

Francesco Stranieri

PhD Student · Italian National PhD Program in Artificial Intelligence

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"An expert is a person who has made all the mistakes that can be made in a very narrow field." – Niels Bohr

Experience

University of Milano-Bicocca, Tutor | Milan, Italy

September 2019 - November 2024

- Tutor for the course '60 CFU Teacher Training' (A41 – 56 hours) in a.y. 2023/24.
- Tutor for the program 'STEM Skill Development and Career Guidance' (8 hours) for high school students in a.y. 2023/24.
- Tutor for the course 'Operations Research and Resource Planning' (MAT/09 – 40 hours) in a.y. 2021/22 and a.y. 2022/23.
- Tutor for the courses 'Design and Analysis of Algorithms' (INF/01 – 60 hours), 'Operating Systems and Networks' (INF/01 – 60 hours), and 'Probability and Statistics for Computer Science' (MAT/06 – 30 hours) in a.y. 2019/20.

Bristol Myers Squibb, External Researcher Internship | Zurich, Switzerland

April 2023 - March 2024

- Developed and implemented a digital twin for supply chain risk evaluation using deep reinforcement learning.
- Demonstrated improvements in inventory management for perishable pharmaceuticals over human-driven policies.

IEEE-Eta Kappa Nu, Artificial Intelligence Team Member | Turin, Italy

March 2022 - December 2023

- Led and coordinated a team of four students to build a dataset and develop an image classification model.
- The model aims to categorize different types of waste, supporting automation in waste collection at the Polytechnic of Turin.

RipetHub APS, Founder and President | Monza, Italy

March 2020 - September 2023

- Ideated and developed a platform to support elementary, middle, and high school students, achieving a 97% satisfaction rate based on over 500 hours of lessons.
- Coordinated over 20 tutors and collaborated with various institutional, corporate, and volunteer organizations.
- Ideated and raised €10,000 to organize the art exhibition "The Rights from Future Generations – A Perspective on (A)rt and (I)nnovation," a world premiere comparing works created by humans with those generated by artificial intelligence.

ITS Angelo Rizzoli, Professor | Milan, Italy

September 2020 - July 2022

- Led and taught the 'Programming Language for Machine Learning' module, focusing on the R programming language, as part of the 'ITS Machine Learning Specialist' course in a.y. 2020/21 (24 hours) and a.y. 2021/22 (32 hours).

AnciLab, Extracurricular Internship | Milan, Italy

January 2021 - May 2021

- Selected for an intensive 258-hour program for young entrepreneurs, focused on developing business skills through training sessions, local business interactions, and teamwork and communication tools.

Invited Speaker: Operations Research and Resource Planning (UniMiB BSc course – 2024) | 'An Introduction to Reinforcement Learning and an Application to the Inventory Management Problem' (Technoprobe SpA – 2023) | 'ReGAI nS: Ridurre il Divario tra AI e Società' (Milano Digital Week – 2023) | 'The Rights from Future Generations: An Initiative about Generative AI' (MTSR – 2023) | Operational Research: Theory and Applications (PoliTo MSc course – 2022)

Co-Supervisor: 'Design and Comparison of Potential Functions for Reward Shaping in Deep Reinforcement Learning' (UniMiB MSc student in Data Science – 2024 – 110L) | 'Application and Development of Reward Shaping Techniques to Deep Reinforcement Learning for Perishable Inventory Management' (UniMiB MSc student in Data Science – 2024 – 110L) | 'Inventory Management: Can Action Masking Help?' (UniMiB BSc student in Computer Science – 2023 – 110L)

Reviewer: Operational Research: An International Journal (ORIJ – 2024) | International Conference on System Theory, Control and Computing (ICSTCC – 2024)

Memberships: International Society for Inventory Research (ISIR) | Institute of Electrical and Electronics Engineers (IEEE) | Association for Artificial Intelligence (AlxIA) | Italian Association of Operations Research (AIRO) | Italian Association of PhD Candidates and PhDs (ADI) | ESSCA Data Lab | Models and Algorithms for Data and Text Mining (MAD Lab)

Education

3rd Year PhD in Artificial Intelligence (Industry 4.0), Polytechnic of Turin | Turin, Italy

2021 - Present

Awards: \$6,000 Award @ Dr. Gabriele Corbelli Scholarship (Rotary International – 2023-2024 Edition) | 2nd Prize @ Best Student Research 'Video & Poster Competition' in the 'Green Technologies and Applications' category (IEEE EUROCON 2023) | \$150 Award @ Poster Competition (Mediterranean Machine Learning (M2L) Summer School – 2022) | University Scholarship (University of Milano-Bicocca – 2016, 2017, 2018, 2019, 2020)

International Conferences: HC@AlxIA 2024 (Program Committee Member) | ISIR 2024 (Special Session Organizer & Oral Paper Presentation) | A&T 2024 (Poster Presentation) | AlxIA 2023 (Oral Paper Presentation) | ECML PKDD 2023 (Oral Paper Presentation) | IEEE EUROCON 2023 (Poster Presentation) | POMS 2023 (Attendee) | AYW 2023 (Attendee) | EWRL 2022 (Poster Presentation) | PGBH 2021 (Attendee) | AlxIA 2021 (Attendee) | AlxIA 2020 (Attendee) | MDAI 2019 (Local Organizing Committee)

International Summer Schools: Winter School 2024 on Innovation and Valorization (Université Grenoble Alpes) | ISIR Summer School 2023 (Cardiff University) | M2L Summer School 2022 (University of Milano-Bicocca)

Courses: Advanced Deep Learning Models and Methods (PoliMi) | Reinforcement Learning (PoliMi) | An Introduction to Optimization over Time and its Application to Online Machine Learning and Reinforcement Learning (UniGe) | Integer Programming and Combinatorial Optimization (UniPv) | Modeling and Problem Solving with Stochastic Programming (PoliTo) | Industry 4.0 and the Industrial Internet of Things: Challenges and Enabling Technologies (UniBo)

Erasmus+ Visiting PhD Student, ESSCA School of Management | Angers, France

March - July 2024

110/110L MSc Degree in Computer Science (LM-18), University of Milano-Bicocca | Milan, Italy

2019 - 2021

110/110L BSc Degree in Computer Science (L-31), University of Milano-Bicocca | Milan, Italy

2016 - 2019

Competencies

Projects: A list of selected projects is available on GitHub.

Programming: Python, PyTorch, Scikit-Learn, Ray, Stable Baselines3, OpenAI Gym, Optuna, R, MATLAB, Java, C/C++, SQL, Git, LaTeX

Certifications: 24 CFU for Teaching (MIUR – 2022) | iBicocca Silver (University of Milano-Bicocca – 2020) | Probabilistic Graphical Models Specialization (Stanford University – 2020) | Introduction to Data Mining Pathway (University of Milano-Bicocca – 2019) | Database, Analytics & Management (Amazon Web Services – 2019) | Elements of AI (University of Helsinki – 2018) | Fundamentals of Digital Marketing (Google – 2018) | Samsung Innovation Camp (Samsung – 2018) | Cisco CCNA Routing and Switching (Cisco – 2016)

Soft Skills: Adaptability, Analytical Thinking, Collaboration, Communication, Continuous Learning, Knowledge Dissemination, Mentorship, Problem Solving, Project Management

Languages

Italian Native Proficiency

English Professional Working Proficiency

Publications

- [1] Archetti, A., **Stranieri, F.**, Matteucci, M., “Bridging the gap: Improve neural survival models with interpolation techniques,” *Progress in Artificial Intelligence*, Sep. 2024, ISSN: 2192-6360. DOI: 10.1007/s13748-024-00343-y. URL: <http://dx.doi.org/10.1007/s13748-024-00343-y>.
- [2] **Stranieri, F.**, Fadda, E., Stella, F., “Combining deep reinforcement learning and multi-stage stochastic programming to address the supply chain inventory management problem,” *International Journal of Production Economics*, vol. 268, p. 109 099, Feb. 2024, ISSN: 0925-5273. DOI: 10.1016/j.ijpe.2023.109099. URL: <http://dx.doi.org/10.1016/j.ijpe.2023.109099>.
- [3] **Stranieri, F.**, Stella, F., Kouki, C., “Performance of deep reinforcement learning algorithms in two-echelon inventory control systems,” *International Journal of Production Research*, pp. 1–16, Mar. 2024, ISSN: 1366-588X. DOI: 10.1080/00207543.2024.2311180. URL: <http://dx.doi.org/10.1080/00207543.2024.2311180>.
- [4] Archetti, A., **Stranieri, F.**, Matteucci, M., “Deep survival analysis for healthcare: An empirical study on post-processing techniques,” *Proceedings of the 2nd AIXIA Workshop on Artificial Intelligence For Healthcare (HCAIXIA 2023) co-located with the 22nd International Conference of the Italian Association for Artificial Intelligence (AIXIA 2023)*, vol. 3578, no. 9, p. 99, Dec. 2023, ISSN: 1613-0073. URL: <https://ceur-ws.org/Vol-3578/paper9.pdf>.
- [5] **Stranieri, F.**, Archetti, A., Robbiano, E., Kouki, C., Stella, F., “Drug inventory control: Human decisions versus deep reinforcement learning,” *Proceedings of the 3rd Italian Workshop on Artificial Intelligence and Applications for Business and Industries (AIABI 2023) co-located with 22nd International Conference of the Italian Association for Artificial Intelligence (AI*IA 2023)*, vol. 3650, no. 3, p. 99, Dec. 2023, ISSN: 1613-0073. URL: <https://ceur-ws.org/Vol-3650/paper3.pdf>.
- [6] **Stranieri, F.**, Stella, F., *Comparing deep reinforcement learning algorithms in two-echelon supply chains*, 2022. DOI: 10.48550/ARXIV.2204.09603. URL: <https://arxiv.org/abs/2204.09603>.
- [7] Ruggieri, A., **Stranieri, F.**, Stella, F., Scutari, M., “Hard and soft em in bayesian network learning from incomplete data,” *Algorithms*, vol. 13, no. 12, p. 329, Dec. 2020, ISSN: 1999-4893. DOI: 10.3390/a13120329. URL: <http://dx.doi.org/10.3390/a13120329>.