CORRADO COPPOLA

🏛 Department of Computer, Control, and Management Engineering Antonio Ruberti (DIAG), Rome, Italy

EDUCATION

PhD Program in Automatic Control, Bioengineering and Operations Research   Nov 2021 – ongoing
Sapienza Univerisity of Rome, Italy
Curriculum: Operations Research, Advisor: Prof. Laura Palagi

Research interests: Large-Scale Optimization for Deep Learning, Deep Reinforcement Learning applied to optimization problems,
Mixed Integer Programming

MSc in Management Engineering   Oct 2019 – Oct 2021
Sapienza Univerisity of Rome, Italy
Curriculum: Decisional Models for Management Engineering

Main subjects: Operations Research, Statistics, Optimization methods for Machine Learning
Derivative-Free and Combinatorial Optimization, Continuous Optimization

Thesis: *Solving the Traveling Salesperson Problem with different Reinforcement Learning Algorithms*
Advisors: Prof. Laura Palagi, Dr. Giorgio Grani (Research Institute Sintef, Oslo, Norway)
Grade: 110/110 cum laude

BSc in Management Engineering   Oct 2016 – Jul 2019
Sapienza Univerisity of Rome, Italy
Experimental Thesis in Operations Research: *Solving a black-box*
production scheduling problem
Advisor: Dr. Giorgio Grani (Research Institute Sintef, Oslo, Norway)
Grade: 110/110 cum laude

Classical High School   2011 - 2015
Liceo Ginnasio Statale T. Tasso, Rome, Italy
Grade: 100/100

TEACHING EXPERIENCE

Optimization Method for Machine Learning teaching assistant (classes in English)   Sep 2022 - ongoing
MSc Program in Management Engineering, Sapienza University of Rome, Italy

Operations Research teaching assistant (classes in English)   Jul 2023
MSc in Mechanical Engineering, Sapienza University of Rome, Italy

Mathematical Analysis teaching assistant (classes in Italian)   Sep - Dec 2022
BSc Program in Computer Science, Sapienza University of Rome, Italy

Operations Research teaching assistant (classes in Italian)   Sep - Dec 2022
MSc Program in Management Engineering, Sapienza University of Rome, Italy

PUBLICATIONS

Technical Reports:

1. C. Coppola, G. Grani, M. Monaci, L. Palagi, *Heuristics for the Traveling Salesperson Problem based on Reinforcement Learning.* TR N. 04-2021, users.diag.uniroma1.it/~biblioteca/sites/default/files/documents/2021-04

2. C. Coppola, G. Grani, S. Foa, L. Palagi, *Solving the vehicle routing problem with deep reinforcement learning.* TR N. 07-2022, users.diag.uniroma1.it/~biblioteca/sites/default/files/documents/2022-07

Preprints:

1. V. Agasucci, C. Coppola, G. Grani, *PUSH: a primal heuristic based on Feasibility PUmp and SHifting*, https://arxiv.org/abs/2208.00191. Submitted to: "Computational Optimization and Applications".

2. C. Coppola, L. Papa, M. Boresta, I. Amerini, L. Palagi, *Computational issues in Optimization for Deep networks*, https://iris.uniroma1.it/handle/11573/1670122. Submitted to: "TOP".

3. C. Coppola, G. Liuzzi, L. Palagi, *CMA Light: a novel Minibatch Algorithm for large-scale non convex finite sum optimization.* Arxiv preprint at https://arxiv.org/abs/2307.15775.

CONFERENCES AND WORKSHOPS

20th EUROPT Workshop on Advances in Continuous Optimization 23 - 25 Aug 2023
Corvinus University, Budapest, Hungary
Delivered a talk titled: *Decomposition Minibatch Algorithms for large-scale non- convex finite sum optimization*

Optimization 2023 24 - 26 Jul 2023
Aveiro University, Aveiro, Portugal
Delivered a talk titled: *A novel mini-batch algorithm for large-scale non- convex optimization*

Europt Summer School 1 - 2 Aug 2022
FCT Nova, Lisbon, Portugal

19th EUROPT Workshop on Advances in Continuous Optimization 29 - 30 Jul 2022
FCT Nova, Lisbon, Portugal
Delivered a talk titled: *Vehicle Routing Heuristics based on Reinforcement Learning*

Mixed Integer Programming Workshop 2022 - Computational Competition Mar 2022
Organized by DANiversary
Submitted a report: *PUSH: a new heuristic based on Feasibility Pump and Shifting*

6th AIROYoung Workshop - Operation Research and Data Science in Public Services 23 – 25 Feb 2022
Roma Tre University, Italy
Delivered a talk titled: *Heuristics for the Traveling Salesperson Problem based on Reinforcement Learning*

PHD COURSES

Sparse Optimization and Clustering May 2022
Held by Matteo Lapucci and Veronica Piccialli, Sapienza University of Rome

Network Analysis for Health and Medicine Sep 2022
Held by Manuela Petti, Sapienza University of Rome

Matching Theory and School Choice Jun 2023
Held by Yuri Faenza, Columbia University

OTHER EXPERIENCES AND AWARDS

Management Engineering Excellence Program Mar – Jun 2021
Sapienza University of Rome, Italy
Ranked first among the highest achieving students, successfully attended the program

Certificate of Proficiency in Russian Language Mar 2019
RUDN, Moscow, Russia
European levels C1 (written), B2 (spoken)

SKILLS

Core Competencies	Operations Research, Machine Learning, Data Analysis
Computer skills	Python, C++, R, AMPL, LaTeX, Arena, MATLAB, MySQL, Microsoft Office
Python Libraries	Numpy, Pandas, Pytorch, Scikit-Learn, CPLEX and Gurobi for Python
Languages	**Mother tongue**: Italian. **Advanced user**: English, Russian, French. **Basic knowledge**: German.