

Andrea Serani

Curriculum Vitae

National Research Council
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Personal Info

Date of birth May 18, 1986
Current city Rome, Italy
Identifiers **ORCID** 0000-0002-8814-1793, **ResearcherID** D-3872-2016
Languages Italian (native), English (full professional proficiency)
Interests Simulation-based design • Optimization • Dimensionality reduction • Surrogate modelling • Multi-fidelity methods • Machine Learning • Computational Fluid Dynamics • Sustainable Transport

Current Position

since 2019 **Research Scientist**, *CNR-INM, National Research Council-Institute of Marine Engineering*, Rome, Italy, [Refs.: CNR prot. n. 0084087 in data 26/11/2019].
Multi-disciplinary analysis and design optimization.

Research Experience

- 2025 **Visiting Scholar**, *Aaron Friedman Marine Hydrodynamics Laboratory, University of Michigan*, Ann Arbor, USA.
Simulations for Autonomous Underwater Gliders and Wind-Assisted Propulsion Systems.
- 2018 – 2019 **Postdoctoral Research Fellow**, *CNR-INM, National Research Council-Institute of Marine Engineering*, Rome, Italy, [Refs.: CNR-INSEAN provvedimento 473_2017 del 28/12/2017, CNR-INM provvedimento 040_2018 del 02/07/2018, 257_2018 del 05/12/2018, 115_2019 del 20/03/2019].
Design optimization in environmental and operational stochastic conditions, based on numerical computer simulations.
- 2018 **Visiting PostDoc**, *IHR Hydrosience & Engineering, University of Iowa*, Iowa City, USA, [Refs.: CNR-INM ORDINE DI MISSIONE N. 211 DEL 01/10/2018].
Evaluation of Prediction Methods for Ship Performance in Heavy Weather.
- 2016 – 2018 **Postdoctoral Research Fellow**, *CNR-INSEAN, National Research Council-Marine Technology Research Institute*, Rome, Italy, [Refs.: CNR-INSEAN provvedimento 515_2016 del 27/12/2016].
Study and development of reliability-based and robust design optimization techniques in ship hydrodynamics for real ocean environment.
- 2013 – 2015 **PhD Fellow**, *CNR-INSEAN, National Research Council-Marine Technology Research Institute*, Rome, Italy, [Refs.: protocollo CNR-INSEAN 1451 del 13/05/2013].
Study and development of theoretical and numerical methodologies in multidisciplinary robust design optimization.

Education

- 2016 **PhD, Mechanical and Industrial engineering**, *Roma Tre University*, Rome, Italy.
Dissertation title: “Hybrid global/local optimization methods in simulation-based shape design”

- 2015 **Visiting PhD student**, *IIHR Hydroscience & Engineering, University of Iowa*, Iowa City, USA.
Topic: "Design space assessment for ship design optimization by CFD simulations"
- 2012 **Master of Science, Aeronautical engineering**, *Roma Tre University*, Rome, Italy.
Dissertation title: "RANS aerodynamics analysis of non conventional airfoil via OpenFOAM"
- 2009 **Bachelor of Science, Mechanical engineering**, *Roma Tre University*, Rome, Italy.
Dissertation title: "Numerical characterization of a cylindrical cavity"

Certifications & Licenses

- 2024 **National Scientific Qualification - Full Professor**, Sector: 09/A1 Aeronautical, Aerospace, and Naval Engineering
- 2023 **National Scientific Qualification - Associate Professor**, Sector: 09/A1 Aeronautical, Aerospace, and Naval Engineering
- 2015 **Professional License - Industrial Engineer**, Ordine degli Ingegneri di Roma, Registration Number: A36133

Fellowships & Awards

- 2026 **AVT Young Contributor Award** by NATO Science & Technology Organization, Applied Vehicles Technology
- 2025 **Short Term Mobility Award** by National Research Council, Italy for the research project "High-Fidelity Simulations for Autonomous Underwater Gliders and Wind-Assisted Propulsion Systems". Host Institution: University of Michigan; host: Prof. Kevin J. Maki, [Refs.: N. prot. n. 204616 del 06/06/2025]
- 2024 **Panel Excellence Award** by NATO Science & Technology Organization, Applied Vehicles Technology for the Research Task Group AVT-331 "Goal-Driven, multi-fidelity and multidisciplinary analysis for military vehicle system level design"
- 2018 **Short Term Mobility Award** by National Research Council, Italy for the research project "High-fidelity Simulations of Ship Performance in Heavy Weather". Host Institution: The University of Iowa; host: Prof. Frederick Stern, [Refs.: N. prot. AMMCNT CNR 0063528/2018, del 01/10/2018]
- 2018 **Best Paper Award Candidate** by Springer for the paper "Augmented Design-space Exploration by Nonlinear Dimensionality Reduction Methods" presented at the *Fourth International Conference on Machine Learning, Optimization, and Data Science, LOD 2018* in Volterra, Italy. [Refs.: mail from LOD 2018 Chairs del 2018-07-01]
- 2017 **Best Paper Award Candidate** by Springer for the paper "Nonlinear methods for design-space dimensionality reduction in shape optimization" presented at the *Third International Conference on Machine Learning, Optimization, and Data Science, MOD 2017* in Volterra, Italy. [Refs.: mail from MOD 2017 Chairs del 2017-06-29]
- 2013 **PhD Fellowship** by the Engineering, ICT and Technologies for Energy and Transportation Department, National Research Council-Marine Technology Research Institute (CNR-INSEAN), Italy, [Refs.: protocollo CNR-INSEAN 1451 del 13/05/2013]

Research Projects

International

- 2025 – 2030 **ONR ML-4D-Hydro-Structural Data-Driven MF-MDA of High-Speed Small Crafts via Multi-Loop Digital Design**, US Department of the Navy, Office of Naval Research (ONR), University of Iowa sub-award. Funding: 220k€. Position: Technical Team Member, [Refs.: Provvedimento n. INM_020_2026 del 15/01/2026]

- 2024 – 2027 **DAPHNE–Data-Driven, Physics-Based, and Equation-Free Multi-Fidelity Reduced Order Models for Fast and Accurate Predictions of Naval Ship Transient Maneuvers in Calm Water and Waves**, US Department of the Navy Office of Naval Research (ONR) Global, Naval International Cooperative Opportunities in Science and Technology Program (NICOP), grant N62909-24-1-2102. Funding: 249k\$. Position: Technical Team Member, [Refs.: Provvedimento INM_649_2025 del 24/12/2025]
- 2023 – 2026 **RETROFIT55–Retrofit solutions to achieve 55% CHG reduction by 2030**, European Union HORIZON Europe program. WP2 Hydrodynamic design optimization, CNR Funding: 732k€. Position: WP leader for CNR, [Refs.: Provvedimento n. INM_113_2023 del 02/03/2023]
- 2022 – 2025 **ONR DIGITAL–Multi-Fidelity Multi-Disciplinary Simulation-Driven Digital Design**, US Department of the Navy, Office of Naval Research (ONR), University of Iowa sub-award. Funding: 150k\$. Position: Task Leader, [Refs.: Provvedimento n. INM_357_2023 del 10/06/2023]
- 2021 – 2024 **FORWARD–Improving Knowledge, Prediction, and Forecasting of Ships in Waves via Hybrid Machine Learning Methods**, US Department of the Navy Office of Naval Research (ONR) Global, Naval International Cooperative Opportunities in Science and Technology Program (NICOP), grant N62909-21-1-2042. Funding: 180k\$. Position: Co-Principal Investigator, [Refs.: Provvedimento INM_356_2023 del 22/06/2023]
- 2020 – 2023 **MDO–High-Fidelity Multi-Phase Sharp-Interface Code Development and V&V for High Fr Small Craft FSI and MDO**, US Department of the Navy, Office of Naval Research (ONR), University of Iowa sub-award. Funding: 63k\$. Position: Task Leader, [Refs.: Attestazione INM_076_2023 del 23/06/2023]
- 2017 – 2020 **HOLISHIP–Holistic optimization of ship design and operation for life cycle**, European Commission, HORIZON 2020 program. CNR-INSEAN WP Funding: 208k\$. Position: Technical Team Member, [Refs.: Attestazione INM_022_2020 del 08/09/2020]
- 2016 – 2020 **PRICO–Analytical and Numerical Methods for Identifying Principal Components of Heterogeneous Physical Data**, US Department of the Navy Office of Naval Research (ONR) Global, Naval International Cooperative Opportunities in Science and Technology Program (NICOP), grant N62909-18-1-2033. Funding: 225k\$. Position: Task Leader, [Refs.: N. protocollo: CNR-INM 1324 del 02/07/2018]
- 2018 – 2019 **EXTREME–High-Fidelity CFD/CSD of Delft Catamaran Wet Deck Slamming and CFD of 5415M Large Amplitude Motions in Extreme Waves**, Korea Institute of Science and Technology, The University of Iowa sub-award. Funding: 25k\$. Position: Co-Principal Investigator, [Refs.: N. protocollo: CNR-INM 0001776 del 25/07/2019]
- 2017 – 2019 **FSI–Fluid-structure interaction studies for semi-planing hulls**, US Department of the Navy, Office of Naval Research (ONR), University of Iowa sub-award. Funding: 50k\$. Position: Task Leader, [Refs.: Provvedimento INM_110_2019 del 18/03/2019]
- 2015 – 2017 **RDO II–Stochastic SBD for Reduction of Added-Powering/Motions/Slamming for Surface Ships in Real Seas**, US Department of the Navy Office of Naval Research (ONR) Global, Naval International Cooperative Opportunities in Science and Technology Program (NICOP), grant N62909-15-1-2016. Funding: 140k\$. Position: Task Leader, [Refs.: N. protocollo CNR-INSEAN 1079 del 15/04/2016]
- National**
- 2023 – 2026 **BIODRONES–Biomimetic and Innovative Optimized hydrodynamic concepts of high-efficiency underwater gliding DRONES for ocean research**, Italian Ministry of University and Research, PRIN 2022. Funding: 250k€. Position: WP Leader.

- 2023 – 2026 **BRIDGESTONE–Fluid Dynamics**. Bridgestone Europe NV/SA – Italian Branch, Comessa 08CT22, Support to computational fluid dynamics analysis, Funding: 230k€. Position: Technical Team Member, [Refs.: Provvedimento n. INM_363_2023 del 20/06/2023]
- 2022 – 2025 **CNMS–National Sustainable Mobility Center**, Italian Ministry of University and Research, National Program Resistance and Resilience (PNRR). Spoke 3-Waterways, WP1-Energy Efficiency, Task 1.1-Design Optimization Methods. Funding: 3.9M€. Position: Task and Roadmap Leader, [Refs.: Provvedimento INM_383_2023 del 06/07/2023]
- 2022 – 2025 **RAISE–Robotics and AI for socio-economic empowerment**, Italian Ministry of University and Research, National Program Resistance and Resilience (PNRR). Spoke 3 - Sustainable environmental caring and protection technologies, WP1 - Ecorobotics & AI Innovative Systems, WP3 - Smart Energy Storage and Distribution. Position: Technical Team Member, [Refs.: Provvedimento INM_764_2022 del 07/12/2023]
- 2021 – 2024 **UIISH–Urban Intelligence Science Hub for City Network**, National Operative Program Metropolitan City - PON METRO, Agency for Territorial Cohesion. Funding: 3.9M€. Position: Technical Team Member, [Refs.: Lettera di incarico del 14/09/2021]
- 2021 – 2023 **NAUSICA–NAvi efficienti tramite l’Utilizzo di Soluzioni tecnologiche Innovative e low Carbon**, National Operative Program PON, Italian Ministry of University and Research. Funding: 2M€. Position: Technical Team Member, [Refs.: Lettera di incarico del 30/03/2022]
- 2020 – 2024 **CTEMT–Casa delle Tecnologie Emergenti di Matera**, Italian Ministry of Economic Development. Funding: 6.5M€. Position: Technical Team Member, [Refs.: Lettera di incarico del 01/09/2020]
- 2019 – 2022 **DDX–Numerical and experimental studies for the definition of the new naval destroyer units**, Italian Navy. Comessa 01CT19, Subtask 1 “Design optimization,” Funding: 20k€. Position: Principal Investigator, [Refs.: Provvedimento INM_066_2019 del 08/02/2019]
- 2019 – 2021 **RdS–Ricerca di Sistema**, Italian Ministry of Economic Development. Funding: 112k€. Position: Technical Team Member, [Refs.: Lettera di incarico del 16/12/2019]
- 2019 – 2021 **ARES–Autonomous robotics for the extended ship**, Italian Ministry of University and Research, National Operative Program (PON). Funding: 1.4M€. Position: Technical Team Member, [Refs.: Lettera di incarico del 05/12/2019]
- 2016 – 2019 **IBRHYDRO–Hybrid wing hydrofoil**, Italian Ministry of Transport and Infrastructures. OR.4 “Hydrodynamics optimization,” Funding: 398k€. Position: Co-Principal Investigator, [Refs.: Attestazione INM_058_2019 del 30/09/2019]
- 2016 – 2018 **VINMAC–Sistema Innovativo Integrato di Ventilazione Industriale in Materiali Compositi**, Regione Lombardia, Programma Operativo Regionale 2014-2020. Obiettivo “Investimenti in Favore della Crescita e dell’Occupazione”, Funding: 202k€. Position: Technical Team Member, [Refs.: n. protocollo CNR-INM 1651 del 08/09/2020]
- 2013 – 2016 **RITMARE–Flagship Project**, Italian Ministry of Education, University and Research, National Research Program 2011-2013. Subproject 1 “Maritime Technologies,” WP2 “Environmental sustainability,” Funding: 1.8M€. Position: Technical Team Member, [Refs.: n. protocollo CNR-INSEAN 1082 data 15/04/2016]
- [HPC Resources](#)
- 2025 – 2026 **SBOBUG–Scalable Bayesian Optimization of Bioinspired Underwater Gliders: Configuration Benchmarking and High-Fidelity Validation**, CINECA-Italian SuperComputing Resource Allocation (ISCR-A-B) grant HP10BZYAD3. Funding: 350kCPUh. Position: Principal Investigator, [Refs.: mail notification del 26/11/2025]

- 2025 – 2026 **LESBIO–Large-Eddy Simulation Benchmarking for the Investigation of Optimized Bioinspired Underwater Gliders**, CINECA-Italian SuperComputing Resource Allocation (ISCRA-C) grant HP10CJM3DH. Funding: 95kCPUh. Position: Principal Investigator, [Refs.: mail notification del 05/09/2025]
- 2023 – 2024 **PI-PME–Physics-informed Parametric Model Embedding**, CINECA-Italian SuperComputing Resource Allocation (ISCRA-C) grant HP10C3YKGR. Funding: 300kCPUh. Position: Principal Investigator, [Refs.: mail notification del 17/02/2023]
- 2020 – 2021 **ESODADR–Enabling high-fidelity Shape Optimization by Design-space Augmented Dimensionality Reduction**, CINECA-Italian SuperComputing Resource Allocation (ISCRA-C) grant HP10CRM564. Funding: 250kCPUh. Position: Principal Investigator, [Refs.: mail notification del 09/06/2020]

International Research Groups

Co-chair

- 2024 – 2027 **NATO-AVT-404 Research Task Group**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Enhanced Design Processes of Military Vehicles through Machine Learning Methods”, [Refs.: email notification del 25/01/2024]
- 2023 **NATO-AVT-MSG-ET-232 Exploratory Team**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Machine Learning and Artificial Intelligence for Military Vehicles Design”, [Refs.: Attestazione INM_081_2023 del 05/07/2023]

Technical team member

- 2020 – 2024 **NATO-AVT-351 Research Task Group**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Enhanced Computational Performance and Stability & Control Prediction for NATO Military Vehicles”, [Refs.: Attestazione INM_081_2023 del 05/07/2023]
- 2021 – 2023 **NATO-AVT-348 Research Task Group**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Assessment of Experiments and Prediction Methods for Naval Ships Manoeuvring in Waves”, [Refs.: Attestazione INM_006_2020 del 04/09/2020]
- 2020 – 2022 **NATO-AVT-331 Research Task Group**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Goal-Driven, multi-fidelity and multidisciplinary analysis for military vehicle system level design”, [Refs.: Attestazione INM_006_2020 del 04/09/2020]

Contributing author

- 2017 – 2019 **NATO-AVT-280 Research Task Group**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Evaluation of Prediction Methods for Ship Performance in Heavy Weather”, [Refs.: Attestazione INM_006_2020 del 04/09/2020]
- 2016 – 2018 **NATO-AVT-252 Research Task Group**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel (former ET-142), “Stochastic Design Optimization for Naval and Aero Military Vehicles”, [Refs.: Attestazione INM_006_2020 del 04/09/2020]
- 2013 – 2015 **NATO-AVT-204 Research Task Group**, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Assess the Ability to Optimize Hull Forms of Sea Vehicles for Best Performance in a Sea Environment”, [Refs.: N. protocollo CNR-INSEAN 1078/2016 del 15/04/2016]

Professional Services

Organization of scientific meetings

- 2026 **Invited-session Organizer and Co-chair**, G-NAOE 2026, Global Conference on Naval Architecture and Marine Engineering on “*Artificial Intelligence and Machine Learning Application to Ship and Vehicle Design*”, Houston, TX, USA, October 20-24
- 2026 **Program Committee Member**, “18th International Conference on Evolutionary Computation Theory and Applications” - ECTA 2026 ([Web page](#)), Angers, France, October 28-30
- 2026 **Invited-session Organizer and Co-chair**, WCCM-ECCOMAS 2026, 17th World Congress on Computational Mechanics 10th European Congress on Computational Methods in Applied Science and Engineering on “*Machine Learning for the Design of Sustainable and High-Performance Vehicles*” ([Web page](#)), Munich, Germany, July 19-24
- 2025 **Program Committee Member**, “17th International Conference on Evolutionary Computation Theory and Applications” - ECTA 2025 ([Web page](#)), Marbella, Spain, October 22-24
- 2025 **Invited-session Organizer and Co-chair**, MARINE 2025, XI International Congress on Computational Methods in Marine Engineering; Invited Session on “*Simulation-based design optimization in marine engineering*” ([Web page](#)), Edinburgh, Scotland, June 23-27
- 2025 **Program Committee Member**, NATO-AVT-411 Research Specialist’ Meeting, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Machine Learning and Artificial Intelligence for Military Vehicle Design” ([Web page](#)), Washington DC, USA, May 19-21
- 2023 **Chairman and Program Committee Member**, BUILD-IT 2023, BUILDing a Digital Twin: requirements, methods, and applications ([Web page](#)), Rome, Italy, October 19-20
- 2023 **Invited-session Organizer and Co-chair**, MARINE 2023, X International Congress on Computational Methods in Marine Engineering; Invited Session on “*Simulation-driven design optimization in marine engineering*” ([Web page](#)), Madrid, Spain, June 27-29
- 2023 **Session Co-chair**, AIAA SciTech Forum; Non-deterministic approaches Session 7 on “*Multifidelity Surrogate Modelling*”, National Harbor, MD, USA, January 24, [Refs.: mail from Senior Manager del 04/01/2023]
- 2023 **Program Committee Member**, 9th International Conference on Machine Learning, Optimization and Data Science ([Web page](#)), Grasmere, UK, September 22-26
- 2022 **Program Committee Member**, NATO-AVT-354 Research Workshop, NATO Science and Technology Organization (STO), Applied Vehicle Technology (AVT) panel, “Multi-fidelity methods for military vehicle design”, Varna, Bulgaria, September 26-28, [Refs.: Attestazione INM_006_2020 del 04/09/2020]
- 2022 **Program Committee Member**, 8th International Conference on Machine Learning, Optimization and Data Science ([Web page](#)), Certosa di Pontignano, Siena, Italy, September 18-22
- 2021 **Program Committee Member**, 7th International Conference on Machine Learning, Optimization and Data Science ([Web page](#)), Grasmere, UK, October 5-8
- 2020 **Program Committee Member**, 6th International Conference on Machine Learning, Optimization and Data Science ([Web page](#)), Certosa di Potignano, Italy, July 19-23
- 2019 **Program Committee Member**, 5th International Conference on Machine Learning, Optimization and Data Science ([Web page](#)), Certosa di Potignano, Italy, September 10-13
- 2018 **Program Committee Member**, 4th International Conference on Machine Learning, Optimization and Data Science ([Web page](#)), Volterra, Italy, September 13-16

Editorial & Reviewing activities

- since 2025 **Editorial Board Member**, *Applied Science* (MDPI),
[Refs.: <https://www.mdpi.com/journal/applsci/editors>]

- since 2022 **Editorial Board Member**, *Scientific Reports* (Nature),
[Refs.: <https://www.nature.com/srep/about/editors#mechanical-engineering>]
- since 2022 **Topical Advisory Panel Member**, *Algorithms* (MDPI),
[Refs.: https://www.mdpi.com/journal/algorithms/topical_advisory_panel]
- since 2020 **Topical Advisory Panel Member**, *Mathematics* (MDPI),
[Refs.: https://www.mdpi.com/journal/mathematics/topical_advisory_panel]
- 2021 – 2022 **Guest Editor**, *Algorithms* (MDPI), Special issue on “Simulation-Based Optimization: Methods and Applications in Engineering Design” ([Web page](#))
- since 2022 **Technical Expert for National Central Administration**, *Ministry of Enterprises and Made in Italy* “Fondo per la crescita sostenibile”,
- Project proposal 241, D.M. del 31/12/2021 – “Accordi per l’Innovazione”, since 2023, [Refs.: Conferimento incarico del 03/03/2023]
 - Project proposal 3, D.M. del 01/12/2021 – “Progetti di ricerca, sviluppo e innovazione per la transizione ecologica e circolare negli ambiti del Green New Deal italiano”, since 2024, [Refs.: Conferimento incarico del 16/04/2024]

2020 **External Reviewer**, *Roma Tre University*, Doctoral School of Mechanical and Industrial Engineering, XXXIII cycle, PhD candidate Monica Rossetti, Dissertation title: Simulation-based aeroacoustic metamodells for unconventional aircraft configurations, [Refs.: Università degli Studi Roma Tre Prot. n. 0002345 del 03/08/2020]

- since 2014 **Reviewer**, *Algorithms* (MDPI) • *Applied Ocean Research* (Elsevier) • *Applied Science* (MDPI) • *Applied Soft Computing* (Elsevier) • *Array* (Elsevier) • *Computers, Environment and Urban Systems* (Elsevier) • *Data* (MDPI) • *Designs* (MDPI) • *Energies* (MDPI) • *Electronics* (MDPI) • *Engineering Applications of Computational Fluid Mechanics* (Taylor & Francis) • *Engineering Optimization* (Taylor & Francis) • *Entropy* (MDPI) • *Expert Systems with Applications* (Elsevier) • *IEEE Access* (IEEE) • *Information Processing & Management* (Elsevier) • *International Journal of Intelligent Systems* (Wiley) • *International Journal of Naval Architecture and Ocean Engineering* (Elsevier) • *Journal of Marine Science and Engineering* (MDPI) • *Journal of Marine Science and Technology* (Springer) • *Journal of Ship Research* (SNAME) • *Materials* (MDPI) • *Mathematics* (MDPI) • *Mathematics and Computers in Simulation* (Elsevier) • *Modelling and Simulation in Engineering* (Hindawi) • *Ocean Engineering* (Elsevier) • *Operations Research Perspectives* (Elsevier) • *Optimization and Engineering* (Springer) • *Processes* (MDPI) • *Remote Sensing* (MDPI) • *Science Progress* (SAGE Publishing) • *Sustainability* (MDPI) • *Symmetry* (MDPI), [Refs.: <https://www.webofscience.com/wos/author/record/1698301>]

Teaching activities

- 2024 – 2025 **Lecturer**—*Design-space dimensionality reduction for shape optimization; Benchmark problems for multi-fidelity methods in ship hydrodynamic optimization and uncertainty quantification*, Research Lecture Series on “Multi-Fidelity Methods for Multidisciplinary Design Optimization”, AVT-385 (Applied Vehicle Technology), NATO Science & Technology Organization, [Refs.: Attestazione INM_081_2023 del 05/07/2023]
- 2021 **Adjunct Professor**—*Simulation-based design for efficient hull forms*, Advanced Training Course for “Nautical and naval R&D experts”, Project TRIM (Tecnologia e Ricerca Industriale per la Mobilità Marina within Italian Transport Cluster 2020), [Refs.: Assegnazione incarico di docenza tramite protocollo CNR numero INM_546_2020 del 23/12/2020]
- 2017 **Lecturer**—*Reliability-based robust hull-form optimization of a naval destroyer in waves*, Master (II level) in Advanced Skills in Safety Environment and Security at Sea (ASSESS), Università degli studi di Trieste, Italy, [Refs.: Atto formale di conferimento a mezzo Protocollo CNR-INM 1512 del 25/07/2018]

2016 **Lecturer**–*Overview on Simulation-based Design Optimization Methods, Dimensionality reduction via KLE - Single-objective optimization algorithms and applications*, Doctoral School in Aeronautical and Aerospace Engineering, Università Sapienza di Roma, Italy, [Refs.: Lettera di invito Prof. Mauro Valorani (a mezzo mail) del 03/05/2017]

since 2015 **Lecturer and Examination Committee Member**–*Simulation-based design methodologies*, Aircraft Design and Structures, Rome Tre University, Italy, [Refs.: Lettera di invito ricorrente del Prof. Umberto Iemma (a mezzo email)]

Institutional responsibilities

2021 – 2024 **Technical Committee Member**–*“Manoeuvring” Committee*, 30th ITTC (International Towing Tanks Conference association), [Refs.: Attestazione INM_082_2023 del 05/07/2023]

Academic Advising

PhD students

2025 *Vulpio I.* – Mechanical and Industrial Engineering, “Reinforcement learning in simulation-driven design,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INM (expected)

2023 *Ficini S.* – Mechanical and Industrial Engineering, “Multi-fidelity active learning models for simulation-driven design in presence of computational-output noise,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INM

2021 *D’Agostino D.* – Operations Research, “Nonlinear Machine Learning Methods for Design-Space Dimensionality Reduction in Shape Optimization,” co-advisor with Prof. Stefano Lucidi, Sapienza University of Rome and Dr. Matteo Diez, CNR-INM

MSc students

2024 *Badolato M.* – Aeronautical Engineering, “Development and optimization of innovative bio-inspired autonomous underwater gliders” co-advisor with Prof. Umberto Iemma, Roma Tre University

2023 *Squillace D.* – Aeronautical Engineering, “Design-space dimensionality reduction in shape optimization through physics-informed parametric model embedding” co-advisor with Prof. Umberto Iemma, Roma Tre University, [Refs.: Tesi disponibile negli archivi Roma Tre]

2021 *Vulpio I.* – Aeronautical Engineering, “Reinforcement Learning Applied to Derivative-free Optimization: Development of an Evolutionary Variant of the Q-Learning Algorithm” co-advisor with Prof. Umberto Iemma, Roma Tre University, [Refs.: Tesi disponibile negli archivi Roma Tre]

2021 *Dragone P.* – Aeronautical Engineering, “Study of a Forecasting Methodology for the Evolution Prediction of Dynamical Systems via Dynamic Mode Decomposition” co-advisor with Prof. Umberto Iemma, Roma Tre University, [Refs.: Tesi disponibile negli archivi Roma Tre]

2021 *Schneider A.* – Aeronautical Engineering, “Nonlinear design-space dimensionality reduction methods for simulation-based optimization,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INM, [Refs.: Tesi disponibile negli archivi Roma Tre]

2021 *Milano C.* – Aeronautical Engineering, “Development of surrogate models based on artificial neural networks for aeroacoustic applications,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INM, [Refs.: Tesi disponibile negli archivi Roma Tre]

2021 *D’Orazio E.* – Aeronautical Engineering, “Development of non-hierarchical multi-fidelity meta-models based on Gaussian process,” co-advisor with Prof. Umberto Iemma, Roma Tre University, [Refs.: Tesi disponibile negli archivi Roma Tre]

- 2019 *Antognoli L.* – Aeronautical Engineering, “Development of an Adaptive Multi-fidelity Metamodel for Hydrofoil Shape Optimization,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INM, [Refs.: Tesi disponibile negli archivi Roma Tre]
- 2019 *Montagliani L.* – Aeronautical Engineering, “Comparative study of Radial Basis Function Kernels and Use of Cross-validation in Stochastic Simulation-Based Design and Uncertainty Quantification,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INM, [Refs.: Tesi disponibile negli archivi Roma Tre]
- 2017 *D’Agostino D.* – Management Engineering, “Nonlinear Methods for Design-Space Dimensionality Reduction in Shape Optimization,” co-advisor with Prof. Stefano Lucidi, Sapienza University of Rome and Dr. Matteo Diez, CNR-INSEAN, [Refs.: Tesi disponibile negli archivi Sapienza]

BSc students

- 2017 *D’Ascenzo N.* – Mechanical Engineering, “Fluid dynamics analysis of a competition kayak based on potential flow theory,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INSEAN, [Refs.: Tesi disponibile negli archivi Roma Tre]
- 2014 *Lombardi L.* – Mechanical Engineering, “Hull-form modification methodologies in simulation-based ship design optimization,” co-advisor with Prof. Umberto Iemma, Roma Tre University and Dr. Matteo Diez, CNR-INSEAN, [Refs.: Tesi disponibile negli archivi Roma Tre]

Publications and Presentations

Journal Articles

- [1] Palma G., Santic I., Serani, A. Minno L., Diez M. “System Identification of a Moored ASV with Recessed Moon Pool via Deterministic and Bayesian Hankel-DMDc,” *Journal of Marine Science and Engineering*, 2025, 13(12), 2267 doi.org/10.3390/jmse13122267.
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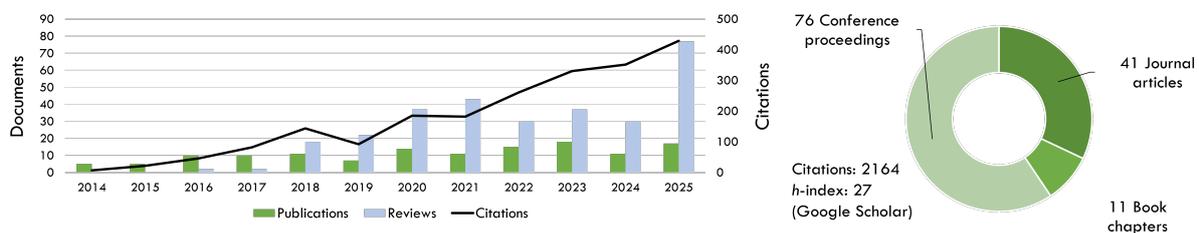


Figure: Overview of publications, reviews (WoS), citations, and metrics (Google Scholar) – January 15, 2026.

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Rome, January 15, 2026