

Marco Caoduro (he/him)

Optimization Specialist

Trilingual research scientist with over 4 years of extensive mathematical research expertise gained as a Postdoctoral and PhD Research Fellow in Canada and France. Proficient in Discrete Mathematics, Linear and Integer Programming, with hands-on experience in Python and Gurobi. Eager to leverage my analytical thinking, problem-solving abilities, and collaborative nature to tackle industry challenges.

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📍 Vancouver, BC, Canada

🌐 [marcocaoduro](https://www.linkedin.com/in/marcocaoduro)

Skills

Combinatorial Optimization

Mixed Integer Programming

Graph Theory

Gurobi

Python

LaTeX

SQL

Paper Writing

Conference Presentation

Teamwork

Continuous Learning

Problem-Solving

Resilience

Experience

Postdoctoral Research Fellow

Dec. 2022 – (exp. Nov. 2024)

Sauder School of Business, University of British Columbia

Vancouver, Canada

Advisors: Joseph Paat (Sauder School of Business, UBC) and Bruce Shepherd (Department of Computer Science, UBC)

- Developed combinatorial algorithms to solve the Colorful Linear Programming
- Supervized 3 Undergraduate Students during 5 months, as part of the PIMS Virtual Experimental Mathematics Lab
- Taught “Logistics and Operations Management” (UBC Sauder, Summer Term)
- Investigated the properties of hypergraphs related to the k-set packing problem

PhD Researcher

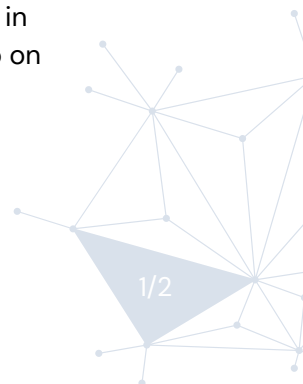
Oct. 2019 – Nov. 2022)

Laboratoire G-SCOP, Université Grenoble Alpes (UGA)

Grenoble, France

Advisors: András Sebő (Lab. G-SCOP, UGA) and Matěj Stehlík (Lab. IRIF, Université Paris Cité)

- Established new bounds relating the hitting and packing numbers of geometric objects
- Delivered presentations on our research at 4 international conferences and engaged in collaborative efforts with fellow international researchers during a 1-month workshop on discrete optimization (Hausdorff Research Institute, Germany)
- Supervized an undergraduate student during a 5-month internship
- Taught “Algorithms and Data Structure” (Grenoble INP), “Graphs and Applications” (Grenoble INP), “Algorithms and Programming in Python” (UGA)



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Education

- **Teaching education**, Università degli Studi di Verona
Courses: Teaching Methodology, Pedagogy, Anthropology, Psychology
Mar. 2021 – Sept. 2021
Online
- **Master's degree in Mathematics** (110/110 with honors)
Università degli Studi di Verona
Thesis Title: "Dypergraph connectivity augmentation: an uncrossing approach"
Oct. 2017 – Sept. 2019
Verona, Italy
- **Erasmus+ for Traineeship**, Egerváry Research Group on
Combinatorial Optimization, Eötvös Loránd University
Feb. 2019 – Aug. 2019
Budapest, Hungary
- **Erasmus+ for Studying**, Facultad de Matemáticas,
Universidad de Murcia
Sept. 2018 – Feb. 2019
Murcia, Spain

Selected Publications

Boxicity and Interval-Orders: Petersen and the Complements of Line Graphs,

The 31st International Symposium on Graph Drawing and Network Visualization, Isola delle Femmine, with András Sebő

A lower bound for constant-size local certification,

Theoretical Computer Science Volume 971, 6 September 2023, 114068, with Virginia Ardévol Martínez, Laurent Feuilloley, Jonathan Narboni, Pegah Pournajafi, Jean-Florent Raymond

On the independence number of intersection graphs of axis-parallel segments,

Journal of Computational Geometry, Vol. 14 No. 1 (2023), with Jana Cslovjecssek, Michał Pilipczuk, Karol Węgrzycki

Selected Talks

- **Algorithmic Challenges Surrounding Colorful Carathéodory's Theorem**, IAM UBC Seminar, February 26, 2024
- **Boxicity and Interval-Orders: Petersen and the Complements of Line Graphs**, West Coast Optimization Meeting (WCOM 23), September 23, 2023
- **On the Hitting/Packing Ratio of Axis-Parallel Segments**, 11th International Colloquium on Graph Theory and combinatorics (ICGT 2022), July 4–8, 2022

Languages

Italian: Native
English: Fluent (IELTS: 8.0/9, 2024)
French: Fluent
Spanish: Intermediate

