

ALESSANDRO NERI

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Engineer and researcher specialising in sustainable logistics, supply chain design, and energy systems. Experienced in developing quantitative decision-support models for industry and public institutions, integrating economic, environmental, and energy dimensions. Proven background in applied research, consulting, and university teaching, supporting sustainability-driven transformation projects.

EXPERIENCE

Sustainability Consultant

Nov 2025 – Present

Centro Agricoltura Ambiente “Giorgio Nicoli” S.r.l.

Crevalcore, Italy

- Provide Life Cycle Assessment (LCA) external consultancy to support the planning and optimisation of municipal solid waste collection systems.

Adjunct Professor

Sep 2024 – Present

University of Modena and Reggio Emilia

Reggio Emilia, Italy

Designed and delivered graduate and undergraduate courses combining theoretical foundations, quantitative models, and real-world case studies.

- Taught *Sustainable Building and Industrial Plant Design* (BSc in Management Engineering, AY2025-26): sustainable reporting, QGIS, green supply chain design, multi-criteria analysis.
- Taught *Energy Services and Design for Sustainability* (MSc in Energy Engineering, AY2025-26): energy communities, industrial symbiosis, optimisation-based decision support.
- Taught *Logistics and Production Process Management* (BSc in Management Engineering, AY2024-25): supply chain design, inventory management, and production–distribution coordination.

Academic Researcher (PhD Candidate)

Nov 2022 – Nov 2025

University of Modena and Reggio Emilia

Reggio Emilia, Italy

- Developed optimization tools for investments in sustainable energy infrastructure, including PV systems, energy storage, waste-to-energy and hydrogen systems, supporting network planning, facility siting and capacity sizing for industrial symbiosis and renewable energy communities.
- Conducted territorial and industrial feasibility analyses for large-scale energy projects, including GIS-based agrivoltaic suitability assessments over 300 km², identifying approximately 30% of the area as highly suitable.
- Designed and implemented digital solutions for supply-chain sustainability based on Distributed Ledger Technology, including Ethereum smart contracts for automated Scope 3 emissions accounting in multimodal multi-echelon supply chains, and comparative evaluation of 8 DLT platforms for Digital Battery Passport deployment.

Visiting Researcher

Apr 2025 – Jul 2025

University of Twente

Enschede, Netherlands

- Developed an EU-27 (2020–2050) System Dynamics simulation model to forecast end-of-life electric vehicle battery flows and assess alternative circular economy scenarios.

Corporate Trainer

Apr 2024

Makeitalia Srl

Modena, Italy

- Delivered professional training programmes on Carbon Footprint calculation, GHG Protocol, and ISO sustainability standards for corporate audiences.

Project Developer

Nov 2022 – Jun 2023

TACC – Training for Automotive Company Creation

Modena, Italy

- Co-developed *CARin*, a carpooling digital platform; led market analysis, lean startup development, and pitching activities.
- **Awards:** Team CARin Winner AVL Pitching Competition (Graz, Austria, 2023)

EDUCATION

Ph.D. in Industrial Engineering, Alma Mater Studiorum – University of Bologna

Nov 2022 – Mar 2025

- **Research focus:** Quantitative modelling and decision-support analytics for sustainable operations, with applications to supply chains, industrial systems, and energy networks.
- **Awards:** ISA Doctoral Prize (II ed., 2023/2024) – €2,000; XXVIII AIDI Conference Best Paper Award; Department of Industrial Engineering Best Paper Award (2023) – €2,000.

M.Sc. in Management Engineering, University of Modena and Reggio Emilia Sep 2019 – Apr 2022

- **Focus:** Logistics, production systems, operations management, and quantitative decision-making.
- **Awards:** University Management Competition 2018–2019 (Rome).

SKILLS

Quantitative Modelling	Operation Research (LP, MILP, Multi-Objective Optimization), Multi-Criteria Decision Making, System Dynamics modelling, Material Flow Analysis (MFA), Input–Output Analysis, Life Cycle Assessment (LCA)
Programming Tools	Python, MATLAB, Mosel, AnyLogic, Xpress Workbench, QGIS, STAN, Excel
Communication Tools	PowerPoint, Word, Google Workspace, Microsoft Teams, L ^A T _E X
Languages	Italian (Native), English (C1)

SELECTED FIRST-AUTHOR JOURNAL PUBLICATIONS

International Journal on Interactive Design and Manufacturing, 2025, Vol. 19-9, pp. 6301-6318.

Fostering lithium-ion battery remanufacturing through Industry 5.0

Smart Cities, 2024, Vol. 7-2, pp. 735-757.

Enhancing Waste-to-Energy and Hydrogen Production through Urban–Industrial Symbiosis: A Multi-Objective Optimisation Model Incorporating a Bayesian Best-Worst Method

Journal of Manufacturing Systems, 2024, Vol. 77, pp. 859–874.

Sustainable Management of Electric Vehicle Battery Remanufacturing: A Systematic Literature Review and Future Directions.

Journal of Cleaner Production, 2023, Vol. 414, 137529.

Inter-firm exchanges, distributed renewable energy generation, and battery energy storage system integration via microgrids for energy symbiosis.

SELECTED INTERNATIONAL CONFERENCE PRESENTATIONS

XXX Summer School Francesco Turco

Sep 2025

Exploring Sustainable Recycling End-of-Life for Electric Vehicle Batteries in Italy.

XXIX Summer School Francesco Turco

May 2025

Renewable Energy Communities in Rural Areas: A Hybrid GIS-MCDM Approach for Agrivoltaic Systems Site Selection

Blockchain-Based Carbon Emissions Tracking in Supply Chains: A Smart Contract Solution for Scope 3 Reporting

III Conference on Performance and Management

May 2025

Mapping firm capabilities in implementing Digital Product Passports: a resource-based view perspective

XVIII IFAC Symposium on Information Control Problems in Manufacturing

Aug 2024

Distributed Ledger Technology Selection for Digital Battery Passport: A BWM–TOPSIS Approach.