 18, 19, 20, 21, 22, 25, 26, 28, 32, 36

Noticeable Research Impact (most relevant only):

2020 - Scientific coordinator of three areas at MADE, the competence center of Politecnico di Milano devoted to Industry 4.0 (Logistics 4.0, Smart & Connected Products, Digital Backbone).

2013 - Body of European Regulators for Electronics Communications (BEREC), “Ob-stacles to the development of the IoT market, highlights from the Italian Experience”. Re-search presentation on 2013, November 19th, Bruxelles.

2008 - Bando Metadistretti Regione Lombardia – Progetto TOP (Tracking Original Products), with the design and development of a RFID enabled tracking system, using SaaS plat-forms to share tracking information.

2016-to date: *Artificial intelligence*

Topics: Technology scouting and trends, Application Areas, Impact on companies and on so-ciety, Models for the estimate of the Italian market, Models to estimate AI impact in the job market, ethic use of AI.

Role: Independent researcher and PhD supervisor

Co-director of the Italian Observatory on AI, Politecnico Milano

Funding: ≅ 1.2 mln €, provided by the main players of the Italian AI value chain

Events: 6 national events (February 2018, February 2019, February 2020, February 2021, Feb-ruary 2022, February 2023), average attendance in excess of 500 persons, publication of 6 national research reports.

Teaching: Post Graduate programs at GSOM, including Elective Bootcamps program and Online Certification Programs

International Scientific publications: None so far

Noticeable Research Impact (most relevant only):

2023 - AI4REALNETS research project, funded under the HORIZON-CL4-2022-HUMAN-02-01, starting Sept. 2023, duration 30 months. Responsibility for the Task 4.4: AI economics and regulation.

2021 - Selected member of the experts’ board that supported the definition of the “Italian Strat-egy on Artificial Intelligence”. Official document available at:

<https://assets.innovazione.gov.it/1637777513-strategic-program-aiweb.pdf>

2020-to date: 5G and Beyond

Topics: Technology scouting and trends, applications in private and public sectors, Business Models for the estimate of the Italian market, technology adoption models.

Role: Co-director of the Italian Observatory on 5G and Beyond, School of Management, Politecnico Milano

Funding: \cong 0,5 mln €, provided by the main players of the Italian 5G value chain

Events: 3 national events (Nov 2020, Nov 2021, Nov 2022), average attendance in excess of 400 persons, with the publication of 3 national research reports

International publications:

[B2] – 43

Noticeable Research Impact (most relevant only):

2019 - Bando FESR Regione Lombardia, Azione I.1.b.1.3 – Broadband InterfAces and services for Smart Environments enabled by 5G technologies (BASE 5G), with direct involvement in WP2 and WP3 (Polimi Smart Campus).

2019 - Ministry of Economics Development (MISE): development of a model for estimating the socio-economic benefits of 5G technologies for Italy. Official presentation on 2020, January 16th, addressed to Donatella Proto, Senior director of MISE.

2019-to date: *Smart & Connected car*

Topics: Technology scouting and trends, Application Areas, Models to estimate Smart car impact on the Italian mobility ecosystem.

Role: Independent researcher and PhD supervisor
Co-director of the Italian Observatory on Smart & Connected car, Politecnico Milano

Funding: \cong 0.5 mln €, provided by the main players of the Italian Smart Car value chain

Events: 3 national events (May 2020, May 2021, May 2022), average attendance in excess of 400 persons, publication of 4 national research reports.

International Scientific publications: None so far

Noticeable Research Impact (most relevant only):

2022 - Member of the organizing committee of “1000-MAD”, the research platform of Politecnico di Milano, dedicated to Autonomous drive technologies.

2003-2013: *Research methodologies*

Topics: System Dynamics modelling and simulation, Dimensional Analysis applied to Operations Management and Supply Chain Management problems

Role: Independent researcher

Funding: self-funded

International publications:

[A1] – 5, 13

[B2] – 14, 15, 16, 24

2000-2010: *Complexity management, Supply Chain Dynamics and Coordination*

Topics: Complexity measurement and control, Complexity profiling and complexity reduction in decision making, Supply Chain coordination, Bullwhip effect, Information Sharing, Contracts design

Role: Independent researcher, PhD Supervisor

Funding: self-funded

Teaching: NISSAN part 1, learning game (Complex Decisions in manufacturing networks)
NISSAN part 2, learning game (Simulation of Supply Chain Dynamics)

Events: Conference “Supply Chain complexity control: management levers and achievable advantages”, held at Brescia, March 2002.

International publications:

[A1] – 1, 3, 4, 7, 8, 11

[A2] – 1

[B2] – 3, 5, 7, 8, 9, 10, 15, 17, 23, 31

1999-2010: *Traditional Operations Management*

Topics: Production Planning and control, Logistic networks design, Inventory Management, Variety reduction.

Role: Senior researcher, junior researcher

Funding: self-funded

Teaching: Several Exercise textbooks (in Italian), several business cases used in BSc and MSc courses. He contributed to POK (PoliMi Open Knowledge) MOOC program, on the following subjects: Industrial cost assessment, Master Planning, Materials Planning.
https://www.pok.polimi.it/courses/course-v1:Polimi+OPE101+2023_M1/about

Events: Member of the organizing committee of the RIRL International Conference, held in Pontremoli, Italy, September 2006

Member of the organizing committee of the Italian Summer School on Industrial Plants Engineering, 2003 and 2004 editions, Pontremoli.

International publications:

[A1] – 2, 6, 9, 10, 18

[B2] – 1, 2, 4, 6, 11, 12, 13,

MAJOR APPLIED RESEARCH STREAMS

2021-to date: AIRIC (Artificial Intelligence Research and Innovation Center), Politecnico di Milano.

Website: www.airic.polimi.it

Role: Co-director

Tasks. P&L accountable, people development, business development, project manager.

Funding: \cong 0.8 mln €, provided by customers (medium and large companies)

Events: First year event, Nov 2022, with over 80 registered attendees (both academic & business)

International publications: none so far

See Enclosure 1 for a list of corporate collaborations.

2006-to date: Internet of Things Lab (former RFID Solution Center), Politecnico di Milano.

Website: www.iotlab.polimi.it

Role: Co-founder, co-director

Tasks. P&L accountable, people development, business development, project manager.

Funding: \cong 3.0 mln €, provided by customers (medium and large companies)

Events: dozens of events (training, dissemination) on the topic of IoT and wireless technologies. Over 1500 registered visitors (both academic & business)

International publications:

[A2] – 2

[B2] – 27, 29, 30, 33

Noticeable Research Impact (most relevant only):

2017 - Bando FESR Regione Lombardia, Azione I.1.b.1.3 – Design and development of a Real Time Location System, integrated with Data Analytics e Energy efficiency optimization algorithms, Industrial Shop Floor of Pirelli Facilities.

See Enclosure 2 for a list of corporate collaborations.

MINOR RESEARCH STREAMS.

2009-to date: *Mobile Payment and Digital Commerce*

Topics: Technology analysis, Business models for the estimate of the Italian market, Epica Project (Extended pilot of Italian Contactless payment Applications), impacts on sales channels & marketing

Role: Co-director of the Italian Observatory, School of Management, Politecnico Milano
PhD Supervisor

Funding: \cong 1.2 mln €, provided by the main players of the Mobile Payment value chain

Events: 7 national events (Gen 2010, Feb 2011, Feb 2012, Feb 2013, Feb 2014, Feb 2015, Feb 2016), average attendance in excess of 600 persons, with the publication of 7 national research reports

International publications:

[A1] - 19

[B2] - 39

2010-2012: *Facilities Management*

Role: Senior researcher

Tasks. Survey design, data analysis, outsourcing managerial implications

Funding: self-funded.

Others: Participation to the Innovance national project, aimed at the collection and organization of the available (scientific and technical) knowledge concerning facilities building and management.

International publications:

[A1] - 15

§ 7 – Teaching details

Since 1998, undergraduate, graduate, post-graduate and corporate teaching has been carried out with the qualification of lecturer, senior lecturer and then official teacher, in different universities and research institutions and in several domains of Operations Management and Industrial engineering. Different teaching approaches were followed: traditional lectures *ex cathedra*, case studies and practical work through seminars, business games and eventually computer aided learning. He developed several case studies and learning games, and contributed to several Exercise books and Textbooks.

UNDERGRADUATE / GRADUATE ACADEMIC TEACHING:

- | | |
|--------------|--|
| 2015-to date | Official teacher of Advanced Supply Chain Planning, Master of Science, 2nd year, Management Engineering. Assignments, project work, elective. |
| 2010-to date | Senior Lecturer in Operations management, 1st level master in Supply Chain and Purchasing Management, joint programme between MIP Politecnico di Milano (Italy) and Audencia Nantes School of Management (France). |
| 2003-to date | Official teacher of Industrial Plants, Bachelor of Science, 2nd year, Energy Engineering. |
| 2009-2015 | Official teacher of Production and Logistics systems management, Bachelor of Science, 3rd year, Mechanical Engineering. |
| 2011-2015 | Senior Lecturer in eOperations, "ICT for Extended Enterprise", Master of Science, 2nd year, Management Engineering. |
| 2009-2016 | Senior Lecturer in Supply Chain Management, "Design of Multisite Production Systems", Master of Science, 1st year, Management Engineering. |
| 2003-2008: | Senior lecturer in <i>Design and management of Production systems</i> (Prof. Andrea Sianesi), Mechanical Engineering, Politecnico di Milano. |
| 2003-2006: | Official teacher in <i>Production systems redesign</i> (BPR), Management Engineering, Politecnico di Milano (Como campus). |
| 1999-2004: | Official teacher in <i>Service Plants Engineering</i> , Management Engineering, Carlo Cattaneo University – LIUC, Castellanza. |
| 2001-2002: | Lecturer in <i>Industrial Production Management</i> and <i>eOperations</i> , Management Engineering, Politecnico di Milano. |
| 1998-2002: | Lecturer in <i>Industrial Technologies</i> , Mechanical and Management Engineering, University of Brescia. |
| 1999-2002: | Lecturer in <i>Industrial Plants Engineering</i> , Mechanical Engineering, Politecnico di Milano. |
- Since 1998, more than 100 Engineering degree theses have been supervised. The most common research themes are Supply Chain Management, Operations Management, Digital Innovation.

Teaching evaluation, throughout all these years, has always been "positive" or "highly positive". Students' evaluation are also available in online students' platforms.

POSTGRADUATE TEACHING – PHD PROGRAMS

Since 2011 - Occasional lecturer in Advanced Operations Management topics, PhD in Management Engineering courses, Politecnico di Milano.

2016: Member of the organizing committee of the EDIM (European Doctorate in Industrial Management) workshop on "Industry 4.0, the digital transformation", promoted by Politecnico di Milano, Università Politecnica Madrid (UPM) and Royal Institute of Technology, held in Cremona, Italy, June 2016.

SUPERVISED PHD STUDENTS

Since 2005 he acted as Supervisor of PhD students, in the area of Operations Management, Digital & Sustainable industry, and other Operations innovation topics.

Year	Student Name, Nationality	Research Topic
2022-ongoing	Giuseppe de Leo, Italy	Sustainable mobility
2021-ongoing	Camilla Sorrentino, Italy	AI Algorithmic fairness in credit allocation
2021-ongoing	Nataliia Roskladka, Ukraine	Design to repair in sustainable & circular economy
2016-2020	Gianluca Tedaldi, Italy	Manufacturing as a Service
2015-2018	Milan Jucevski, Finland	Mobile payment value chain innovation
2012-2016	Giorgio Fantino, Italy	Extreme flexibility in manufacturing
2012-2015	Fadi Shrouf, Palestine	IoT for Energy Efficiency in Manufacturing
2005-2009	Ilker Soydan, Turkey	Complexity in Decision Making

He also served as PhD Academic Opponent for many PhD students, for Politecnico di Milano's PhD program as well as for other universities.

CORPORATE TEACHING (2010 ONWARD)

Senior lecturer, Full time and Executive MBA programs, held by GSOM, Politecnico di Milano.

2020-to date: Artificial Intelligence

2010-to date: Digital technologies for Advanced Operations and Extended Enterprise

2007-to 2018: Brand Protection Strategies for Luxury Brands

2007-2011: Performance Measurement

Senior lecturer in Custom corporate education programs, held by GSOM, Politecnico di Milano.

2022: Bulgari, AI

2021: Team Systems, AI

2022, 2023: Pirelli, Supply Chain Analytics

2018- 2023: Luxottica – Digital Supply Chain & AI (world)

2017, 2019: AXA, Internet of Things

2017, 2019: Comau, Industrial IoT and Smart Supply Chain (DE & UK)

- 2017: Toyota Handling, Industrial IoT
- 2012, 2014: Finmeccanica – Operations Management (IT & USA)
- 2012: Luxottica – Distribution system Redesign (IT & USA)
- 2010-2011: Mediamarket - RFID technologies for operational excellence
- 2010-2011: Master data management and Complexity reduction, Beretta
- 2002-2005: *Advanced Operation Management*, Master in Integrated Supply Chain Management, University of Brescia.
- 2002-2006: *Supply Chain Strategies*, Master in Integrated Logistics and SCM, University of Verona.
- 2001-2002: *Advanced Operation Management*, Master in E-Business and Supply Chain Management, University of Castellanza.

- 2000 - : More than 40 Company Project Works have been supervised, see Encluse 3 for further details.

OTHER PERSONAL INFORMATION (CURRENTLY ACTIVE, 2023)

Voluntary service:

- Since 2021, Responsible of the Voluntary Initiative “Al Lavoro 4.0”, promoted by Fondazione San Carlo, Caritas Ambrosiana and Digital360, Milan, providing education, training and job search support to ≈15 young NEETs / year.

Personal Interests:

- Martial arts, Karate Kumite
- Guitar player in a Rock / Heavy metal band
- Car enthusiast, expert in car tuning, offroad driving certificate (FIF) 1st and 2nd level

In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize to use and process my personal details contained in this document.

Sincerely Yours,

Enclosures

ENCLOSURE 1 – APPLIED RESEARCH PROJECTS AT AIRIC (SELECTED ONES)

Industry /company name	AI Application area	Year
Automotive / Undisclosed	Automation of the manufacturing process design	2022
Utilities / Undisclosed	Natural gas consumption forecasting	2022
Public Administration / Undisclosed	Work safety forecasting	2022
SW Development / Undisclosed	AI strategic deployment in Operations Management software	2022
...		

ENCLOSURE 2 – APPLIED RESEARCH PROJECTS AT IoT LAB (SELECTED ONES).

Industry /company name	RFId / IoT Application area	Year
Pharma / Neologistica	Item Level Tagging, Life-saving drugs	2007
Food / Undisclosed	RFId tags on pallet loads and cases	2007
Automotive / Piaggio	Tracking of motors in the assembly line	2007
Oil & Gas / Eni	Asset Management Access control	2007
Oil & Gas / Eni	Operations management and logistics	2007
Food / Nestlé Ice-Cream	Cold chain management	2007
Cosmetics/ ICR	Item and case level tagging, Internal logistics and anti-counterfeiting	2008
Pharma / Dafne	Case level tagging, inbound logistics check-in	2008
Automotive / Ferrari	Car identification and location, merchandising, wind tunnel	2008
Isothermal containers/ Monetti	Asset management, production management, internal logistics	2008
Electronics/ Undisclosed	Operations management and internal logistics	2008
Pharma / Dafne 2	Inbound logistics, inbound controls	2008
Hydrothermal-sanitarium/ Baxi	Item Level Tagging, Internal logistics	2008
Textile/ Rinascente	Item Level Tagging, Internal logistics and distribution	2008
Food / Nordiconad	Traceability of Return Transport Items (RTIs)	2008
Healthcare/ Spedali Civili di Brescia	Item level tagging, Blood bags management	2009
Textile/ Undisclosed	Item Level Tagging & anticounterfeiting, logistics and distribution	2009

Industry /company name	RFId / IoT Application area	Year
Automotive / Iveco	Item Level Tagging, Traceability along the supply chain	2009
Manufacturing / Caprari Pumps	Case level tagging, Inventory management	2009
Pharma / Undisclosed	Item Level Tagging, supply chain traceability and risk management	2009
Food (Wine) / Consorzio Tuscanica	Item Level Tagging, Traceability	2009
Textile/ Miniconf	Item Level Tagging, anticounterfeiting	2010
Automotive / Fiat Group	Case Level Tagging, asset management	2010
Textile/ Benetton	Item Level Tagging, Internal logistics	2010
Textile/ Cisolfa	Item Level Tagging, Internal logistics	2010
Consumer electronics / Mediamarket	Item Level Tagging, Anti-shoplifting	2010
Finance/ Quercia Software	Item Level Tagging, Asset management	2010
Healthcare / Ingegneria biomedica Santa Lucia	Item Level Tagging, Smart Cabinet	2011
Services/ HTSS	Item Level Tagging, Asset management	2011
Finance/ Quercia Software	Item Level Tagging, Internal operations	2011
Services / Trilogis	Item Level Tagging, Social card	2011
Consumer electronics / Samsung Sony DHL Mediamarket	Item Level Tagging, Supply Chain Pilot	2012
Cosmetics/ ICR	Case level tagging, Internal logistics	2012
Manufacturing/ Comau	Item Level Tagging, Smart factory energy optimisation	2012
Healthcare / Ingegneria biomedica Santa Lucia	Item Level Tagging, Internal logistics	2012
Services / Trilogis	Item Level Tagging, Asset management	2012
Manufacturing/ Comau	Item Level Tagging, Smart factory cockpit	2013
White Goods / Whirlpool	Item Level Tagging, Smart freezer	2013
Oil & Gas / SnamReteGas	Item Level Tagging, Smart sensors technology scouting	2013
Food/ Auricchio	Item Level Tagging, Product traceability	2013
Services / Indicod ECR	Product Digital Identity Web Platform Service	2014
Services / Paylab	Mobile commerce Unattended electronic payment assessment	2014
Manufacturing / Touchplant	Smart Manufacturing Mobile interfaces for machines monitoring	2014
Telecommunications / Eitowers	Internet of Things Evaluation of LPWA technologies and markets	2015
Retail / Deloitte + Carrefour	Item Level Tagging Smart check-out assessment (pantry trainer)	2016
Healthcare / Macopharma	Item level tagging, Blood bags management	2016

Industry /company name	RFId / IoT Application area	Year
Automotive / Pirelli	Asset Real Time Location, Internal operations	2017
Home appliances / Bertazzoni	Smart Connected Product Technical development and business model	2017
Utilities / Edison	Edison Smart Home Architecture definition and prototyping	2018
Home Appliances / La Marzocco	Smart & Connected coffee machine	2018
Utilities / Undisclosed	Wireless data acquisition in large plants	2019
Public / Base 5G	Polimi Smart Campus	2019
Manufacturing / Undisclosed	Connected product & service	2020
Industrial Electronics/ Undisclosed	Technology re-platforming for industrial con- trollers	2020
Automotive / Undisclosed	Industrial IoT Assessment and redesign	2021
Manufacturing / Undisclosed	Industrial IoT Assessment and redesign	2021
Appliances / Undisclosed	Smart & connected cleaning machine	2022
Utilities / Undisclosed	Design and test of the new smart meter	2022
Infrastructure / Undisclosed	Indoor Vehicles' positioning for assisted autonomous drive	2023
...

ENCLOSURE 3 - GRADUATE EDUCATION, CORPORATE PROJECT WORKS (SELECTED ONES)

Year	Company	Subject
2023	Ferrari GES	Industry 4.0 re-platforming
2022	Leonardo	Data integration in the New product development process
2022	CMC	Supply Chain visibility enhancement
2021	Fedrigoni	IT portfolio restructuring
2021	Agrati	AI in process engineering
2020	Poste	Analysis of LPWA network opportunities
2020	Aptar	Innovation management in Operations
2019	KONE	Service supply chain redesign
2019	Guess	Suppliers integration and collaboration
2018	Skyres	Start-up of a Smart Home service platform
2018	Gnutti	Industrial IoT Platform assessment
2017	Prysmian	Tracking / RTL of cable roll drums
2017	Whirlpool	Advanced analytics in SC planning
2016	De Nora	Connected equipment and business servitization

Year	Company	Subject
2016	Weir	Servitization strategy through IoT
2015	Protect Your Brand	Anti-counterfeiting and Parallel import prevention
2015	Coca Cola	Smart Cabinet: vendor scouting and implementation plan
2014	IBM	Asset management
2014	ENI	Advanced Maintenance and Asset management policies
2013	Esselunga	IT System assessment and customer orientation strategy
2013	Luxottica	RFId tracking for brand protection and grey market fighting
2012	Rossetti snc	Start-upping a quality food e-commerce business
2012	Parigi Tubi	Tracking system implementation
2011	Ingegneria Bio-medica Santa Lucia	Smart Cabinet implementation and business impact evaluation
2011	Argol (Nuovo Pignone)	KPI system implementation.
2010	Benetton	RFId implementation for logistics tracking and internal optimisation
2010	EnergyQuote	SW Development for energy consumption's analysis and optimisation
2009	Alumix	Intracompany (multi-plant) transportation optimisation
2009	Porsche Bozen	"Porsche Approved" Warranty program activation
2008	Bautec	Cost accounting and allocation to primary processes
2008	Alcom	After Sales cost reduction in MTO machinery manufacturing
2007	Blueline	RFId adoption for textile logistics management
2007	Acciaierie Valbruna	Slow Moving spare parts inventory management
2006	Siemens AD	Return process mapping and performance measurement
2006	General Electric Finance	Factoring Italian market segmentation and analysis
2005	H3G	Distribution process cost structure assessment
2005	Pirelli Ambiente Tecnologie	Logistic Cost Simulator for new product introduction
2005	Tenaris Dalmine	Analysis of the credit management process
2004	GE (Power Control)	Implementation of lean production methodologies
2004	Nokia	Gap analysis for After Sales Process Re-engineering
2003	Nuova Azzurro	Logistic cost structure assessment
2003	Niggeler Kupfer	Performance measurement system implementation
2002	Signal Lux	APS Software Selection
2000	Signal Lux	Internal and External Kanban Implementation, LT reduction