



# Marta Monaci

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## ● EDUCATION AND TRAINING

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11/2020 – CURRENT

**PHD PROGRAM IN AUTOMATIC CONTROL, BIOENGINEERING AND OPERATIONS RESEARCH**

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Mixed Integer Programming, Interpretable Machine Learning, Optimal Decision Trees, Deep Reinforcement Learning applied to optimization problems.

**Field of study** Operations Research

10/2018 – 10/2020 – Rome, Italy

**MSC IN MANAGEMENT ENGINEERING** – Sapienza University of Rome

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Operations Research, Statistics, Optimization methods for Machine Learning, Derivative-Free and Combinatorial Optimization, Games and Equilibria.

**Address** Rome, Italy | **Field of study** Business Intelligence and Analytics | **Final grade** 110/110 cum laude |

**Thesis** Solving Job Shop Scheduling via Deep Reinforcement Learning

01/2020 – 05/2020 – Strasbourg, France

**ERASMUS+ PROGRAM** – University of Strasbourg

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**Address** Strasbourg, France | **Field of study** Faculté des sciences économiques et de gestion (FSEG)

10/2015 – 10/2018 – Rome, Italy

**BSC IN MANAGEMENT ENGINEERING** – Sapienza University of Rome

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**Address** Rome, Italy | **Final grade** 110/110

## ● PUBLICATIONS

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**Margin Optimal Classification Trees**

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2022

F. D'Onofrio, G. Grani, M. Monaci, L. Palagi  
Under review

**An actor-critic algorithm with deep double recurrent agents to solve the job shop scheduling problem**

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<https://arxiv.org/abs/2110.09076> – 2021

M. Monaci, V. Agasucci, G. Grani  
Preprint, under review

**Heuristics for the Traveling Salesperson Problem based on Reinforcement Learning**

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<https://iris.uniroma1.it/handle/11573/1565049> – 2021

C. Coppola, G. Grani, M. Monaci, L. Palagi  
Technical Report

## ● CONFERENCES AND SEMINARS

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29/07/2022 – 02/08/2022 – NOVA School of Science and Technology, Lisbon, Portugal  
**EUROPT 2022**

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19<sup>th</sup> International Workshop on Advances in Continuous Optimization and Summer School  
Delivered a talk titled: *Maximum Margin Optimal Classification Trees*  
School courses: First Order Optimization Methods, Equilibrium Selection

23/02/2022 – 25/02/2022 – Roma Tre University, Italy  
**AIROYoung 2021**

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6<sup>th</sup> AIROYoung Workshop on "Operation Research and Data Science in Public Services"  
Delivered a talk titled: *Maximum Margin Optimal Decision Trees*

14/09/2021 – 17/09/2021 – Sapienza University of Rome, Italy  
**ODS 2021**

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International Conference on Optimization and Decision Sciences on "Optimization in Artificial Intelligence and Data Science"  
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"

11/07/2021 – 14/07/2021 – University of West Attica, Athens, Greece  
**EURO 2021**

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31st European conference for Operational Research  
Delivered a talk titled: *An actor-critic algorithm with deep double recurrent agents to solve job shop scheduling*

07/07/2021 – 09/07/2021 – Toulouse (online), France  
**EUROPT 2021**

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18<sup>th</sup> International Workshop on Advances in Continuous Optimization

08/02/2021 – 12/02/2021 – University "Federico II" of Naples (online), Italy  
**AIRO 2021**

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AIRO PhD School and 5<sup>th</sup> AIROYoung Workshop 2021 on "Optimization and Data Science: Trends and Applications"

19/11/2020 – Attended online  
**ODS 2020**

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International Conference on Optimization and Decision Science on "Operations Research, Machine Learning and Analytics"

## ● HONOURS AND AWARDS

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2021  
**Tutoring Scholarship at Sapienza University of Rome**

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Official tutor of the Complementi di Matematica Course held for the Bachelor's Degree Course in Management Engineering

2020  
**Three-years PhD Scholarship – Sapienza University of Rome**

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2020  
**Scholarship for Erasmus+ Program**

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Winner of Erasmus+ Program scholarship from Fondazione Roma Sapienza

## ● **TEACHING ACTIVITIES**

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09/2021 – 02/2022  
**Teaching assistant**

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Tutor assistant of the Complementi di Matematica course  
Management Engineering, Sapienza University of Rome

03/2021 – 10/2021  
**Co-Advisor of a MSc Thesis**

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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*

## ● **DIGITAL SKILLS**

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### **My Digital Skills**

#### **Core Competences**

Operations Research | Data Analytics | • Machine Learning

#### **Computer Skills**

Python | R | AMPL | Microsoft Office | IBM CPLEX | GUROBI | LATEX | BIZAGI

#### **Python Libraries**

Numpy | Pandas | Scikit-Learn | PyTorch

## ● **LANGUAGE SKILLS**

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Mother tongue(s): **ITALIAN**

Other language(s):

**ENGLISH | SPANISH**