

# Marta Monaci

## Curriculum Vitae

Rome, Italy

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### Education

- Nov 2020 – Present **PhD Program in Automatic Control, Bioengineering and Operations Research**, *Sapienza University of Rome, Italy*.
- Curriculum: Operations Research
- Oct 2018 – Oct 2020 **Master's Degree in Management Engineering**, *Sapienza University of Rome, Italy*.
- Grade: 110/110 cum laude
- Curriculum: Business Intelligence and Analytics
  - Thesis: "*Solving Job Shop Scheduling via Deep Reinforcement Learning*".  
The aim of the thesis is to develop advanced algorithms based on Reinforcement Learning to solve complex optimization problems, in particular Job Shop Scheduling, via machine learning-based tools. The focus is on Deep Reinforcement Learning, which is a class of methods where the approximation is implemented by a Deep Neural Network.  
Advisors: Prof. Laura Palagi, Dr. Giorgio Grani (Research Institute Sintef, Oslo, Norway).
- Jan 2020 – Jun 2020 **Erasmus+ Program**, *Université de Strasbourg, France*.
- Faculté des sciences économiques et de gestion (FSEG)
- Oct 2015 – Oct 2018 **Bachelor's Degree in Management Engineering**, *Sapienza University of Rome, Italy*.
- Grade: 110/110
- 2010 – 2015 **Scientific High School**, *Liceo Scientifico Statale C. Cavour, Rome, Italy*.
- Grade: 100/100

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## Implementation Projects

- **Master Thesis:**

Deep Q-Learning algorithm for job-shop scheduling with a:

- Deep Feedforward Neural Network (FFN) Agent Model
- Double Long short-term Memory (LSTM) Agent Model (Python)

- **Optimization Methods for Machine Learning:**

Multilayer Perceptron and Radial Basis Function Neural Networks to solve a regression problem (Python).

Support Vector Machines to solve a classification problem (Python).

- **Probabilistic Model for Finance:**

Cox-Ross-Rubinstein model for option pricing (R).

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## Competitions and Experiences

2018 – 2019 **The Business Game - University Management Competition (UMC).**

- Management Engineering Laboratory 2018: 1° classified
- Semifinals UMC 2019: 1° classified
- National Finals UMC 2019: 4° classified

2018 **European BEST Engineering Competition (EBEC).**

An annual engineering competition organised by the Board of European Students of Technology (BEST).

2015 **Olympiads in Maths.**

2013 **International high school exchange Rome-Amsterdam.**

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## Computer Skills

Python, R, AMPL, CPLEX, LaTeX, Bizagi, Microsoft Office

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## Languages

- **Italian:** Mother tongue
- **English:** Advanced