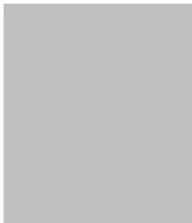


INFORMAZIONI PERSONALI

MARTA MONACI



ESPERIENZA PROFESSIONALE

[Inserire separatamente le esperienze professionali svolte iniziando dalla più recente.]

Feb 2024 – Present Postdoctoral Researcher
Department of Computer, Control, and Management Engineering Antonio Ruberti (DIAG)
Sapienza University of Rome, Italy

June 1986-30/11/1988 Independent Research Assignment
Research on "Margin Optimal Decision Trees for the interpretation of black box
Machine Learning models"
Department of Computer, Control, and Management Engineering Antonio Ruberti (DIAG)
Sapienza University of Rome, Italy

Sep 2022 – Feb 2023

Visiting PhD Researcher
Copenhagen Business School, Denmark
Hosted by Professor Dolores Romero Morales

ISTRUZIONE E FORMAZIONE

[Inserire separatamente i corsi frequentati iniziando da quelli più recenti.]

Nov 2020 – Jan 2024

- PhD Program in Automatic Control, Bioengineering and Operations
- Sapienza University of Rome, Italy
- Curriculum: Operations Research, Advisor: Prof. Laura Palagi
- Thesis: Interpretable Machine Learning: Leveraging SVMs to construct Optimal Decision Trees
- Grade: Laude
- Research interests: Mixed Integer Programming, Interpretable Machine Learning, Optimal Decision Trees,
- Combinatorial Optimization, Reinforcement Learning applied to optimization problems
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- .MSc in Management Engineering
- Sapienza University of Rome, Italy
- Curriculum: Business Intelligence and Analytics
- Thesis: Solving Job Shop Scheduling via Deep Reinforcement Learning

- Advisors: Prof. Laura Palagi, Dr. Giorgio Grani (Research Institute Sintef, Oslo, Norway)
- Grade: 110/110 cum laude
- Main subjects: Operations Research, Combinatorial Optimization, Statistics,
- Optimization methods for Machine Learning, Games and Equilibria

Jan 2020 – Jun 2020

Erasmus+ Program
University of Strasbourg, France
Faculté des sciences économiques et de gestion (FSEG)

Oct 2015 – Oct 2018

BSc in Management Engineering Oct 2015 – Oct 2018
Sapienza University of Rome, Italy
Grade: 110/110

ULTERIORI INFORMAZIONI

Pubblicazioni
Presentazioni
Progetti
Conferenze
Seminari
Riconoscimenti e premi
Appartenenza a gruppi / associazioni
Referenze
Menzioni
Corsi
Certificazioni

▪ **PUBLICATIONS**

- Articles published in journals:
 - 1. Di Teodoro, G., Monaci, M., and Palagi, L. (2024). Unboxing Tree Ensembles for interpretability: a hierarchical visualization tool and a multivariate optimal re-built tree. Forthcoming in EURO Journal on Computational Optimization, 100084, 2024. DOI: 10.1016/j.ejco.2024.100084
 - 2. D'Onofrio, F., Grani, G., Monaci, M., and Palagi, L. (2023). Margin optimal classification trees. Computers & Operations Research, 161:106441. DOI: 10.1016/j.cor.2023.106441
 - 3. Monaci, M., Agasucci, V., and Grani, G. (2024). An actor-critic algorithm with policy gradients to solve the job shop scheduling problem using deep double recurrent agents. European Journal of Operational Research, 312(3):910–926. DOI: 10.1016/j.ejor.2023.07.037
 - 4. D'Onofrio, F., Monaci, M., and Palagi, L. (2023). Optimization-based approaches for learning Optimal Classification Trees. IFORS NEWS, 18:(1), pp. 5-7. URL: <https://www.ifors.org/march-2023-issue/>
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- 5. Coppola, C., Grani, G., Monaci, M., and Palagi, L. (2021). Heuristics for the Traveling Salesperson Problem based on Reinforcement Learning. Department of Computer, Control, and Management Engineering Antonio Ruberti Technical Reports. URL: <http://users.diag.uniroma1.it/biblioteca/it/node/6105>

▪ **CONFERENCES and WORKSHOPS**

- Optimization 2023 24 - 26 Jul 2023
- University of Aveiro, Portugal.
- Delivered a talk titled: A decomposition algorithm leveraging the SVM structure of Margin Optimal Trees
- Chair of the session: “Optimization and Machine Learning”
- NeEDS Workshop On the Latest Advances in Machine Learning to Deal with Complex Data
- Copenhagen Business School, Denmark.
- Delivered a talk titled: Maximum Margin Optimal Decision Trees

- Machine Learning NeEDS Mathematical Optimization series 5 Oct 2022
- Online.
- Held a seminar titled: Maximum Margin Optimal Decision Trees
- 19th Workshop on Advances in Continuous Optimization - EUROPT 2022 29 – 30 Jul 2022
- NOVA School of Science and Technology, Caparica, Portugal.
- Delivered a talk titled: Maximum Margin Optimal Decision Trees
- 6th AIROYoung Workshop - Operation Research and Data Science
- in Public Services 23 – 25 Feb 2022
- Roma Tre University, Italy.
- Delivered a talk titled: Maximum Margin Optimal Decision Trees
- ODS 2021 - International Conference on Optimization and Decision Science
- on "Optimization in Artificial Intelligence and Data Science" 14 – 17 Sept 2021
- Sapienza University of Rome, Italy. Delivered a talk titled:
- An actor-critic algorithm with deep double recurrent agents to solve job shop scheduling
- Chair of the session "Machine Learning-based optimization"
- EURO 2021 Athens - 31st European conference for Operational Research 11 – 14 Jul 2021
- University of West Attica, Athens, Greece. Delivered a talk titled:
- An actor-critic algorithm with deep double recurrent agents to solve job shop scheduling
- th AIROYoung Workshop 2021 on "Optimization and Data Science: 8 – 12 Feb 2021
- Trends and Applications"
- Attended online
- ODS 2020 – International Conference on Optimization and Decision Science on 19 Nov 2021
- "Operations Research, Machine Learning and Analytics"
- Attended online
- **TEACHING ACTIVITIES**
- Teaching assistant Sep 2022 – Feb 2023
- Sapienza University of Rome, Italy
- Official tutor of the "Analisi Matematica I" course held in the Bachelor's Degree in
- Management Engineering
- Teaching assistant Sep 2021 – Feb 2022
- Sapienza University of Rome, Italy
- Official tutor of the "Complementi di Matematica" course held in the Bachelor's Degree in
- Management Engineering
- Co-Advisor of a MSc Thesis Mar 2021 – Oct 2021
- Sapienza University of Rome, Italy
- I had the opportunity to assist in the academic supervision of a MSc thesis titled:
- Heuristics for the Traveling Salesperson Problem based on Reinforcement Learning.
- **AWARDS**
- Funding for Research Initiation Projects 2023
- Sapienza University of Rome, Italy
- Awarded funding to initiate research on the project:
- Making Interpretable Machine Learning possible: leveraging SVMs to construct Margin Optimal Trees
- Funding for Research Initiation Projects 2022
- Sapienza University of Rome, Italy
- Awarded funding to initiate research on the project: Maximum Margin Optimal Classification Trees
- PhD Mobility Scholarship 2022
- Sapienza University of Rome, Italy
- Awarded a PhD mobility scholarship to conduct a research period at Copenhagen Business School
- under the supervision of Prof. Dolores Romero Morales
- Tutoring scholarship 2022
- Sapienza University of Rome, Italy

- Awarded a working scholarship position at the I3S Department of Engineering as tutor assistant
- for the “Analisi Matematica I” course
- Tutoring scholarship 2021
- Sapienza University of Rome, Italy
- Awarded a working scholarship position at the I3S Department of Engineering as tutor assistant
- for the “Complementi di Matematica” course
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- **SKILLS**
- Core Competencies Operations Research, Machine Learning, Data Analysis
- Computer skills Python, R, AMPL, CPLEX, Gurobi, LATEX, Microsoft Office
- Python Libraries Numpy, Pandas, Pytorch, Scikit-Learn, Seaborn, Matplotlib
- Languages English: advanced, Italian: mother tongue

ALLEGATI

Dati personali

Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali".