Ing. Ettore Lanzarone, PhD

Department of Management, Information and Production Engineering
University of Bergamo, Dalmine (BG), Italy

www.ettorelanzarone.it
ettore.lanzarone@unibg.it - @cnr.it - @polimi.it - @cirrelt.ca

Education

Born in Milan, Italy, in 1979. He obtained his Ph.D. in bioengineering in June 2008 at Politecnico di Milano, his master degree in biomedical engineering cum laude in April 2004 at Politecnico di Milano, and his scientific high school degree in July 1998 (mark 60/60).

Affiliations and roles

He is an associate professor at the Department of Management, Information and Production Engineering of the University of Bergamo, Dalmine (BG), Italy, since October 2023.

He is director for the University of Bergamo of the master in Perinatal, Pediatric and Adult Congenital Cardiology at the Papa Giovanni XXIII hospital, Bergamo, Italy, since 2025.

He is the PRRC (*Person Responsible for Regulatory Compliance, according to European Regulation 2017/745 MDR*) of the University of Bergamo, Bergamo, Italy, since 2026.

He is member of the faculty of the PhD in Health and Longevity at the University of Bergamo, Bergamo, Italy, since 2025.

He is deputy president, responsible for the orientation and member of the study plans and admissions committees of the Degree Program in *Ingegneria per la Salute* of the University of Bergamo, Bergamo, Italy.

He is member of the Centre Interuniversitaire de Recherche sur les Reseaux d'Entreprise, la Logistique et le Transport (CIRRELT), Montréal and Quebec City, Canada, since 2016.

He is a research collaborator at the Institute for Applied Mathematics and Information Technology "E. Magenes" (IMATI) of the National Research Council of Italy (CNR), Milan, Italy, where he worked as a researcher from 2011 to 2020.

He holds the National Scientific Habilitation for the role of Full Professor of Bioengineering (sector 09/G2 - since 2024) and of Operations Research (sector 01/A6 - since 2022), obtained from the Italian Ministry of Education, University and Research.

He is on the board of directors of the Milan province section of the *Associazione Volontari*

Italiani del Sangue (AVIS) since 2025 in which he serves as deputy president, and of the Milan municipality section from 2021 to 2025.

He is on the board of directors, vice president and founding partner of the association *Amici di Casa Nazareth* since 2021.

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Memberships

He is member of the Italian National Bioengineering Group (GNB), of the EURO Working Group on Operational Research Applied to Health Services (ORAHS), of the European Network for Business and Industrial Statistics (ENBIS), of the European Society of Biomechanics (ESB) in some years, of the Associazione Italiana di Ricerca Operativa (AIRO) in some years, and of the Italian Association of Mathematical Engineers (AIM).

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Research activity

His research lies in the general field of **Applied Mathematics for Decision Making under Uncertainty**, with the development and application of mathematical and computational methodologies to support complex decision processes across multiple disciplines. His methodological expertise includes statistics (Bayesian and frequentist), artificial intelligence and machine learning, operations research, optimization, simulation, and mathematical modeling, including ordinary and stochastic differential equations.

A defining characteristic of his research is its multidisciplinary nature. He develops quantitative methods that are transferable across application domains, combining mathematical rigor with domain-specific knowledge to address real-world challenges. While healthcare and biomedical engineering constitute the primary application areas (including healthcare systems, clinical decision support, medical imaging, cardiovascular medicine, and digital health) his methodologies have also been successfully applied to manufacturing systems, logistics, biological systems, and other engineering domains.

His research aims to bridge methodological advances in applied mathematics with impactful applications, fostering interdisciplinary collaborations and translating mathematical innovation into practical solutions for scientific, industrial, and healthcare challenges.

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Previous affiliations and activities

From October 2020 to September 2023 he was a tenure track professor (*ricercatore di tipo B*) at the Department of Management, Information and Production Engineering of the University of Bergamo, Dalmine (BG), Italy

From November 2011 to September 2020 he was a researcher at the Institute for Applied Mathematics and Information Technology "E. Magenes" (IMATI) of the National Research Council of Italy (CNR), Milan, Italy.

He was an adjunct professor at the Politecnico di Milano, Milan, Italy, for several courses mainly at the Department of Mathematics.

He was a research fellow (*assegnista di ricerca*) at the Department of Mechanics of Politecnico di Milano, Milan, Italy, working on the following projects: *ADI-Plan: metodi e strumenti per la pianificazione ed il controllo delle risorse nelle reti di assistenza domiciliare integrata* from January 2011 to November 2011; *Analisi e progettazione dei sistemi logistico-organizzativi per l'erogazione di servizi socio-sanitari nel territorio* from April 2008 to September 2010.

He was a collaborator at the MUSP Consortium (*Consorzio Macchine Utensili e Sistemi di Produzione*), Piacenza, Italy, from October 2010 to January 2011, and collaborator at the

Department of Mechanics of Politecnico di Milano in March 2008.

He has been co-founder and member of the β–Lab (Laboratory of Biomechanics for Endovascular Treatments of the Aorta), belonging to Università degli Studi di Pavia, CNR-IMATI and Policlinico San Donato, until transferred from CNR to Unibg.

During the Ph.D. period (March 2005 - February 2008) he worked at the Bioengineering Department and the Laboratory of Biological Structures Mechanics, Politecnico di Milano, Milan, Italy (*tutor Prof. Roberto Fumero*).

From July 2004 to May 2005 he performed the Compulsory Civil Service in replacement of Military Service at Casa di Nazareth.

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Publications

International journals indexed in ISI or SCOPUS

1. F. Regis Hernández, A. Cataldo, E. Lanzarone. **A matheuristic decomposition for efficiently solving the dynamic pallet routing in a transportation line with model predictive control**. IEEE Trans Control Syst Technol 2026; accepted in press; ISSN 1063-6536.
2. M. Grassi, A. Mazzocchi, N. Vezzoli, L. Soliveri, E. Lanzarone, F.C. Massa. **Computational fluid dynamics assessment of hemodynamic effects of catheter navigation during transcatheter aortic valve implantation**. Int J Artif Organs 2026; DOI 10.1177/03913988261486186; ISSN 0391-3988.
3. M. Doneda, E. Elzi, A. Agnino, A. Graniero, L. Giroletti, M. Parrinello, G. Albano, G. Tunesi, E. Lanzarone. **A discrete-event simulation model to configure operating rooms for robotic cardiac surgery**. MDM Policy Pract 2026; DOI 10.1177/23814683251410133; ISSN 2381-4683.
4. A. Gürsoy, R. Pinto, F. Piccinini, D. Ghezzi, L. Veronese, E. Volpato, S. Rossini, E. Lanzarone. **Production of blood components from donated units: literature review, areas for improvement, and research perspectives**. Flex Serv Manuf J 2026; DOI 10.1007/s10696-025-09645-2; ISSN 1936-6582.
5. E. Scalco, R. Damiano, A. Caroli, M.L. Della Vedova, Andrea Bombarda, E. Lanzarone. **Confidence-weighted ensemble strategies based on task-informed data-augmentation to improve segmentation robustness: application to kidney MRI**. Appl Soft Comput 2027; DOI 116818; ISSN 1568-4946.
6. A. Sorropago, F. De Marco, E. Toscano, N. Brambilla, M. Montorfano, E. Stabile, E. Kedhi, P. Agostoni, M. Gennari, P. Vitali, G. Sorropago, C. Basso, A.V. Finn, E. Lanzarone, F. Scalise. **Assessment of the safety and effectiveness of the FLOWer antiembolic filter supporting transcatheter aortic valve implantation**. Catheter Cardiovasc Interv 2026; 107(6); 1670-81; ISSN 1522-1946.
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8. S. Caravita, C. Baratto, C. Dewachter, V. Kittipibul, G.B. Perego, F. Previdi, S. Paleari, M. Cattaneo, L.P. Badano, M. Senni, M. Fudim, G. Parati, J.-L. Vachiéry, E. Lanzarone. **Hemodynamic-driven staging of heart failure with preserved ejection fraction using unsupervised cluster analysis**. Pulm Circ 2026; 16(1): e70266; ISSN 2045-8932.
9. D. Salvi, E. Celentano, E. Cristiano, S. Schena, A. Agnino, E. Lanzarone. **Early prediction of the efficacy of local epicardial radiofrequency ablation for the robotic treatment of persistent atrial fibrillation**. Heart Rhythm O2 2026; 7(1): 2-8; ISSN 2666-5018.
10. G. Carello, L, Galperti, E. Lanzarone. **Realization-based robust assignments for a nurse-to-patient assignment problem in home health care services**. Flex Serv Manuf J 2026; 38: 392-440; ISSN 1936-6582.
11. M. Doneda, E. Lanzarone, C. Franchi, S. Mandelli, A. Barbato, A. Nobili, G. Carello. **A decision support tool for the location, districting and dimensioning of Community Health Houses**. Health Care Manag Sci 2025; 28: 866-89; ISSN 1386-9620.
12. V. Augusto, G. Koole, E. Lanzarone, M. Sarazin, P. Wieser. **Artificial intelligence methodologies for advanced decision processes in healthcare organizations (*editorial*)**. Flex Serv Manuf J 2025; 37: 1057-59; ISSN 1936-6582.
13. T. Bacci, E. Lanzarone, S. Mattia, P. Ventura. **A Benders decomposition approach for planning home blood donations**. Flex Serv Manuf J 2025; 37: 1117-47; ISSN 1936-6582.
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36. L. Giroletti, V. Brembilla, A. Graniero, G. Albano, N. Villari, C. Roscitano, M. Parrinello, V. Grazioli, E. Lanzarone, A. Agnino. **Learning curve analysis of robotic-assisted mitral valve repair with COVID-19 exogenous factor: a single centre experience**. Medicina 2023; 59: 1568; ISSN 1648-9144.

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41. F. Regis Hernández, E. Lanzarone, V. Bélanger, A. Ruiz. **Solving jointly districting and resource location and allocation problems: an application to the design of emergency medical services**. Comput Ind Eng 2023; 179: 109232; ISSN 0360-8352.

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45. L. Ironi, E. Lanzarone. **Optimal robust search for parameter values of qualitative models of gene regulatory networks**. IEEE-ACM T Comput Bi 2022; 19(2): 1050-63; ISSN 1545-5963.

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53. A. Montanino, G. Alaimo, E. Lanzarone. **A gradient-based optimization method with functional principal component analysis for efficient structural topology optimization**. Struct Multidiscip Optim 2021; 64: 177-88; ISSN 1615-147X.

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30. G. Carello, L. Galperti, E. Lanzarone. **A robust framework with dynamic reassignments for the home health care nurse-to-patient assignment with continuity of care**. 31st European Conference on Operational Research (EURO 2021). Conference book; 20. Also selected for the "Fast and Furious lightning talks; Making an Impact, the practitioner stream".
31. M. Doneda, S. Yalçindağ, I. Marques, E. Lanzarone. **A discrete-event simulation model for analyzing and improving operations in a blood collection center**. 31st European Conference on Operational Research (EURO 2021). Conference book; 41.
32. S. Yalçindağ, M. Doneda, E. Lanzarone, I. Marques. **An integrated framework for at-home blood collection**. 31st European Conference on Operational Research (EURO 2021). Conference book; 41.
33. E. Lanzarone, M. Doneda, S. Yalçindağ. **A novel paradigm for blood collection from donors: home blood collection**. 47th Conference on Operational Research Applied to Health Services (ORAHS 2021). Conference book; 37.
34. E. Lanzarone, S. Yalçindağ, I. Marques. **An integrated framework to combine blood collection planning and inventory management**. 46th Conference on Operational Research Applied to Health Services (ORAHS 2020). Conference book; 26.
35. E. Lanzarone, E. Galluccio, V. Bélanger, V. Nicoletta, A. Ruiz. **A recursive simulation-optimization tool to estimate the busy fractions in the ambulance location and dispatching problem**. 44th Conference on Operational Research Applied to Health Services (ORAHS 2018). Conference book; 26.
36. S. Baş Güre, G. Carello, E. Lanzarone, S. Yalçindağ. **Appointment scheduling for the blood collection process: a two-stage framework to balance the production of blood units**. 44th Conference on Operational Research Applied to Health Services (ORAHS 2018). Conference book; 27.
37. V. Bélanger, F. Regis-Hernández, E. Lanzarone, A. Ruiz. **A multi-criteria districting approach for ambulance fleet management**. 44th Conference on Operational Research Applied to Health Services (ORAHS 2018). Conference book; 34.
38. M. Conti, H.W.L. de Beaufort, F.J.H. Nauta, S. Marconi, E. Lanzarone, J.A. van Herwaarden, F.L. Moll, S. Trimarchi, F. Auricchio. **The impact of thoracic endovascular repair on the aortic biomechanics**. 8th World Congress of Biomechanics (WCB 2018), Contribution O1972.

39. M. Toschi, A.M. Anaya-Arenas, E. Lanzarone, V. Bélanger, A. Ruiz. **A matheuristic for the biomedical sample transportation problem with interdependent pickups**. 7th International Workshop on Freight Transportation and Logistics (ODYSSEUS 2018), Conference book, TH3b.

40. C. Bianchi, E. Lanzarone, G. Casagrande, M.L. Costantino. **Bayesian identification of patient-specific parameters in a dialysis kinetic model**. Int J Artif Organs 2017 [special issue on the 44th ESAO congress]; 40(8):400; ISSN 0391-3988.

41. S. Yalçindağ, N. Lahrichi, E. Lanzarone. **Comparison between alternative decomposition methods to solve the assignment and routing problems in home health care**. 43rd Conference on Operational Research Applied to Health Services (ORAHS 2017). Conference book; 52-3.

42. V. Nicoletta, V. Bélanger, E. Lanzarone, A. Ruiz. **Optimization methods to handle uncertainty in healthcare location-allocation problems: a literature review**. 43rd Conference on Operational Research Applied to Health Services (ORAHS 2017). Conference book; 25.

43. G. Carello, E. Lanzarone, D. Laricini, M. Servilio. **An implementor-adversary approach for the nurse-to-patient assignment problem in home care with uncertain and time-related demands**. 42nd Conference on Operational Research Applied to Health Services (ORAHS 2016). Conference book; 52-3.

44. N. Lahrichi, E. Lanzarone, S. Yalçindağ. **A new decomposition approach for solving the assignment and routing problems in home health care**. 42nd Conference on Operational Research Applied to Health Services (ORAHS 2016). Conference book; 134.

45. S. Pasquali, E. Lanzarone, G. Gilioli, E. Marchesini. **How Bayesian inference can help winegrowers?** 48èmes Journées de Statistique de la SFdS, ENBIS session.

46. V. Bélanger, E. Lanzarone, A. Ruiz, P. Soriano. **The ambulance relocation and dispatching problem**. 27th Conference of the Production and Operations Management Society (POMS 27th). Abstract code 065-0736.

47. C. Bianchi, E. Lanzarone, G. Pontoriero, C. Schoenholzer, G. Casagrande, M.L. Costantino. **A new method to personalize dialysis therapy**. Int J Artif Organs 2015 [special issue on the 42nd ESAO congress]; 38(7):387 and 38(9):522; ISSN 0391-3988.

48. V. Bélanger, E. Lanzarone, A. Ruiz, P. Soriano. **A matheuristic decomposition approach to solve the dynamic ambulance relocation and preassignment problem**. 41st Conference on Operational Research Applied to Health Services (ORAHS 2015). Conference book; 40.

49. S. Baş, G. Carello, E. Lanzarone, Z. Ocak, S. Yalçindağ. **Balancing the production of blood bags from donation through appointment scheduling**. 41st Conference on Operational Research Applied to Health Services (ORAHS 2015). Conference book; 21.

50. I. Bianchini, R. Argiento, E. Lanzarone. **Two Bayesian approaches to estimate aortic stiffness from patient-specific CTA images**. 7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014). Abstract book; 134.

51. E. Lanzarone, G. Carello, S. Mattia. **Different perspectives and goals in home care planning**. 40th Conference on Operational Research Applied to Health Services (ORAHS 2014). Conference book; 65.

52. G. Casagrande, C. Bianchi, E. Lanzarone, M.L. Costantino. **Prediction of single patient response during dialysis: Bayesian estimation of patient-specific parameters and latent state variables**. 60th Annual Meeting of the American Society of Artificial Internal Organs (ASAIO 2014). Abstract book; no. 147; pag. 112.

53. E. Lanzarone, C. Masclet, F. Noël. **Agility in home-care replanning through co-operation with graphical metaphors**. 5th Joint Virtual Reality Conference (JVRC 2013). Industrial session 2.

54. E. Lanzarone, L. Martín-Fernández, A. Pievatolo, F. Ruggeri. **Stochastic modelling of a shredding process for PCB recycling**. Joint Meeting of Young Business and Industrial Statisticians (y-BIS 2013). Invited session. Abstract book; 55.

55. A. Pievatolo, E. Lanzarone, L. Martín-Fernández, F. Ruggeri. **Design and analysis of electrospinning experiments**. Thirteenth annual conference of the European Network for Business and Industrial Statistics (ENBIS-13). Abstract book; 43.

56. R. Argiento, A. Guglielmi, E. Lanzarone, I. Nawajah. **Bayesian analysis and prediction of patients' demands for visits in home health care**. Thirteenth annual conference of the European Network for Business and Industrial Statistics (ENBIS-13). Abstract book; 77.

57. I. Nawajah, R. Argiento, A. Guglielmi, E. Lanzarone. **A Bayesian approach for modeling patient's demand and hidden health status: an application to home care**. Conference on Complex Data Modeling and Computationally Intensive Statistical Methods for Estimation and Prediction (S.Co.2013). Contributed poster; ISBN 97888-6493-019-0.

58. L. Martín-Fernández, G. Gilioli, E. Lanzarone, J. Míguez, S. Pasquali, F. Ruggeri, D.P. Ruiz. **Functional response estimation and population tracking in a Lotka-Volterra system using a Bayesian filtering technique**. Eighth Workshop on Bayesian Inference in Stochastic Processes (BISP8). Contributed poster BISP8.33.

59. I. Nawajah, A. Guglielmi, E. Lanzarone, R. Argiento. **Bayesian analysis of home health care longitudinal count data**. Eighth Workshop on Bayesian Inference in Stochastic Processes (BISP8). Contributed poster BISP8.36.

60. E. Lanzarone, A. Matta. **Stochastic assignment of patients in home care services**. INFORMS Healthcare 2011. Abstract book; 28.

61. E. Lanzarone, A. Matta. **Analysis of a patient-nurse assignment policy in home care services**. Actes de 5th Confèrence Francophone Gestion et Ingènierie des SystèmEs Hospitaliers (GISEH 2010); no. 030.

62. G. Faggian, E. Lanzarone, F. Gelmini, A. Carcereri de Prati, M. Tessari, T. Menon, H. Suzuki, M. Carini, R. Fumero, G.B. Luciani, M.L. Costantino. **Endothelium NO release during cardiac surgery: comparison between continuous and pulsatile flow cardiopulmonary bypass**. Artif Organs 2009 [abstracts of the Conference]; 33(5): A75-6; ISSN 0160-564X. Proceedings of the 5th International Conference on Pediatric Mechanical Circulatory Support Systems & Pediatric Cardiopulmonary Perfusion 2009; 5:108.

63. E. Lanzarone, F. Gelmini, A. Fumero, O. Alfieri, M. Tessari, T. Menon, M. Carini, H. Suzuki, G. Faggian, M.L. Costantino, R. Fumero. **Endothelial NO release and vasodilatation under continuous or pulsatile CPB: modellistic study and clinical investigation**. Int J Artif Organs 2008 [special issue on the 35th ESAO congress]; 31(7): 607; ISSN 0391-3988.

64. E. Lanzarone, A. Fumero, F. Gelmini, M. Orioli, M. D'Arienzo, R. Scotti, G. Aldini, F. Morazzoni, M. Carini, M.L. Costantino, R. Fumero. **Endothelium-derived nitric oxide production during cardiovascular surgery: comparison between continuous cardiopulmonary bypass and beating heart surgery**. Int J Artif Organs 2007 [special issue on the 34th ESAO congress]; 30(8): 734; ISSN 0391-3988.

65. F. Aletti, E. Lanzarone, M.L. Costantino, G. Baselli. **Effects of pulsatility on apparent peripheral resistance with edema**. Biomed Tech 2006 [special issue of ESGCO conference and meeting]; 51(4): A8; ISSN 0013-5585. Proceedings of ESGCO 2006; 1:264-5.

66. E. Lanzarone, G. Baselli, R. Fumero, M.L. Costantino. **Model of arterial and peripheral circulation with local regulation and filtration through capillary membrane for the study of vasomotion and assisted circulation**. Int J Artif Organs 2005 [special issue on the 32nd ESAO congress]; 28(9): 921; ISSN 0391-3988.

Technical reports and preprints

1. S. Colombara, I. Epifani, A. Guglielmi, E. Lanzarone. **A warning system for risk prediction of metabolic syndrome in a healthy population of blood donors**. arxiv; 2605.26843. *Followed by a paper under review.*

2. P. Smet, M. Doneda, E. Lanzarone, G. Carello. **Prediction accuracy versus rescheduling flexibility in elective surgery management**. arxiv; 2507.15566. *Followed by a paper under review.*

3. M. Doneda, P. Smet, G. Carello, E. Lanzarone, G. Vanden Berghe. **Robust personnel rostering: how accurate should absenteeism predictions be?** arXiv; 2406.18119. *Followed by a Doneda et al., J Sched 2026; 29: 67-82.*

4. C. Mazzanti, A.M. Anaya-Arenas, V. Bélanger, E. Lanzarone, A. Ruiz. **Iterative matheuristic for the biomedical sample transportation problem**. SSRN; 4598689. *Followed by Mazzanti et al., Comput Ind Eng 2024; 192: 110196.*

5. R. Argiento, R. Corradin, A. Guglielmi, E. Lanzarone. **Clustering blood donors via mixtures of product partition models with covariates**. arXiv; 2210.08297. *Followed by Argiento etl al., Biometrics 2024; 80(1): ujad021.*

6. C. Mazzanti, A.M. Anaya-Arenas, V. Bélanger, E. Lanzarone, A. Ruiz. **Iterative time-decomposition matheuristic for the biomedical sample transportation problem**. Technical report CIRRELT 2022; no. 11. *Followed by Mazzanti et al., Comput Ind Eng 2024; 192: 110196.*

7. A. Montanino, G. Alaimo, E. Lanzarone. **A gradient-based optimization method with functional principal component analysis for efficient structural topology optimization**. Technical report IMATI-CNR 2020; 20-02. *Followed by Montanino et al. Struct Multidiscip Optim 2021; 64: 177-88.*

8. G. Alaimo, F. Auricchio, I. Bianchini, E. Lanzarone. **Applying functional principal components to structural topology optimization**. Technical report IMATI-CNR 2017; 17-09. *Followed by Alaimo et al., Int J Numer Meth Eng 2018; 115(2): 189-208.*

9. S. Baş, G. Carello, E. Lanzarone, S. Yalçindağ. **An appointment scheduling framework to balance the production of blood bags from donation**. Technical report IMATI-CNR 2016; 16-06. *Followed by Baş et al., Eur J Oper Res 2018; 265(3): 1124-43.*

10. D. Carrera, F. Manganini, G. Boracchi, E. Lanzarone. **Defect detection in nanostructures**. Technical report IMATI-CNR 2016; 16-03. *Followed by Carrera et al., IEEE T Ind Inform 2017, 13(2): 555-61.*

11. V. Bélanger, E. Lanzarone, A. Ruiz, P. Soriano. **The ambulance relocation and dispatching problem**. Technical report CIRRELT 2015; no. 59. *Followed by Bélanger et al., Eur J Oper Res 2020; 286(2): 713-25.*

12. R. Argiento, A. Guglielmi, E. Lanzarone, I. Nawajah. **Joint prediction of health status and demand for patient in home care services: a Bayesian approach**. Technical report IMATI-CNR (Milan) 2014; 02-MI; ISSN 1722-8964. *Followed by Argiento et al., IMA J Management Math 2017, 28(4): 531-52.*

13. G. Carello, E. Lanzarone, S. Mattia. **Advances in applying the cardinality-constrained model for the nurse-to-patient assignment problem in home care**. Technical report IASI-CNR 2013; R. 13-09; ISSN 1128-3378. *Followed by Carello et al., Operations Research for Health Care 2018; 16: 29-40.*

14. L. Ironi, E. Lanzarone. **Assigning probabilities to qualitative dynamics of gene regulatory networks**. Technical report IMATI-CNR 2013; 2PV13/2/0; ISSN 1722-8964. *Followed by Ironi and Lanzarone, J Math Biol 2014, 69(6-7): 1661-92.*

National contributions

1. A. Gürsoy, R. Pinto, P. Smet, G. Vanden Berghe, E. Lanzarone. **Blood component production scheduling using rule-based policies**. AIRO (Associazione Italiana di Ricerca Operativa) 2026 Conference, Abstracts book, 52.

2. A. Candelieri, E. Lanzarone, G Macrina, R. Mansini (panelists). **Research in the era of AI: opportunities, challenges, and new frontiers**. AIRO (Associazione Italiana di Ricerca Operativa) 2026 Conference, Abstracts book, 157.

3. M. Doneda, A. Brigatti, S. Goglio, S. Scetti, F. Chiodini, L. Grion, G. Carello, E. Lanzarone. **An ILP approach to urgent patient management in an orthopedic department**. 10th AIRO (Associazione Italiana di Ricerca Operativa) Young Workshop 2026, Conference book 50.

4. A. Gürsoy, R. Pinto, P. Smet, G. Vanden Berghe, E. Lanzarone. **Coordinated scheduling of equipment and staff in blood component production**. ORBEL 40 (40th conference of the Belgian Operational Research Society) 2026, Abstracts book, 134-5.

5. E. Lanzarone, R. Damiano, F. Lussana, G. Villa, A. Caroli, E. Scalco. **Reproducibility and reliability of renal image segmentation and radiomics: the AI4PKD project**. Proceedings of the 9th National Congress of Bioengineering 2025; 19; Pàtron editore; ISBN 978-88-55584-14-2.

6. A. Gürsoy, R. Pinto, F. Piccinini, D. Ghezzi, E. Lanzarone. **A decision support system for blood component production**. AIRO (Associazione Italiana di Ricerca Operativa) 2025 Conference, Abstracts book, 171.

7. M. Doneda, P. Smet, E. Lanzarone, G. Carelllo. **Elective surgery planning considering length-of-stay: evaluating the role of prediction accuracy and rescheduling policies**. AIRO (Associazione Italiana di Ricerca Operativa) 2025 Conference, Abstracts book, 173.

8. A. Gürsoy, R. Pinto, F. Piccinini, D. Ghezzi, L. Veronese, E. Volpato, S. Rossini, E. Lanzarone. **Scheduling blood components production: a real-life case study**. 9th AIRO (Associazione Italiana di Ricerca Operativa) Young Workshop 2025, Conference book 30.

9. M. Doneda, P. Smet, G. Carello, E. Lanzarone, G. Vanden Berghe. **On the use of simulated machine learning for robust staff rostering**. 8th AIRO (Associazione Italiana di Ricerca Operativa) Young Workshop 2024, Conference book 8-9.

10. F. Valenti, A. Dotti, E. Bolzonaro, L. Santurro, A. Mangili, M.M. Grassi, I. Vlacis, E. Lanzarone. **Progetto di applicazione dei modelli di machine learning nella previsione dell'outcome e nella scelta della tipologia di ricostruzione dopo mastectomia: protesi prepettorale o retropettorale**. Congresso Attualità in Senologia 2023, Program book, 42.

11. D. Duma, E. Lanzarone, S. Marconi. **Multi-phase scheduling of 3D-printed devices for medicine**. AIRO (Associazione Italiana di Ricerca Operativa) 2023 Conference, Abstracts book, 91.

12. M. Doneda, E. Lanzarone, A. Barbato, C. Franchi, S. Mandelli, A. Nobili, G. Carello. **The location, dimensioning and districting problem of community houses in Lombardy, Italy**. AIRO (Associazione Italiana di Ricerca Operativa) 2023 Conference, Abstracts book, 93.

13. T. Bacci, E. Lanzarone, S. Mattia, P. Ventura. **A Benders decomposition approach for planning home blood donations**. AIRO (Associazione Italiana di Ricerca Operativa) 2023 Conference, Abstracts book, 96.

14. M. Doneda S. Yalçindağ, E. Lanzarone. **A framework for at-home blood collection considering donor preferences**. AIRO (Associazione Italiana di Ricerca Operativa) 2022 Conference, Abstracts book, 15.

15. G. Carello, E. Lanzarone, M. Servilio. **Nurse-to-patient assignment in home care services with uncertain and temporally correlated patient demand**. AIRO (Associazione Italiana di Ricerca Operativa) 2019 Conference, Session T3.

16. A. Pievatolo, E. Lanzarone, M. Diani, M. Colledani. **A population balance model for the recycling of waste electrical and electronic equipment: a laboratory experience**. SIS (Società Italiana di Statistica) 2019 Conference, presentation at the invited ENBIS session.

17. E. Lanzarone. **The flagship project Fab@Hospital: methods and technologies for manufacturing customized, patient specific prostheses in a hospital factory**. Talk for the workshop of the European Project Horizon 2020 SMART-map at the II conference of the IDBN (Italian Digital Biomanufacturing Network).

18. S. Marconi, E. Lanzarone, G. Van Bogerijen, M Conti, F. Secchi, S. Trimarchi, F. Auricchio. **A compliant aortic model for in vitro tests produced by 3D printing and molding**. Proceedings of the II conference of the IDBN (Italian Digital Biomanufacturing Network), 65-7; ISBN 9788866931249.

19. S. Yalçindağ, S. Baş, E. Lanzarone, G. Carello. **An appointment scheduling framework to balance the production of blood units from donation**. 38th Turkish National Operations Research and Industrial Engineering Congress (YAEM 2018), Abstracts book, 47.

20. R. Argiento, I. Bianchini, A. Guglielmi, E. Lanzarone. **Bayesian nonparametric covariate driven clustering** SIS (Società Italiana di Statistica) 2018 Conference, Proceedings book, 46-55; ISBN 978-88-9191-023-3.

21. F. Regis-Hernández, E. Lanzarone, V. Bélanger, A. Ruiz. **Demand-driven districting to improve emergency medical services**. 60th Annual CORS (Canadian Operational Research Society) Conference, 2018, Conference book, 33.

22. V. Nicoletta, E. Lanzarone, V. Bélanger, A. Ruiz. **A cardinality-constrained robust approach for the biomedical samples laboratories network problem**. 60th Annual CORS (Canadian Operational Research Society) Conference, 2018, Conference book, 53.

23. V. Bélanger, M. Toschi, A.M. Anaya-Arenas, E. Lanzarone, A. Ruiz. **A matheuristic for the biomedical sample transportation problem with interdependent pickups**. 60th Annual CORS (Canadian Operational Research Society) Conference, 2018, Conference book, 53.

24. V. Nicoletta, V. Bélanger, E. Lanzarone, A. Ruiz. **A cardinality-constrained robust approach for the biomedical samples laboratories network problem**. Optimization Days 2018 at HEC Montréal.

25. F. Regis-Hernández, E. Lanzarone, V. Bélanger, A. Ruiz. **Demand-driven districting to minimize response time in emergency medical services**. Optimization Days 2018 at HEC Montréal.

26. M. Toschi, A.M. Anaya Arenas, V. Bélanger, E. Lanzarone, A. Ruiz. **A VNS for the biomedical sample transportation problem with interdependent pickups**. Optimization Days 2018 at HEC Montréal.

27. E. Lanzarone, M. Conti, S. Marconi, H.W.L. De Beaufort, S. Trimarchi, F. Auricchio. **Alteration of lumped parameters under stent graft in ex vivo porcine aortas**. ESB-ITA (Italian Chapter of the European Society of Biomechanics) 2017 Meeting; Abstracts book, 43-4; ISBN 978-88-6296-000-7.

28. E. Lanzarone, S. Baş, G. Carello, S. Yalçindağ. **An appointment scheduling framework to balance the production of blood bags from donation**. AIRO (Associazione Italiana di Ricerca Operativa) 2016 Conference, Abstracts book, 178-9.

29. S. Baş, G. Carello, E. Lanzarone, Z. Ocak, S. Yalçindağ. **Kan bağışı sistemlerinde bağışçı randevu çizelgeleme modeli**. 35th Turkish National Operations Research and Industrial Engineering Congress (YAEM 2015), Abstracts book, 250.

30. E. Lanzarone, S. Baş, Z. Ocak, G. Carello, S. Yalçindağ. **Balancing the production of blood bags from donation through appointment scheduling**. AIRO (Associazione Italiana di Ricerca Operativa) 2015 Conference, Abstracts book, 77-8.

31. I. Bianchini, R. Argiento, F. Auricchio, E. Lanzarone. **Evaluating uncertainty in finite element analysis via functional principal component analysis**. ESB-ITA (Italian Chapter of the European Society of Biomechanics) 2015 Meeting, Abstracts book, 13-4.

32. G. Carello, E. Lanzarone, S. Mattia. **Different perspectives and goals in home care planning**. AIRO (Associazione Italiana di Ricerca Operativa) 2014 Conference, Abstracts book, 106.

33. I. Nawajah, R. Argiento, A. Guglielmi, E. Lanzarone. **Joint prediction of demand and care duration in home care patients: a Bayesian approach**. SIS (Società Italiana di Statistica) 2014 Conference, Proceedings book, no. 2893; ISBN 978-88-8467-874-4.

34. G. Carello, E. Lanzarone. **A robust optimization approach for the nurse-to-patient assignment problem in home care**. AIRO (Associazione Italiana di Ricerca Operativa) 2012 Conference, Abstracts book, 63.

35. E. Lanzarone, A. Matta, E. Sahin, Y. Dallery. **Assigning operators to patients in home care providers**. Actes du 12e Congrès Annuel de la Sociètè Francaise de Recherche Opèrationelle et d'Aide à la Dècision 2011 (ROADEF 2011); Vol. II; 677-8.

36. E. Lanzarone, M.L. Costantino, R. Fumero. **Endothelial nitric oxide release under pulsatile or continuous cardiopulmonary bypass: computational model**. Atti del Congresso Nazionale di Bioingegneria 2008; 187-8; Pàtron editore; ISBN 978-88-55529-83-9.
37. E. Lanzarone, A. Fumero, H. Suzuki, F. Gelmini, M. Carini, G. Faggian, M.L. Costantino. **Endothelial nitric oxide release under pulsatile or continuous cardiopulmonary bypass or beating heart surgery: clinical investigation**. Atti del Congresso Nazionale di Bioingegneria 2008; 785-6; Pàtron editore; ISBN 978-88-55529-83-9.
38. E. Lanzarone, M.L. Costantino, R. Fumero. **Il bypass cardiopolmonare e l'alterazione sistemica: il ruolo dell'endotelio**. In-Bypass 2007 [A.N.Pe.C. - Associazione Nazionale Perfusionisti in Cardiochirurgia]; 20(2):3403-10.

Didactic books

1. G. Casagrande, E. Lanzarone, L. Marocco, F. Miglietta. **Esercizi di Fisica Tecnica**. Pitagora Editrice. Third ed. 2013 (first ed. 2008); ISBN 88-371-1215-7.

My theses

1. E. Lanzarone. **Il ruolo attivo dell'endotelio nella risposta sistemica ad una perfusione continua o pulsatile**. Tesi di Dottorato in Bioingegneria, XX ciclo, Politecnico di Milano, 2008. Tutor: Roberto Fumero - Advisor: Maria Laura Costantino.
2. E. Lanzarone, P. Liani. **Modello della circolazione arteriosa sistemica con regolazione locale dei distretti periferici**. Tesi di Laurea Quinquennale in Ingegneria Biomedica, Politecnico di Milano, 2004. Advisors: Maria Laura Costantino, Giuseppe Baselli.

Lectures and seminars

Invited talks:

- E. Lanzarone. **Data-driven dynamic nurse-to-patient assignment problem in home care: an implementor-adversary robust framework**. Workshop on Data-Driven Dynamic and Robust Resource Management, Heilbronn, Germania, March 7-8, 2023. Invited lecture.
- E. Lanzarone. **Addressing uncertainty in health care with the cardinality-constrained approach: a tradeoff between accuracy, computational effort, and interaction with clinicians**. Plenary Tutorial Speaker at the 41st Conference on Operational Research Applied to Health Services (ORAHS 2015), Montréal, Canada, July 19-24, 2015.
- E. Lanzarone. **Stochastic parameters estimation in dynamical systems from observations: general framework and applications**. First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI, Bilbao, Spain, June 30 - July 4, 2014. Invited talk for session Model Order Reduction and Highly Demanding Applications. Abstract book; 299.
- E. Lanzarone, S. Pasquali, V. Mussi, F. Ruggeri. **Bayesian estimation of thermal conductivity and temperature profile in homogeneous masses**. Eighth Workshop on Bayesian Inference in Stochastic Processes (BISP8). Invited young researcher (abstract BISP8.13).
- E. Lanzarone, M.L. Costantino, G. Faggian. **Continuous vs pulsatile flow in CPB: NO production and its implications**. Invited lecture at ESAO winter school 2008; Cortina d'Ampezzo (Belluno, Italy), March 2008.

Schools:

- E. Lanzarone. **Gestione Operativa a supporto della sanità territoriale**. Lesson within the school "Innovazione manageriale in sanità" of the *Accademia per il Management Sanitario* of the University of Genoa, Genoa, Italy, April 21, 2023.
- A. Remuzzi, E. Lanzarone. **Cyst and kidney segmentation in experimental polycystic kidney disease**. Presentation at the TrainCKDis Workshop on Imaging Analysis, Mario Negri Institute for Pharmacological Research, Bergamo, Italy, November 21-22, 2022.
- E. Lanzarone. **I modelli matematici della circolazione sanguigna**. Lecturer at the Summer School "Matematica e Scienze della Vita: modelli e algoritmi della salute" organized by the University of Bergamo, September 5-7, 2022.
- E. Lanzarone. **Blood donation towards service delocalization: new models and new challenges**. Lecturer at the EURO Winter School "OR in Public Health Emergencies" (ORPHES), January 10 - February 25, 2022.

Seminars:

- **Planning blood fractionation into components: comparison between a linear programming model and a discrete event simulation tool**. Seminar at CNR, Institute for Systems Analysis and Computer Science (IASI), Rome, Italy, January 22, 2026.
- **New scheduling problems in the the health care sector: the in-hospital 3D printing service**. Seminar at the Technology Campus of KU Leuven, Ghent, Belgium, July 5, 2023.
- **A decision support tool for scheduling blood donation appointments at the collection center or atdonor's home**. Seminar at CNR, Institute for Systems Analysis and Computer Science (IASI), Rome, Italy, January 31, 2023.
- **Scheduling appointments for blood donation: from donations at the collection center to home blood donation**. Seminar at the University of Pavia, Pavia, Italy, November 9, 2022.
- **Operations research applied to health services: from theory to practice**. Seminar at the Politecnico di Milano, Milan, Italy, May 12, 2022.
- **Mathematical approaches for bioengineering**. Seminar at the University of Pavia, Pavia, Italy, May 2, 2022.
- **An implementor-adversary robust framework for the nurse-to-patient assignment problem in home care with dynamic reassignments**. Seminar at CNR, Institute for Systems Analysis and Computer Science (IASI), Rome, Italy, November 24, 2021.
- **An implementor-adversary approach to consider uncertain and temporally correlated patient demands in the home health care robust nurse-to-patient assignment problem**. Seminar at the Technology Campus of KU Leuven, Ghent, Belgium, February 24, 2020. Seminar at KU Leuven, Department of Information Management, Modeling and Simulation, Bruxelles, Belgium, February 25, 2020.
- **Lumped parameter models of the cardiovascular system and design of an in-vitro mock loop circuit of the arterial circulation**. Seminar at the University of Pavia, Pavia, Italy, May 21, 2019.
- **A blood donation appointment scheduling**. Seminar at the Université Laval, Faculty of Business Administration, CIRRELT, Quebec, Canada, February 11, 2019.
- **Application of the cardinality-constrained approach to address problems in healthcare activities planning**. Seminar at the Université de Montréal, CIRRELT, Montréal, Canada, May 20, 2016. Seminar at the Université Laval, Faculty of Business Administration, CIRRELT, Quebec, Canada, March 24, 2016.
- **Applying Operations Research from Theory to Practice: examples from Health Care Services**. Seminar at the Yeditepe University, Industrial and Systems Engineering Department, Istanbul, Turkey, November 30 and December 1, 2015.
- **Bayesian reverse engineering approach to estimate parameters from observations in dynamical systems**. Seminar at the Shanghai Jiao Tong University, School of Mechanical Engineering, Shanghai, China, May 6, 2015.
- **Different approaches for a robust optimization of the home care services**. Seminar at the University of Nottingham, China Campus, Department of Mechanics Materials and Manufacturing Engineering, Ningbo, China, May 4, 2015.
- **Applying the cardinality-constrained approach in health care systems (standard two levels or more levels): the home care example**. Seminar at the Shanghai Jiao Tong University, School of Mechanical Engineering, Shanghai, China, April 28, 2015.
- **Robust approaches in optimization methods for health care delivery**. Seminar at the Yeditepe University, Industrial and Systems Engineering Department, Istanbul, Turkey, December 1, 2014.
- **Stochastic optimization methods for health care delivery: the home care example**. Seminar at the MOX Laboratory, Department of Mathematics, Politecnico di Milano, Milan, Italy, October 4, 2013.

Other presentations:

- E. Lanzarone, S. Casartelli. **Prendersi cura di donatori e donazioni in un centro AVIS: strumenti di gestione operativa e data science**. Gestione Operativa a Supporto del Governo Clinico (GO Health!). Turin, Italy, February 10, 2025.
- E. Lanzarone. **Initiatives of the National Resarch Council of Italy**. First Industrial Conference on Artificial Intelligence and Health (ICAIH 2019) – round table 6: European and Italian initiatives in AI and health. Regione Lombardia (Palazzo Pirelli), November 13 and 14, 2019.
- E. Lanzarone, S. Marconi. **L'idea Beta-Lab**. Beta-Lab: Ruolo della Ricerca Traslazionale. I.R.C.C.S. Policlinico San Donato, March 11, 2014.

Projects *Funded research projects*

Grants and coordination roles:

- **Clustering bayesiano per la stadiazione clinica data-driven: studio pilota per lo scompenso cardiaco a frazione di eiezione preservata – Bay-HFpEF**. Project founded under the program Seedcorn 2026 by the University of Bergamo. Principal investigator. Project developed from 2026 to 2027.
- **Blueprint alliance for a future health workforce strategy on digital and green skills – BeWell**. Project founded under the European Erasmus+ programme (grant number 101056563). Coordinator of the Unibg Research Unit after Andrea Remuzzi. Project developed from 2022 to 2026.
- **Assegno di ricerca position funded by the Università degli Studi di Bergamo within the program STaRs (Supporting Talented Researchers)**. Winner of a scholarship to activate a biyearly assegno ricerca position on the topic "approcci di ottimizzazione avanzata per la gestione integrata delle risorse nei servizi di assistenza domiciliare". Financed amount 66k€. Position activated in November 2026; position held by Martina Doneda.
- **Assegno di ricerca position funded by the Department of Management, Information and Production Engineering of the Università degli Studi di Bergamo)**. Winner of a scholarship to activate a biyearly assegno ricerca position on the topic "gestione robusta dell'assistenza sanitaria con machine learning simulato". Financed amount 55k€. Position activated in November 2024; position held by Martina Doneda.
- **AI-based methods to improve stratification of patients affected by Polycystic Kidney Disease using multi-parametric MRI – AI4PKD**. Project funded by the Italian Ministry of University and Research under the program PRIN 2022. Member of the University of Bergamo Research Unit (only effective member of the Unit already in the Project at the proposal stage) and scientific responsible for the research contracts activated on the Project; Principal investigator Elisa Scalco (CNR-ITB). Financed amount of the Project equal to 194k€. Project developed from 2023 to 2026. *The project proposal ranked first in research sector PE7.*
- **Miglioramento delle produzioni agroalimentari e tecnologie innovative per un'alimentazione più sana, sicura e sostenibile – sPATIALS3**. Hub Project funded by Regione Lombardia. Coordinator of the CNR-IMATI Research Unit until transferred from the CNR to the University of Bergamo. Financed amount of the Unit equal to 71.5k€. Project developed from 2019 to 2022. *This Project obtained the "Lombardia Innovativa" recognition.*
- **Industrial PhD position funded by CNR and Confindustria**. Winner of a scholarship to activate an industrial doctorate position (XXXV cycle). The position has been activated at the Politecnico di Milano in collaboration with Prof. Andrea Matta on the topic "stochastic energy saving policies for machine tools".
- **Future Home for Future Communities – FHfFC**. Project funded by Regione Lombardia (Act 7884 of August 5, 2016) and CNR. Coordinator of the CNR-IMATI Research Unit. Financed amount of the Unit equal to 42k€. Project developed from 2017 to 2019.
- **Fab@Hospital for bone plate fabrication and patient anatomy reconstruction using rapid prototyping technologies – F@H for 3D plates**. Flagship Project Factory of the Future (Prototype Project) funded by the Italian Ministry of University and Research and the CNR. Principal investigator; other unit coordinators Ferdinando Auricchio (Università degli Studi di Pavia) and Giacomo Copani (CNR-ITIA). Financed amount of the Project equal to 58k€. Project developed in 2016.
- **Automated electrospinning plant for industrial manufacturing of functional composite nanofibres – AUTOSPIN**. Flagship Project Factory of the Future (Prototype Project) funded by the Italian Ministry of University and Research and the CNR. Coordinator of the CNR-IMATI Research Unit. Financed amount of the Project equal to 54k€. Project developed in 2016.
- **Hospital factory for manufacturing customized, patient specific 3D anatomo-functional models and prostheses – Fab@Hospital**. Flagship Project Factory of the Future (Subproject S2) funded by the Italian Ministry of University and Research and the CNR. Principal investigator; other unit coordinators Ferdinando Auricchio (Università degli Studi di Pavia) and Giacomo Copani (CNR-ITIA). Financed amount of the Project equal to 149.5k€. Project developed from 2014 to 2016.
- **Composite nanofibres for treatment of air and water by an industrial conception of electrospinning – NanoTWICE**. Flagship Project Factory of the Future (Subproject S1) funded by the Italian Ministry of University and Research and the CNR. Coordinator of the CNR-IMATI Research Unit. Financed amount of the Project equal to 300k€. Project developed from 2013 to 2015.
- **Sviluppo di uno strumento di supporto per l'allocazione ottimale delle risorse umane in assistenza domiciliare**. Project founded by Fondazione Floriani. Referent of the project together with Andrea Matta. Project developed from 2010 to 2011.

Main participations:

- **Valorizzazione di Infrastrutture e Tecnologie Avanzate per la Longevità e l'Innovazione nella Salute – VITALIS**. Project founded by Regione Lombardia – Bando Infrastrutture di Ricerca. Member of the Research Unit; principal investigator Chiara Emma Campiglio. Project developed from 2026 to 2028.
- **Applicazione di strumenti di IA per l'analisi di sedute in un contesto clinico: uno studio pilota sull'alleanza terapeutica – IAlliance**. Project founded under the program Seedcorn 2025 by the University of Bergamo. Member; principal investigator Agostino Brugnera. Project developed from 2025 to 2026.
- **AdvaNced Technologies for Human-centrEd Medicine – ANTHEM**. Project founded under the "Piano Nazionale Complementare al PNRR (PNC)" programme. Member of the Unibg Spoke 1; spoke coordinator Fabio Previdi. Project developed from 2022 to 2026.
- **A Network for Trustworthy Artificial Intelligence – TAILOR**. Project founded under the European ICT-48-2020 programme. Referent of the CNR-IMATI for the CNR Research Unit coordinated by Fosca Giannotti, until transferred from CNR to Unibg. Project developed from 2020 to 2023.
- **Self-Optimizing Shredding Station for Demanufacturing Plants – ShredIT**. Flagship Project Factory of the Future (Prototype Project) funded by the Italian Ministry of University and Research and the CNR. Member of the CNR-IMATI Research Unit; unit coordinator Antonio Pievatolo. Project developed in 2016.
- **Project Fabbrica Intelligente – FIDEAS**. Project funded by Regione Lombardia (Act 3667 of April 27, 2013) and CNR. Member of the CNR-IMATI Research Unit; unit coordinator Antonio Pievatolo. Project developed from 2013 to 2015.
- **Integrated technological solutions for zero waste recycling of printed circuit boards – ZeroWastePCBs**. Flagship Project Factory of the Future (Subproject S1) funded by the Italian Ministry of University and Research and the CNR. Member of the CNR-IMATI Research Unit; unit coordinator Antonio Pievatolo. Project developed from 2013 to 2015.
- **Flagship Project InterOmics – Subproject S1 – WP15**. Flagship Project PB.P05 funded by the Italian Ministry of University and Research and the CNR. Member of the CNR-IMATI Research Unit; unit coordinator Liliana Ironi. Project developed from 2012 to 2014.
- **Sviluppo di uno strumento di supporto alla pianificazione del servizio di assistenza domiciliare**. Project founded by Fondazione Lu.V.I. Onlus. Member of the Politecnico di Milano Research Unit; unit coordinator Andrea Matta. Project developed from 2008 to 2009.

Other participations:

- **Virtual modeling and additive manufacturing (3D printing) for advanced materials – 3D@UniPV**. Progetto Strategico di Ateneo 2015, Università degli Studi di Pavia. CNR-IMATI is Project Collaborator; reference people are: Annalisa Buffa, Ettore Lanzarone.
- **La Matematica per la società e l'innovazione tecnologica – MATHTECH**. Progetto Premiale 2012, funded by the Italian Ministry of University and Research. Member of WP2 "Salute e Benessere" and WP5 "Fabbrica del futuro" (Leader of Task 5.3 "Modelli stocastici nella manifattura").

Collaborations:

- **Consultant for the Project "Ferramentas de apoio à decisão para a gestão da Hospitalização Domiciliária"** founded within the 2023 Portugese Call for IC & DT Research Projects. Principal Investigator Daniel Santos.
- **Collaborator of the COVAID group of the University of Bergamo** in support of the intensive care unit of the Papa Giovanni XXIII hospital, Bergamo, Italy, for the analysis of data from patients with COVID-19.
- **Collaboration with AVIS Comunale di Milano**. Collaboration with the Associazione Volontari Italiani del Sangue (Milan department) for the optimal donor flow management, provided free of charge to support the association's activities. Contact person of the association Sergio Casartelli (general director).
- **Collaboration with Paloma 2000**. Collaboration with the Social Cooperative Paloma 2000 for the optimal management of home care services, provided free of charge to support the cooperative's activities. Contact person of the cooperative Cecily Castelnovo.
- **Sistema di Monitoraggio Ambientale con Rete di sensori e Telemonitoraggio indossabile a supporto di servizi di salute, prevenzione e sicurezza per l'active aging – SMARTA**. Project funded by Regione Lombardia within the call Smart Cities and Communities. Contract collaborator for the project. Project developed from 2014 to 2015.

Mobility Projects:

- **Ottimizzazione con decisori multipli e incertezza nei dati**. Project funded by the Istituto Nazionale di Alta Matematica "Francesco Severi" (INDAM) in 2024. Project member; coordinator Sara Mattia.
- **Ottimizzazione con incertezza**. Project funded by the Istituto Nazionale di Alta Matematica "Francesco Severi" (INDAM) in 2022. Project member; coordinator Sara Mattia.
- **Ottimizzazione bilivello**. Project funded by the Istituto Nazionale di Alta Matematica "Francesco Severi" (INDAM) in 2020. Project member; coordinator Sara Mattia.
- **Advanced visual tool for the collaborative replanning of service delivery at home: application to home health care**. Project no.138 funded by the Visionair European infrastructure. TNA referent of the project. Project developed from February 2014 to April 2014.
- **Data visualization for the complexity of human resource planning in home health care**. Project no.29 funded by the Visionair European infrastructure. TNA referent of the project. Project developed from November 2012 to July 2013.

Other results in proposed research projects:

- **Robotics for rehabilitation: robotized motor coordination analysis and therapy – R4R**. Project presented to the call FIRB 2008 (code RBFR08MBEO) of the Italian Ministry of University and Research. Coordinator of the Politecnico di Milano Research Unit. Proposal admitted to the national auditions and declared fundable, even if not funded due to lack of additional funds.

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Consultancy and software

Consultancy

Activities for clinical studies on devices for CE and/or FDA marking (the total value of the contracts signed to date amounts to 274.8k€+ VAT):

- AorticLab SrL; *Attività di consulenza riguardante la stesura di piani statistici e analisi statistica dei dati riguardanti studi clinici su dispositivi interventistici cardiovascolari*; January 2024 - December 2024.
- AorticLab SrL; *Attività di consulenza relativa all'analisi statistica dei dati provenienti dallo studio Nautilus del dispositivo Embrace*; November 2021 - December 2023.
- BetaGlue Therapeutics SpA; *Attività di consulenza riguardanti l'assetto statistico del programma di sviluppo clinico del Committente*; January 2024 - December 2026.
- Endostart SrL; *Attività di consulenza riguardante il piano di analisi statistica e il dimensionamento del campione dello studio clinico del dispositivo Endorail, per la validazione clinica negli USA tramite uno studio multicentrico randomizzato*; May 2025 - August 2025.
- Endostart SrL; *Attività di consulenza riguardante il piano di analisi statistica e il dimensionamento del campione dello studio clinico Del dispositivo Endorail, con particolare riferimento all'FDA presubmission meeting*; November 2021 - February 2022.
- Heart Force Medical Inc; *Consultancy activities related to the statistical design and the sample size definition for the US study of the CardioClin System, to be included in the Pre-Submission for 510(k) Premarket Notification*; October 2025 - November 2025.
- Ma.CRO Lifescience SrL; *Attività di consulenza riguardanti l'assetto statistico di vari programmi di sviluppo clinico, sia nell'ambito farmaceutico che di dispositivi medici, gestiti dal Committente*; April 2026 - April 2028.
- Medi.Ma SrL; *Attività di consulenza riguardante l'analisi costi-benefici del sistema di prevenzione delle cadute Verso Vision, a partire da prospettici raccolti in ambito ospedaliero*; July 2026 - November 2026.
- Meditrial SrL; *Attività di consulenza riguardante l'analisi completa di statistical analysis plan a supporto di uno studio clinico di un dispositivo CAD per endoscopia*; September 2022 - October 2022; December 2022 - January 2023.
- Myra Medical SàrL; *Attività di consulenza riguardante il calcolo statistico per un sample size dedito all'avvio di uno studio clinico basato sul trattamento del nervo vasivertebrale*; December 2021 - January 2022; November 2023 - November 2025.
- Next-Biomed SrL; *Attività di consulenza riguardante il calcolo statistico per sample sizes relativi a studi clinici di dispositivi medici in fase di certificazione o già certificati (marchio CE)*; February 2025 - December 2027.

Software products

- Developer of the optimization algorithm that supports planning at Compass Care LLC, Stamford, CT, US. www.CareWhenYouNeedIt.com
- Developer of the optimization algorithm in TPS 3.0. www.tpssolutions.it
- Developer of the module for forecasting and assigning workload to operators contained in Hopera Oikos. www.newsysline.it
- Developer of Bee@home (human resource planner for home care service) for Bee Value Srl. This was a consultancy and technology transfer company, with an according partnership with CNR-IMATI (protocol CNR-IMATI no. 781 of April 19, 2013) for the development and the dissemination of optimization algorithms.

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Didactic activity

PhD and higher education courses:

- *Applicazioni pratice dell'IA in Sanità*, Università degli Studi di Milano Bicocca - Bicocca Academy, Master in Innovazione Digitale e Intelligenza Artificiale nel Settore Sanitario (DAI4Health), A.Y. 2025/26 - 2026/27.
- *Problemi decisionali a livello strategico nella sanità: studio di casi* and *Problemi decisionali a livello operativo nella sanità: studio di casi*, University of Calabria, Master "Health Care Drivers", A.Y 2025/26 - 2026/27.
- *Imaging and VR technologies for cardiac surgery*, Università degli Studi di Bergamo – Higher Education School, International Master of Cardiology and Techniques Applied to Cardiac Surgery, A.Y. 2022/23 - 2026/27.
- *Biomedical device development and validation process*, Università degli Studi di Bergamo, PhD in Artificial Intelligence for Sustainable Futures, A.Y. 2025/26.
- *Advanced quantitative methods for bioengineering*, Università degli Studi di Bergamo, PhD in Engineering and Applied Sciences, A.Y. 2022/23, 2024/25.
- *Biomedical device development and validation process*, Università degli Studi di Bergamo, PhD in Engineering and Applied Sciences, A.Y. 2023/24.
- *Imaging and technologies for cardiac surgery*, Università degli Studi di Bergamo – Higher Education School, International Master of Cardiology and Techniques Applied to Cardiac Surgery, A.Y. 2021/22.

University courses (professor):

- *Computer modeling and artificial kidney* (Università degli Studi di Bergamo and Università degli Studi di Milano Bicocca): Degree Course in Medicine and Surgery, A.Y. 2026/27.
- *Applicazioni ingegneristiche in ambito biomedico* (Università degli Studi di Bergamo): Bachelor's Degree Course in Ingegneria delle Tecnologie per la Salute, A.Y. 2025/26 - 2026/27.
- *Biomechanics and medical device simulations* (Università degli Studi di Bergamo): Master's Degree Course in Medical Engineering, A.Y. 2023/24 - 2026/27.
- *Clinical decision support systems* (Università degli Studi di Bergamo and Università degli Studi di Milano Bicocca): Degree Course in Medicine and Surgery, A.Y. 2022/23 - 2026/27.
- *Modeling and simulation* (Università degli Studi di Bergamo and Università degli Studi di Milano Bicocca): Degree Course in Medicine and Surgery, A.Y. 2020/21 - 2026/27.
- *Medical support systems for chronic diseases* (Università degli Studi di Bergamo): Master's Degree Course in Medical Engineering, A.Y. 2023/24 - 2026/27.
- *Modeling and simulation I - clerkship* (Università degli Studi di Bergamo and Università degli Studi di Milano Bicocca): Degree Course in Medicine and Surgery, A.Y. 2023/24 - 2025/26.
- *Image based biomechanics lab* (Università degli Studi di Bergamo): Master's Degree Course in Engineering and Management for Health, A.Y. 2019/20 – 2024/25.
- *Biomedical engineering applications* (Università degli Studi di Bergamo): Bachelor's Degree Course in Ingegneria delle Tecnologie per la Salute, A.Y. 2022/23.
- *Medical support systems for chronic diseases* (Università degli Studi di Bergamo): Master's Degree Course in Engineering and Management for Health, A.Y. 2018/19 – 2022/23.
- *Mathematical Analysis I* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Civile - international track, A.Y. 2020/21.

- *Analisi e Geometria 1* (Politecnico di Milano): Bachelor's Degree Courses in Ingegneria Aerospaziale, Energetica e Meccanica (alphabetical group STR-Z), A.Y. 2017/18 – 2020/21; Politecnico di Milano, Bachelor's Degree Courses in Ingegneria Aerospaziale, Energetica e Meccanica (alphabetical group SPE-Z), A.Y. 2015/16, 2016/17.
- *Analisi Matematica 1* (Politecnico di Milano): Bachelor's Degree Courses in Ingegneria Elettronica, Informatica, delle Telecomunicazioni, dell'Automazione e Elettrica (alphabetical group SAZ-Z), A.Y. 2019/20; Bachelor's Degree Courses in Ingegneria Elettronica, Informatica, delle Telecomunicazioni, dell'Automazione e Elettrica (alphabetical group SD-Z), A.Y. 2017/18, 2018/19.
- *Analisi Matematica II* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Gestionale (alphabetical group PO-Z), A.Y. 2016/17.
- *Analisi matematica 2* (Politecnico di Milano): Bachelor's Degree Courses in Ingegneria Informatica e delle Telecomunicazioni (alphabetical group P-Z), A.Y. 2012/13 – 2014/15.
- *Fisica Tecnica* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Civile e Ambientale, Polo Regionale di Lecco, A.Y. 2009/10.

Previously, he was a lecturer at the Politecnico di Milano, Milan, Italy.

University courses (lecturer):

- *Mathematical Analysis I* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Civile - international track (professor myself), A.Y. 2020/21.
- *Analisi Matematica II* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Matematica (Prof. Gianni Arioli), A.Y. 2013/14 – 2016/17; Bachelor's Degree Course in Ingegneria Fisica (Prof. Gianni Arioli), A.Y. 2010/11 – 2012/13; Bachelor's Degree Course in Ingegneria Gestionale (Prof. Gianni Arioli), A.Y. 2011/12.
- *Analisi e Geometria 2* (Politecnico di Milano): Bachelor's Degree Courses in Ingegneria Aerospaziale, Energetica e Meccanica (Prof. Federico Giampiero Lastaria), A.Y. 2012/13.
- *Analisi e Geometria 1* (Politecnico di Milano): Bachelor's Degree Courses in Ingegneria Aerospaziale, Energetica e Meccanica –percorso ASPRI– (Prof. Maria Cristina Cerutti), A.Y. 2012/13; Bachelor's Degree Courses in Ingegneria Aerospaziale, Energetica e Meccanica (Prof. Marco Ugo Claudio Boella), A.Y. 2011/12.
- *Analisi Matematica I e Geometria* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Gestionale (Prof. Roberto Notari), A.Y. 2011/12; Bachelor's Degree Course in Ingegneria Gestionale (Prof. Marco Ugo Claudio Boella), A.Y. 2010/11.
- *Probabilità e Statistica Matematica* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Gestionale (Prof. Marco Ugo Claudio Boella), A.Y. 2008/09 – 2010/11.
- *Complementi di Analisi Matematica* (Politecnico di Milano): Master's Degree Course in Ingegneria Chimica (Prof. Gianni Arioli), A.Y. 2008/09, 2009/10.
- *Sistemi integrati di produzione* (Politecnico di Milano): Master's Degree Course in Ingegneria Meccanica (Prof. Andrea Matta), A.Y. 2010/11.
- *Fisica Tecnica e Sistemi Energetici – modulo di Fisica Tecnica* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Gestionale (Prof. Antonio Salerno), A.Y. 2011/12; Bachelor's Degree Course in Ingegneria Gestionale (Prof. Alberto Salioni), A.Y. 2010/11, 2011/12.
- *Fisica Tecnica* (Politecnico di Milano): Bachelor's Degree Course in Ingegneria Aerospaziale (Prof. Ferruccio Miglietta); A.Y. 2008/09 – 2010/11; Bachelor's Degree Course in Ingegneria Civile e Ambientale (Prof. Fabio Inzoli); Polo Regionale di Lecco, A.Y. 2010/11; Bachelor's Degree Course in Ingegneria Civile e Ambientale (Prof. Fabio Inzoli); Polo Regionale di Como, A.Y. 2010/11; Bachelor's Degree Course in Ingegneria Meccanica (Prof. Ferruccio Miglietta), A.Y. 2004/05 – 2006/07.

Moreover, he also performed other didactic activities at Politecnico di Milano: he was a project tutor for the course *Bayesian Statistics* (Prof. Alessandra Guglielmi), from A.Y. 2015/16; he was a project reviewer for the course *Research management* (Ph.D. school, Prof. Tullio Tolio e Marcello Urgo), A.Y. 2010/11, 2012/13, and 2013/14; he performed seminars for various courses within the Industrial Bioengineering and various tutoring activities.

He has been Advisor of Master's and Bachelor's Degree Theses.

List of Master's Degree Theses:

- F. Ferraro. **A deep learning-based segmentation tool for enabling surgical vision in laparoscopic sleeve gastrectomy**. Master's Degree Thesis in Medical Engineering, University of Bergamo, 2025/26. Advisor: E. Lanzarone. Co-advisor: E. Scalco.

- V. Brembilla. **Development and preliminary clinical validation of a holographic extended reality tool for optimized ports placement in robotic mitral valve surgery**. Master's Degree Thesis in Medical Engineering, University of Bergamo, 2024/25. Advisor: E. Lanzarone. Co-advisor: A. Agnino.
- R.B.A. Massobrio. **Digital transformation and process reengineering in hospital procurement: a case study of SAP ERP implementation at Humanitas Gavazzeni**. Master's Degree Thesis in Medical Engineering, University of Bergamo, 2024/25. Advisor: E. Lanzarone.
- C. Bardaoui, L. Piccamiglio. **Implementation and comparative study of convolutional neural networks for the automatic segmentation of arteriovenous fistula blood vessels in MR imaging**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2024/25. Advisor: E. Lanzarone. Co-advisors: A. Remuzzi.
- A. Merli. **Segmentation variability in uncertainty informed neural networks: impact on radiomic reproducibility in lung cancer**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2024/25. Advisor: E. Lanzarone. Co-advisors: E. Scalco.
- A. Brigatti. **An ILP-based tool for managing operating room scheduling in the orthopaedics department**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2024/25. Advisor: E. Lanzarone. Co-advisors: G. Carello, M. Doneda.
- D. Salvi. **A machine learning model for early prediction of robotic epicardial ablation efficacy in atrial fibrillation treatment**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2024/25. Advisor: E. Lanzarone. Co-advisors: A. Agnino, E. Celentano.
- S. Chiesa. **A lumped parameter model for simulating the effects of interatrial shunt devices in heart failure with preserved ejection fraction**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2023/24. Advisor: S. Caravita. Co-advisor: E. Lanzarone.
- R. Ceresoli. **Prediction of cardiopulmonary exercise test variables based on clinical and hemodynamic data**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2023/24. Advisor: S. Caravita. Co-advisor: E. Lanzarone.
- A. Locatelli. **Development and analysis of a lumped parameter model for simulating pulmonary circulatory system in patients with secondary tricuspid regurgitation**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2023/24. Advisor: S. Caravita. Co-advisor: E. Lanzarone.
- D. Ahbar. **U-net models for the segmentation of livers with early-intermediate stage PDAC metastases**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2023/24. Advisor: E. Lanzarone. Co-advisor: F. Sangalli.
- E. Elzi. **Discrete event simulation for improving cardiac robotic operating theater efficiency: comparison between the current and the future configuration**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2023/24. Advisor: E. Lanzarone. Co-advisor: A. Agnino.
- F. Lussana. **Radiomic analysis for the characterization of non-cystic tissue from Autosomal Dominant Polycystic Kidney Disease (ADPKD) patients using multi-parametric MRI**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2023/24. Advisor: E. Lanzarone. Co-advisor: E. Scalco.
- S. Noto Millefiori. **A post-processing approach for segmentation: 3D reconstruction tools following a 2D-Convolutional Neural Network (CNN)**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2023/24. Advisor: E. Lanzarone. Co-advisor: E. Scalco.
- S. Di Chiaro. **Investigating the effects of diffusion model and microstructural measures on the analysis of the structural brain connectivity in older adults**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2022/23. Advisor: E. Lanzarone. Co-advisors: A. Mastropietro, F. Prinelli.
- A. Lucchini, M. Brambilla. **Left ventricular pressure-volume loops algorithm: synchronization of echocardiographic and catheterization data and single-beat estimation of hemodynamic parameters**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2022/23. Advisor: S. Caravita. Co-advisor: E. Lanzarone.
- M. Magni, E. Perri. **A deep learning tool for 3D recognition and segmentation of physiological uptake of 18F-FDG-PET**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2022/23. Advisor: E. Lanzarone. Co-advisor: E. De Bernardi.
- M. Bernini. **CFD study on complex intracranial aneurysms and respective physiological conditions to investigate the role of morphology and hemodynamic in the process of pathological vessel wall remodeling**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2022/23. Advisor: E. Lanzarone. Co-advisors: M. Bozzetto, L. Soliveri.

- F. Parenti, C. Tiraboschi. **Segmentation of metastatic livers: manual and U-net based procedures**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2022/23. Advisor: E. Lanzarone. Co-advisors: F. Sangalli, A. Resovi.
- S. Pozzi **Comparison of uncertainty quantification approaches for Bayesian convolutional neural networks: application to image segmentation in oncology**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2022/23. Advisor: E. Lanzarone. Co-advisor: E. Scalco.
- A. Bertocchi **Development of an app based on a supervised machine learning algorithm to predict glycemic scores after meals**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2022/23. Advisor: A. Ferramosca. Co-advisor: E. Lanzarone.
- A. Bisesti. **Integrating uncertainty quantification in breast tumor image segmentation by means of a Bayesian convolutional neural network**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2021/22. Advisor: E. Lanzarone. Co-advisor: E. Scalco.
- J. Volpi. **Computational fluid dynamic modeling of flow-altering surgical procedures in complex cerebral aneurysms**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2021/22. Advisor: E. Lanzarone. Co-advisor: M. Bozzetto.
- M. Esposito, C. Rusconi. **Implementation of machine learning algorithms to predict the clinical outcome of the arteriovenous fistula for hemodialysis**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2021/22. Advisor: E. Lanzarone. Co-advisor: M. Bozzetto.
- F. Bonacorsi. **Development of a Convolutional Neural Network for automatic quantification of renal interstitial volume**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2021/22. Advisor: E. Lanzarone. Co-advisors: A. Caroli, A. Remuzzi.
- M. Rombolotti. **Automatic segmentation of kidneys affected by polycystic kidney disease using U-Net based models**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2019/20. Advisor: A. Guglielmi. Co-advisors: E. Lanzarone, A. Remuzzi.
- M. Schena, F. Testa. **Development of a flexible CTA-to-CFD pipeline to study patient-specific hemodynamics in complex cerebral aneurysms**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2019/20. Advisor: E. Lanzarone. Co-advisor: M. Bozzetto.
- A. Scaburri. **A computational model of lower limb circulation for surgical planning of deep veins arterialization in the treatment of critical limb ischemia**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2019/20. Advisor: E. Lanzarone. Co-advisor: A. Remuzzi.
- M. Begnis, Y. Chaar. **Enhancing Bayesian approaches for intravoxel incoherent motion parameters estimation in diffusion-weighted MRI by clustering techniques**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2019/20. Advisor: E. Lanzarone.
- C. Mazzanti. **Biomedical sample transportation problem: an iterative time decomposition scheme with fix and optimize techniques**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2019/20. Advisor: G. Carello. Co-advisors: A.M. Anaya-Arenas, V. Bélanger, E. Lanzarone, A. Ruiz.
- M. Doneda. **A discrete-event simulation model for the improvement of operations in a blood donation center**. Master's Degree Thesis in Engineering and Management for Health, University of Bergamo, 2019/20. Advisor: E. Lanzarone. Co-advisors: S. Yalçindağ, I. Marques.
- L. Galperti. **Un approccio robusto per l'assegnamento paziente-operatore nei servizi di assistenza domiciliare con riassegnamento dinamico**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2019/20. Advisor: G. Carello. Co-advisor: E. Lanzarone.
- Y. Zhu. **Home care scheduling considering preference matching**. Master's Degree Thesis in Mechanical Engineering, Politecnico di Milano, 2019/20. Advisor: A. Matta. Co-advisor: E. Lanzarone.
- E. Spinelli. **Count process approach to recurrent event data: a Bayesian model for blood donations**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2018/19. Advisor: A. Guglielmi. Co-advisor: E. Lanzarone.
- L. Malagodi. **Home Care Vehicule Routing Problem: the case of chargeable overtime and preferences**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2017/18. Advisor: A. Matta. Co-advisor: E. Lanzarone.
- S. Carlucci. **Blood donation appointment scheduling problem: an implementor-adversarial robust approach**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2016/17. Advisor: G. Carello. Co-advisor: E. Lanzarone.

- M. Toschi. **Two local search heuristic approaches for solving the biomedical sample transportation problem**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2016/17. Advisor: G. Carello. Co-advisors: A.M. Anaya-Arenas, V. Bélanger, E. Lanzarone, V. Nicoletta, A. Ruiz.
- E. Galluccio. **A recursive optimization-simulation approach for the ambulance location and dispatching problem**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2016/17. Advisor: G. Carello. Co-advisors: V. Bélanger, E. Lanzarone, V. Nicoletta, A. Ruiz.
- I. Gianoli. **Analysis of gap times of recurrent blood donations via Bayesian nonparametric models**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2015/16. Advisor: A. Guglielmi. Co-advisor: E. Lanzarone.
- G. Lugaresi. **The cardinality-constrained approach applied to manufacturing problems**. Master's Degree Thesis in Mechanical Engineering, Politecnico di Milano, 2015/16. Advisor: A. Matta. Co-advisor: E. Lanzarone.
- V. Nicoletta. **Robust optimization approach for location-allocation problems under demand uncertainty**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2015/16. Advisor: E. Amaldi. Co-advisors: V. Bélanger, E. Lanzarone, A. Ruiz.
- D. Laricini. **Un approccio Implementor-Adversary per l'assegnamento dei pazienti agli operatori nei servizi di assistenza domiciliare con domande incerte e temporalmente correlate**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2014/15. Advisor: G. Carello. Co-advisor: E. Lanzarone.
- M. Ciniselli. **Un approccio robusto per il problema dell'assegnamento ottimale dei pazienti agli operatori nei servizi di assistenza domiciliare**. Master's Degree Thesis in Mathematical Engineering, Politecnico di Milano, 2013/14. Advisor: G. Carello. Co-advisor: E. Lanzarone.
- L. Pagani. **Progettazione, implementazione e validazione sperimentale di un software di controllo retroazionato per una pompa pulsatile da banco**. Master's Degree Thesis in Ingegneria Biomedica, Politecnico di Milano, 2006/07. Advisor: M.L. Costantino. Co-advisors: E. Lanzarone, E. Cutrì.
- F. Barbone, G. Intini. **Modello del controllo endoteliale della circolazione arteriosa in perfusione continua o pulsatile**. Master's Degree Thesis in Ingegneria Biomedica, Politecnico di Milano, 2006/07. Advisor: M.L. Costantino. Co-advisor: E. Lanzarone.
- F. Aletti. **Risposta dei distretti periferici alle condizioni di circolazione in un modello di albero arterioso**. Master's Degree Thesis Ingegneria Biomedica, Politecnico di Milano, 2004/05. Advisors: G. Baselli, M.L. Costantino. Co-advisor: E. Lanzarone.

He has been Opponent of Master's and Bachelor's Degree Theses.

List of Master's Degree Theses:

- C. Pasini, P. Valentini. Master's Degree Thesis in Medical Engineering (*advisors D. Pala, A. Ferramosca, C. Sirtoli and N.D. Borella*), University of Bergamo, 2025/26.
- S. Destro. Master's Degree Thesis in Mathematical Engineering (*advisors I. Epifani, A. Guglielmi and S. Colombara*, Politecnico di Milano, 2024/25.
- G. Salvetti. Master's Degree Thesis in Engineering and Management for Health (*advisors S. Caravita and F.M.A. Brasca*, University of Bergamo, 2023/24.
- F. Arrigoni. Master's Degree Thesis in Mathematical Engineering (*advisors I. Epifani and A. Guglielmi*, Politecnico di Milano, 2023/24.
- G. Sangaletti, F. Facoetti. Master's Degree Thesis in Management Engineering (*advisors A. Ferramosca, M. Polver and B. Sonzogni*), University of Bergamo, 2023/24.
- L. Cavagna, G. Mologni. Master's Degree Thesis in Management Engineering (*advisors M. Cattaneo and F. Maggioni*), University of Bergamo, 2023/24.
- N. Licini. Master's Degree Thesis in Engineering and Management for Health (*advisors A. Ferramosca, M. Polver and B. Sonzogni*), University of Bergamo, 2023/24.
- G. Gabrielli. Master's Degree Thesis in Mathematical Engineering (*advisors G. Carello and M. Doneda*, Politecnico di Milano, 2022/23.
- A. Mazzola. Master's Degree Thesis in Engineering and Management for Health (*advisor A. Remuzzi*), University of Bergamo, 2021/22.
- F. Malvezzi. Master's Degree Thesis in Engineering and Management for Health (*advisor A. Ferramosca*), University of Bergamo, 2021/22.
- C. Doneda, M. Fumagalli. Master's Degree Thesis in Engineering and Management for Health (*advisor A. Ferramosca*), University of Bergamo, 2021/22.

- S. Capelli. Master's Degree Thesis in Engineering and Management for Health (*advisors A. Remuzzi e A. Caroli*), University of Bergamo, 2021/22.
- L. Rota. Master's Degree Thesis in Engineering and Management for Health (*advisors A. Ferramosca e C. Toffanin*), University of Bergamo, 2020/21.
- G. Salvi. Master's Degree Thesis in Ingegneria Gestionale (*advisor A. Vitali*), University of Bergamo, 2020/21.
- I. Martinelli. Master's Degree Thesis in Mathematical Engineering (*advisors I. Epifani and A. Guglielmi*, Politecnico di Milano, 2019/20.
- A. Arrigoni. Master's Degree Thesis in Engineering and Management for Health (*advisors A. Remuzzi and A. Caroli*), University of Bergamo, 2019/20.
- A. Di Blasi. Master's Degree Thesis in Ingegneria Matematica (*advisors A. Guglielmi and R. Argiento*), Politecnico di Milano, 2018/19.

He has been Opponent and Committee Member for Ph.D. theses.

List:

- Opponent for the Ph.D. Thesis in Computational Mathematics, Learning and Data Science by Sara Cambiaghi (*advisor S. Gualandi*), University of Pavia, Italy, and University of Italian Switzerland, Switzerland, 2026.
- Opponent and invited member of the committee for the Ph.D. Thesis in Mechanical Engineering by Xiaoxiao Shen (*advisors S. Du and A. Matta*), Shanghai Jiao Tong University, China, 2025.
- Opponent and invited member of the committee for the Ph.D. Thesis in Information Technology by Bruno Guindani (*advisors D. Ardagna and A. Guglielmi*), Politecnico di Milano, Italy, XXXVI ciclo, 2024.
- Opponent and invited member of the committee for the Ph.D. Thesis in Information Technology by Eduardo Redondo (*advisors A. Ruiz and V. Bélanger*), Faculty of Graduate and Postdoctoral Studies, Université Laval, Canada, 2024.
- Opponent for the Ph.D. Thesis in Electronics and Communication Engineering authored by Ramaswamy Kanimozhi (*advisor R. Gayathri*), Annamalai University, India, 2022.
- Opponent for the Ph.D. Thesis in Bioengineering authored by Giordano Tasca (*advisors A. Redaelli and R. Vismara*), Politecnico di Milano, Italy, XXX cycle, 2018.
- *Ph.D. dissertations at the Departamento de Física Aplicada, Universidad de Granada, Spain.* Invited member of the committee, November 21, 2012.

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Editorial committees

Journals

- **IEEE Robotics and Automation Letters** (ISSN 2377-3766). Associate Editor.
- **Journal of Advanced Biotechnology and Bioengineering** (ISSN 2311-1755). Member of the editorial board.

Special issue on journal

- L. Örmeci, Ö. Karanfil, N. Sabounchi, E. Güneş, D. Santos F. Visintin, E. Lanzarone (eds.). **Health Care Systems Engineering - Bridging Modeling and Implementation: Decision Sciences and Engineering Innovations for Health Systems**. Flexible Services and Manufacturing Journal (ISSN 1936-6582); papers under review.
- A. Barbosa-Póvoa, E. Lanzarone, M. Oliveira, M. Reuter-Oppermann, D. Santos, F. Visintin (eds.). **Health Care Systems Engineering**. Flexible Services and Manufacturing Journal (ISSN 1936-6582); papers under review.
- V. Augusto, G. Koole, E. Lanzarone, M. Sarazin, P. Wieser (eds.). **Artificial Intelligence Methodologies for Advanced Decision Processes in Healthcare Organizations**. Flexible Services and Manufacturing Journal (ISSN 1936-6582); ; vol. 37, issue 4, 2025.
- R. Aringhieri, E. Lanzarone, M. Reuter-Oppermann, A. Rutherford, M.T. Vespucci (eds.). **OR for Healthcare in Adversities and Pandemics**. Operations Research, Data Analytics and Logistics (ISSN 3050-7855); vol. 45, 2025.

- E. Lanzarone, J. Matos Dias, F. Mallor (eds.). **Innovative Approaches for Emerging Challenges in Health Services and Care**. Operations Research for Health Care (ISSN 2211-6923); vol. 38, 2023.
- V. Augusto, N. Lahrichi, E. Lanzarone, T. Lee, J. Song (eds.). **Analytics and Optimization in Healthcare Management**. Flexible Services and Manufacturing Journal (ISSN 1936-6582); vol. 34, issue 4, 2022.

Books

- R. Aringhieri, F. Maggioni, E. Lanzarone, M. Reuter-Oppermann, G. Righini, M.T. Vespucci (eds.) **Operations Research for Health Care in Red Zone - Proceedings of ORAHS 2022**. AIRO Springer Series; vol. 10 (2023); ISBN 978-3-031-38537-7.
- V. Bélanger, N. Lahrichi, E. Lanzarone, S. Yalçindağ (eds.) **Health Care Systems Engineering - Proceedings of HCSE 2019**. Springer Proceedings in Mathematics & Statistics; vol. 316 (2020); ISBN 978-3-030-39694-7.
- R. Argiento, E. Lanzarone, I. Antoniano Villalobos, A. Mattei (eds.) **Bayesian statistics in action - Proceedings of BAYSM 2016**. Springer Proceedings in Mathematics & Statistics; vol. 194 (2017); ISBN 978-3-319-54083-2.
- E. Lanzarone, F. Ieva (eds.) **The contribution of young researchers to Bayesian statistics - Proceedings of BAYSM 2013**. Springer Proceedings in Mathematics & Statistics; vol. 63 (2014); ISBN 978-3-319-02083-9.
- A. Matta, E. Sahin, J. Li, E. Lanzarone, J. Fowler (eds.) **Proceedings of the International Conference on Health Care Systems Engineering**. Springer Proceedings in Mathematics & Statistics; vol. 61 (2014); ISBN 978-3-319-01847-8.

Conference roles

Conference chair

- *Workshop on new technologies and AI in hybrid cardiac ablation.* Bergamo, Italy, September 12 and 13, 2025. Conference chair for the University of Bergamo, with A. Agnino and E. Celentano for the Humanitas Gavazzeni hospital.
  www.humanitasedu.it/event/new-technologies-and-ai-for-hybrid-cardiac-ablation
- *48th Conference on Operational Research Applied to Health Services (ORAHS 2022).* Bergamo, Italy, July 17-22, 2022. Conference chair with G. Righini.
  orahs.di.unito.it
- *4th International Conference on Health Care Systems Engineering (HCSE 2019).* Montréal, Canada, May 30 - June 1, 2019. Conference chair with V. Bélanger, N. Lahrichi, S. Yalçindağ.
  symposia.cirrelt.ca/hcse2019
- *3rd Bayesian young statisticians meeting (BAYSM 2016).* Florence, Italy, June 19-21, 2016. Conference chair with R. Argiento.
  www.mi.imati.cnr.it/conferences/BAYSM2016
- *5th Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2015).* Milan, Italy, June 5, 2015. Co-organizer with F. Boschetti, M. Conti, L. Cristofolini and D. Gallo.
  www.esb-ita.it/main/meetings
- *1st Bayesian young statisticians meeting (BAYSM 2013).* Milan, Italy, June 5-6, 2013. Conference chair with F. Ieva.
  www.mi.imati.cnr.it/conferences/BAYSM2013

Conference board memberships

- *International Conferences on Health Care Systems Engineering (HCSE).* Chair since 2022 and Member of the Board since its establishment in 2013.
  tiny.cc/HCSE
- *EURO Working Group on Operational Research Applied to Health Services (ORAHS).* Member of the Board since 2023.
  orahs.di.unito.it
- *Bayesian Young Statisticians Meetings (BAYSM).* Founder in 2013 and Member of the Board from 2013 to 2018.
  www.baysm.org

Conference committee memberships

- *4th SICCH course on Transcatheter Minally Invasive and Robotic Surgery.* Salsomaggiore Terme, Italy, December 18-19, 2025. Member of the faculty and co-chair of the lunch session.
  www.sicch.it
- *6th International Conference on Health Care Systems Engineering (HCSE 2025).* Istanbul, Turkey, July 3-5, 2025. Chair of the scientific committee with F. Visintin.
  hcse2025.ku.edu.tr
- *50th Conference on Operational Research Applied to Health Services (ORAHS 2024).* Turin, Italy, July 14-20, 2024. Member of the scientifc and organising committees, and of the jury for the poster contest.
  orahs.di.unito.it
- *5th International Conference on Health Care Systems Engineering (HCSE 2023).* Lisbon, Portugal, September 14-16, 2023. Chair of the scientific committee with F. Visintin.
  hcse2023.tecnico.ulisboa.pt
- *49th Congress of the European Society for Artificial Organs (ESAO & IFAO 2023).* Bergamo, Italy, August 29 - September 1, 2023. Member of the local committee.
  www.esao.org
- *47th Conference on Operational Research Applied to Health Services (ORAHS 2021).* Online with virtual locations in Southampton, UK, and Burnaby, Canada, July 5-9, 2021. Member of the virtual organising committee.
  orahs.di.unito.it
- *8th Workshop on Bayesian Inference in stochastic processes (BISP8).* Milan, Italy, June 6-8, 2013. Member of the organising committee.
  www.mi.imati.cnr.it/conferences/BISP8
- *1st International Conference on Health Care Systems Engineering (HCSE 2013).* Milan, Italy, May 22-24, 2013. Member of the scientific and of the organising committees.
  hcse2013.mecc.polimi.it

Jury memberships

- *9th AIRO (Associazione Italiana di Ricerca Operativa) Young Workshop 2025.* Pavia, Italy, February 26-28, 2025. Member of the jury for the poster contest.
- *42nd Conference on Operational Research Applied to Health Services (ORAHS 2016).* Pamplona, Spain, July 24-29, 2016. Member of the jury for the poster contest.

Session and stream chair

- *52nd Conference on Operational Research Applied to Health Services (ORAHS 2026).* Belfast, UK, July 19-24, 2026. Chair of the session "Blood logistics 2".
- *6th International Conference on Health Care Systems Engineering (HCSE 2025).* Istanbul, Turkey, July 3-5, 2025. Chair of the session "Supply Chain".
- *49th Conference on Operational Research Applied to Health Services (ORAHS 2023).* Graz, Austria, July 16-21, 2023. Chair of the session "Integrated Planning of Care Networks".
- *31st European Conference on Operational Research (EURO 2021).* Athens, Greece, July 14-21, 2021. Chair of the stream "Stochastic Modeling in Health Care".
- *Winter Simulation Conference 2018.* Gothenburg, Sweden, December 9-12, 2018. Chair of the session "Emergency Medical Service Systems".
- *44th Conference on Operational Research Applied to Health Services (ORAHS 2018).* Oslo, Norway, July 29 - August 3, 2018. Chair of the session "Ambulance / Vehicle Routing I".
- *42nd Conference on Operational Research Applied to Health Services (ORAHS 2016).* Pamplona, Spain, July 24-29, 2016. Chair of the session "Home Care / LTC(I)".
- *41st Conference on Operational Research Applied to Health Services (ORAHS 2015).* Montréal, Canada, July 19-24, 2015. Chair of the session "Patient scheduling 1".
- *39th Conference on Operational Research Applied to Health Services (ORAHS 2013).* Istanbul, Turkey, July 7-12, 2013. Chair of the session "OR methodologies for home care".
- *35th Conference on Operational Research Applied to Health Services (ORAHS 2009).* Leuven, Belgium, July 12-17, 2009. Chair of the session "Home care services".

Others

- *15th International Conference on Global Health Challenges (GLOBAL HEALTH 2026)*. Barcelona, Spain, September 27 - October 1, 2026. Member of the Technical Program Committee.
  www.iaria.org/conferences2026/GLOBALHEALTH26.html
- *18th International Conference on Advances in System Simulation (SIMUL 2026)*. Barcelona, Spain, September 27 - October 1, 2026. Member of the Technical Program Committee.
  www.iaria.org/conferences2026/SIMUL26.html
- *Workshop "Foundation Models for Public Health and Epidemiology: from Promise to Practice" within the 24th International Conference on Artificial Intelligence in Medicine (AIME 2026)*. Ottawa, Canada, July 7 - 10, 2026. Member of the Program Committee.
  sites.google.com/unipv.it/fm-epidemiology-aime2026
- *18th International Conference on eHealth, Telemedicine, and Social Medicine (eTELEMED 2026)*. Venice, Italy, May 24-28, 2026. Member of the Technical Program Committee.
  www.iaria.org/conferences2026/eTELEMED26.html
- *14th International Conference on Global Health Challenges (GLOBAL HEALTH 2025)*. Lisbon, Portugal, September 28 - October 2, 2025. Member of the Technical Program Committee.
  www.iaria.org/conferences2025/GLOBALHEALTH25.html
- *17th International Conference on Advances in System Simulation (SIMUL 2025)*. Lisbon, Portugal, September 28 - October 2, 2025. Member of the Technical Program Committee.
  www.iaria.org/conferences2025/SIMUL25.html
- *17th International Conference on eHealth, Telemedicine, and Social Medicine (eTELEMED 2025)*. Nice, France, May 18-25, 2025. Member of the Technical Program Committee.
  www.iaria.org/conferences2025/eTELEMED25.html
- *16th International Conference on Advances in System Simulation (SIMUL 2024)*. Venice, Italy, September 29 - October 3, 2024. Member of the Technical Program Committee.
  www.iaria.org/conferences2024/SIMUL24.html
- *13th International Conference on Global Health Challenges (GLOBAL HEALTH 2024)*. Venice, Italy, September 29 - October 3, 2024. Member of the Technical Program Committee.
  www.iaria.org/conferences2024/GLOBALHEALTH24.html
- *16th International Conference on eHealth, Telemedicine, and Social Medicine (eTELEMED 2024)*. Barcelona, Spain, May 26-30, 2024. Member of the Technical Program Committee.
  www.iaria.org/conferences2024/eTELEMED24.html
- *15th International Conference on Advances in System Simulation (SIMUL 2023)*. Valencia, Spain, November 13-17, 2023. Member of the Technical Program Committee.
  www.iaria.org/conferences2023/SIMUL23.html
- *Winter Simulation Conference 2022*. Singapore, December 11-14, 2022. Member of the Program Committee - Healthcare Applications.
  meetings2.informs.org/wordpress/wsc2022
- *14th International Conference on Advances in System Simulation (SIMUL 2022)*. Lisbon, Portugal, October 16-20, 2022. Member of the Technical Program Committee.
  www.iaria.org/conferences2022/SIMUL22.html
- *Winter Simulation Conference 2021*. Phoenix, AZ, USA, December 12-15, 2021. Member of the Program Committee - Healthcare Applications.
  meetings2.informs.org/wordpress/wsc2021
- *Smart Healthcare International Conference 2021 (SHeIC 2021)*. Troyes, France, December 2-3, 2021. Member of the International Program Committee.
  www.sheic2021.com
- *13th International Conference on Advances in System Simulation (SIMUL 2021)*. Barcelona, Spain, October 3-7, 2021. Member of the Technical Program Committee.
  http://www.iaria.org/conferences2021/SIMUL21.html
- *17th IEEE International Conference on Automation Science and Engineering (IEEE CASE 2021)*. Lyon, France, August 23-27, 2021. Workshop and tutorial chair with X. Zhong.
  www.case2021.org
- *Winter Simulation Conference 2020*. Orlando, FL, USA, December 13-16, 2020. Member of the Program Committee - Healthcare Applications.
  meetings2.informs.org/wordpress/wsc2020
- *29th International Joint Conference on Artificial Intelligence and 17th Pacific Rim International Conference on Artificial Intelligence (IJCAI-PRICAI 2020)*. Yokohama, Japan, July 11-17, 2020. Member of the Program Committee.
  www.ijcai20.org
- *Winter Simulation Conference 2019*. National Harbor, MD, USA, December 8-11, 2019. Member of the Program Committee - Healthcare Applications.
  meetings2.informs.org/wordpress/wsc2019

- *11th International Conference on Advances in System Simulation (SIMUL 2019).* Valencia, Spain, November 24-28, 2019. Member of the Technical Program Committee.
  www.iaria.org/conferences2019/SIMUL19.html
- *ISBIS Young Business and Industrial Statisticians Workshop on Recent Advances in Data Science and Business Analytics (y-BIS 2019).* Istanbul, Turkey, September 25-28, 2019. Member of the Scientific Program Committee.
  ybis2019.msgsu.edu.tr/scientific-program-committee
- *Winter Simulation Conference 2018.* Gothenburg, Sweden, December 9-12, 2018. Member of the Program Committee - Healthcare Applications.
  meetings2.informs.org/wordpress/wsc2018
- *2nd Italian National Congress IDBN and 3rd Thematic Conference ESB-ITA on 3D Printing and Biomechanics.* Pavia, Italy, September 5-7, 2018. Member of the Scientific Committee.
  www-2.unipv.it/compmech/idbn
- *2nd Workshop on Models and Methods for Hospital Management and Planning.* Within ETFA 2016, Berlin, Germany, September 6, 2016. Member of the Workshop Program Committee.
  webdiis.unizar.es/m2h
- *EuroVR 2014 Conference.* Bremen, Germany, December 8-10, 2014. Member of the International Program Committee.
  eurovr14.uni-bremen.de

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Fellowships

Scientific responsible of the following "Assegni di Ricerca"

- Dr. Martina Doneda (November 2024 – October 2027)
  Gestione robusta dell'assistenza sanitaria con machine learning simulato.
- Dr. Francesca Lussana (March 2024 – February 2025)
  Research activity within the project AI-based methods to improve stratification of patients affected by Polycystic Kidney Disease using multi-parametric MRI (AI4PKD).
- Dr. Martina Doneda (September 2020 – October 2021)
  Research activity within the project Miglioramento delle produzioni agroalimentari e tecnologie innovative per un'alimentazione più sana, sicura e sostenibile (sPATIALS3).
- Dr. Fabiola Regis-Hernández (March 2017 – March 2018)
  Research activity within the project Future Home for Future Communities (FHfFC). She is now Professor at the Tecnológico de Monterrey, San Luis Potosí, Mexico.
- Dr. Fabio Manganini (March 2014 – March 2015)
  Modelli stocastici per l'ottimizzazione del processo di elettrofilatura e sull'analisi delle immagini SEM di manufatti ottenuti tramite elettrofilatura.
- Dr. Laura Martín-Fernández (April 2013 – September 2013)
  Modellazione stocastica dei processi industriali: frantumazione di schede elettroniche e separazione dei materiali che le compongono; deposizione di nanofibre a base polimerica su matrice tramite elettrofilatura (jointly with A. Pievatolo).

Scientific responsible of the following "Borse di Studio"

- Dr. Annalisa Romantini (June 2014)
  Modelli matematici differenziali e stocastici a supporto dello studio dell'emodinamica vascolare in vitro.
- Dr. Ilaria Bianchini (May 2014 - October 2014)
  Metodologie parametriche e non parametriche di statistica bayesiana applicate allo studio della biomeccanica.

Scientific responsible of the following "Contratti di Collaborazione"

- Dr. Lucia Galperti (July 2020 - October 2020)
  Implementazione software di un tool di ottimizzazione per l'assistenza domiciliare.
- Dr. Giuseppe La Rosa (March 2018 - June 2018)
  Integrazione di un tool di ottimizzazione con i dati contenuti nel database di AVIS Milano.
- Dr. Anna Ferrara (October 2014 - January 2015)
  Modelli matematici e strutturali a supporto dello studio dell'emodinamica vascolare in vitro.

Advisor and co-advisor of the following Ph.D. Theses

- Dr. Fabio Ferraro, ***Working Project***.
  Ph.D. Thesis in Health and Longevity, University of Bergamo, Italy, 2030.
  Advisor: E. Lanzarone; Co-advisor: E. Scalco.
- Dr. Soufia Boumediene, ***Working Project***.
  Ph.D. Thesis in Génie Industriel: conception et production, Grenoble INP, France, 2030.
  Advisor: G. Thomann; Co-advisors: M. Tummers, E. Lanzarone.
- Dr. Beatrice Molteni, ***Working Project***.
  Ph.D. Thesis in Artificial Intelligence for Sustainable Futures, University of Bergamo, Italy, 2029.
  Advisor: E. Lanzarone; Co-advisor: A. Ferramosca.
- Dr. Aleyna Gürsoy, ***Decision support systems for the management and scheduling of the production process of blood components***.
  Ph.D. Thesis in Health and Longevity, University of Bergamo, Italy, 2027.
  Advisor: E. Lanzarone; Co-advisor: R. Pinto.
- Dr. Michael Bernini, ***Computational simulations as monitoring and risk-assessing tools for cardiovascular diseases related to aging***.
  Ph.D. Thesis in Health and Longevity, University of Bergamo, Italy, 2027.
  Advisor: E. Lanzarone; Co-advisor: A. Remuzzi.
- Dr. Martina Doneda, ***On data & decision making: perspectives from healthcare applications considering representativeness and analytical scope***.
  Ph.D. Thesis in Information Technology, Politecnico di Milano, Italy, 2025.
  Advisor: G. Carello; Co-advisor: E. Lanzarone.
  This thesis received the 2026 Chofaras Foundation Award, the 2026 Springer Award from Politecnico di Milano, and the Best Presentation Award at PhD IT Talks 2026 held at Politecnico di Milano.
- Dr. Alberto Loffredo, ***Stochastic energy saving policies for machine tools***.
  Industrial Ph.D. position (XXXV cycle) funded by CNR and Confindustria (awarded to Ettore Lanzarone), in collaboration with Prof. Andrea Matta of the Politecnico di Milano.
- Dr. Seda Baş, ***Balancing the production of blood bags from donation through appointment scheduling***.
  Ph.D. Thesis in Industrial and System Engineering, Yeditepe University, Istanbul, Turkey, 2018.
  Advisor: S. Yalçindağ; Co-advisor: E. Lanzarone.
- Dr. Inad Nawajah, ***Bayesian analysis of home care longitudinal counts data***.
  Ph.D. Thesis in Mathematical Models and Methods in Engineering, Politecnico di Milano, Italy, 2014.
  Advisor: A. Guglielmi; Co-advisors: R. Argiento, E. Lanzarone.

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Visiting periods and hosted researchers

He has been visiting researcher at:

- **KU Leuven, Tchnology Campus**, Ghent, Belgium. Invited visiting researcher, July 2023. www.kuleuven.be
- **CNR, Institute for Systems Analysis and Computer Science (IASI)**, Rome, Italy. Invited visiting researcher, November 2021 and January-February 2023. www.iasi.cnr.it
- **KU Leuven, Department of Information Management, Modeling and Simulation**, Bruxelles, Belgium. Invited visiting researcher, February 2020. www.kuleuven.be
- **Université de Montréal, CIRRELT**, Montréal, Canada. Invited visiting researcher, May 2016, and May-June 2019. www.umontreal.ca
- **Université Laval, Faculty of Business Administration**, Quebec, Canada. Invited visiting researcher, July 2015, March 2016, January-February 2017, and February 2019. www.ulaval.ca
- **Laboratories of the Final Event of the Projects Factory of the Future**, Naples, Turin, Milan, Parma and Rome, Italy. Researcher invited to join the final event, November 26-30, 2018. eventofinale.fabbricadelfuturo-fdf.it
- **Universitat Politècnica de València, Departamento de Organización de Empresas**, Valencia, Spain. Invited visiting researcher, April 2018. www.doe.upv.es
- **Yeditepe University, Industrial and Systems Engineering Department**, Istanbul, Turkey. Visiting researcher for a PhD Research Project, November 2014 and November 2015. sye.yeditepe.edu.tr
- **Shanghai Jiao Tong University, School of Mechanical Engineering**, Shanghai, China. Invited visiting researcher, April-May 2015. me.sjtu.edu.cn/english

- **Labotatoire des sciences pour la conception, l'optimisation et la production (G-SCOP)**, CNRS-INPG-UJF, Grenoble, France. Invited visiting researcher, March 2015. Visiting researcher for the Visionair Project no.138, April 2014. Visiting researcher for the Visionair Project no.29, November 2012 and July 2013. www.g-scop.grenoble-inp.fr
- **HEC, Département des sciences de la décision**, Montréal, Canada. Invited visiting researcher, May 2014. www.hec.ca
- **King Abdullah University of Science and Technology (KAUST), Center for Uncertainty Quantification in Computational Science & Engineering**, Thuwal, Saudi Arabia. Invited visiting researcher, April 2013. sri-uq.kaust.edu.sa

He hosted the following researchers:

- **Sara Mattia**, CNR-IASI, Rome, Italy; April 2023.
- **Nadia Lahrichi**, École Polytechnique de Montréal, Montréal, Canada; April 2016, February-April 2017, and seminar at Unibg on March 13, 2023.
- **Andrea Lodi**, École Polytechnique de Montréal, Montréal, Canada; seminar at CNR-IMATI on February 5, 2018.
- **Semih Yalçindağ**, Yeditepe University, Istanbul, Turkey; April 2016 and March 2017.
- **Valérie Bélanger**, HEC, Montréal, Canada; March 2015 and May 2016.

Reviewer activity

Reviewer for:

- Referee for international journals (Advanced Intelligent Systems; American Journal of Physiology - Heart and Circulatory Physiology; Annals of Operations Research; Applied Stochastic Models in Business and Industry; Artificial Organs; Biological Invasions; Cardiovascular Diabetology; CIRP Journal of Manufacturing Science and Technology; Computers and Operations Research; Computers in Biology and Medicine; Decision Sciences; European Journal of Operational Research; Expert Systems with Applications; Flexible Services and Manufacturing Journal; Health Care Management Science; Health Systems; IEEE/ACM Transactions on Computational Biology and Bioinformatics; IEEE Journal of Biomedical and Health Informatics; IEEE Transactions on Automation Science and Engineering; IEEE Transactions on Biomedical Engineering; IEEE Transactions on Systems, Man, and Cybernetics; IIE Transactions on Healthcare Systems Engineering; IISE Transactions; International Journal for Numerical Methods in Engineering; International Journal of Artificial Organs; International Journal of Computer Assisted Radiology and Surgery; International Journal of Planning and Scheduling; International Journal of Production Research; International Transactions in Operational Research; Journal of Biomechanics; Journal of Cleaner Production; Journal of Mathematical Biology; Journal of Scheduling; Journal of the Operational Research Society; Mathematics; Networks; Omega - The International Journal of Management Science; Operations Research, Data Analytics and Logistics; Operations Research for Health Care; Operations Research Forum; RAIRO - Operations Research; Robotica; Science, Engineering and Health Studies; Scientia Iranica Journal; Simulation Modelling Practice and Theory; Transportation Research Part B: Methodological; Transportation Research Part E: Logistics and Transportation Review).
- Referee for the AIRO Young Dissertation Award (AYDA) 2025.
- Referee for the evaluation of research projects for the Fonds de Recherche du Québec, Canada - Nature et Technologies (FRQNT).
- Referee for the evaluation of research projects for the Discovery Grants Program on behalf of the Natural Sciences and Engineering Research Council of Canada (NSERC).
- Referee for the evaluation of research quality VQR in different rounds, on behalf of the Italian Ministry of Education, University and Research.
- Referee for the evaluation of young research projects for the program "Rita Levi Montalcini" 2020 on behalf of the Italian Ministry of Education, University and Research.
- Referee for the evaluation of research projects for the program Progetti di ricerca di Rilevante Interesse Nazionale PRIN 2020 on behalf of the Italian Ministry of Education, University and Research.
- Evaluator for the CNR of projects of the Italian Ministry of Economic Development (MISE) within the Sustainable Growth Fund.
- Referee for the evaluation of research projects Futuro in Ricerca FIRB 2013 on behalf of the Italian Ministry of Education, University and Research.
- Referee for the evaluation of research projects for the Visionair European infrastructure.

- Referee for several international conferences.

Academic committees

He partecipated to:

- Jury commission for the selection of a junior researcher (RTD-A) in Electronic and Computer Bioengineering (ING-INF/06), University of Bergamo, winter 2022.
- Jury commissions for the selection of various post-doc poistions, University of Bergamo and National Research Councily of Italy.

Engineering profession

He is member of the Ordine degli Ingegneri della Provincia di Milano
(Section A – Registration number 27094 a,b,c).
www.ordineingegneri.milano.it

Awards

He received:

- Honorable mention at the AIRO Young Best Presentation Award 2025 for the contribution *Scheduling blood components production: a real-life case study* presented by A. Gürsoy and authored by A. Gürsoy, R. Pinto, F. Piccinini, D. Ghezzi, L. Veronese, E. Volpato, S. Rossini and E. Lanzarone.
9th AIRO (Associazione Italiana di Ricerca Operativa) Young Workshop 2025, Pavia, Italy, February 2025.
airoyoung.airo.org
- Steve Gallivan Award for the contribution *A scheduling tool for the production of blood components* presented by A. Gürsoy and authored by A. Gürsoy, R. Pinto, F. Piccinini, D. Ghezzi, S. Rossini and E. Lanzarone.
ORAHS 2024 Conference, Turin, Italy, July 2024.
orahs.di.unito.it/awards.html
- Steve Gallivan Award for the contribution *A decision-making tool for the location, districting and dimensioning of Community Houses in Lombardy, Italy* presented by M. Doneda and authored by M. Doneda, E. Lanzarone, A. Barbato, C. Franchi, S. Mandelli, A. Nobili and G. Carello.
ORAHS 2023 Conference, Graz, Austria, July 2023.
orahs.di.unito.it/awards.html
- Finalist for the Healthcare Automation Award 2019 for the contribution *A variable neighborhood search for home care scheduling under chargeable overtime and preference matching* presented by A. Matta and authored by Y. Zhu, A. Matta, E. Lanzarone and N. Geng.
IEEE CASE 2019 Conference, Vancouver, Canada, August 2019.
www.ieee-ras.org
- Honorable mention as one of the three finalist papers for the INCOM Best Paper Award 2018 for the contribution *A data-driven districting to improve emergency medical service systems* presented by E. Lanzarone and authored by F. Regis-Hernández, E. Lanzarone, V. Bélanger and A. Ruiz.
IFAC INCOM 2018 Conference, Bergamo, Italy, June 2018.
www.ifac-control.org
- Finalist for the Italian Operations Research Association (AIRO) award on Operations Research for Social with the contribution *An appointment scheduling framework to balance the production of blood bags from donation* presented by E. Lanzarone and authored by E. Lanzarone, S. Baş, G. Carello and S. Yalçindağ.
AIRO 2016 Conference, Trieste, Italy, September 2016.
www.airo.org
- Italian National Bioengineering Group (GNB) award for Master Degree Thesis.
XXIII Annual School of Bioengineering, Brixen, Italy, September 2004.
www.bioing.it

November 16, 2026