

Gabriele Dragotto

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Research interests

Theory and practice of Mixed-Integer Programming, (Algorithmic) Game Theory, and Optimization.

Education

Jan 2019 –
Present

Ph.D. in Mathematics, Polytechnique Montréal, CERC DS4DM

Thesis: On Mathematical Programming Games

Advisor: by Prof. Andrea Lodi (PolyMtl & Cornell University)

Expected Graduation: January 2022

Sep 2015 –
Mar 2018

B.Sc in Engineering and Management, Politecnico di Torino

Scholarship: *Giovani Talenti* (top 2% university-wide) - Graduated in 2.5 years (/3)

Thesis: "Fair players allocation in ATP Tournaments generation: a combinatorial optimization approach" published in *Annals of Operations Research*

Advisor: Prof. Federico Della Croce

Exchange: Erasmus in Industrial Engineering and CS, Tampere University of Technology

Professional Experience

Apr 2018 - Dec
2019

Assistant Researcher, DIGEP, Politecnico di Torino

Models and Algorithms of Mathematical Programming and Artificial Intelligence for problems of Combinatorial Design

Lab heads: Prof. Federico Della Croce, Prof. Fabio Salassa

Sep 2015 - Mar
2018

Innovation Engineer, CEAN S.p.A., Torino

Project leader for: Salesforce CRM, ERP systems, Asana Performance Evaluation, IT systems

Founder of Ceàn Color, a creative department now employing 12+ people

Organizer of the Google Startup Weekend Retail Torino 2016

Creator of CEAN360 for iOS

Summer 2013,
2014

Summer Intern, CEAN S.p.A., Torino

Data Collection Manager - Small-medium stores

Publications

WORKING PAPERS

2021

ZERO: Playing Mathematical Programming Games

Margarida Carvalho, Gabriele Dragotto, Andrea Lodi, Sriram Sankaranarayanan

In Preparation for: INFORMS Journal on Computing - [GitHub](#)

2021

The Cut and Play Algorithm: Computing Nash Equilibria via Outer Approximations

Margarida Carvalho, Gabriele Dragotto, Andrea Lodi, Sriram Sankaranarayanan

In Preparation for: SIAM Journal on Optimization

2021

Rationality and Cutting Planes: When MIP meets Game Theory

Margarida Carvalho, Gabriele Dragotto, Andrea Lodi, Sriram Sankaranarayanan

Working Paper

- 2021 **ZEROREgrets: Enumerating and Optimizing Nash Equilibria in Integer Programming Games**
 Gabriele Dragotto, Rosario Scatamacchia
In Preparation for: Integer Programming and Combinatorial Optimization (IPCO 2022)

JOURNAL PAPERS

- 2020 **When Nash Meets Stackelberg**
 Margarida Carvalho, Gabriele Dragotto, Felipe Feijoo, Andrea Lodi, Sriram Sankaranarayanan
Submitted - [arXiv:1910.06452](https://arxiv.org/abs/1910.06452)
- 2020 **Merging Combinatorial Design and Optimization: the Oberwolfach Problem**
 Fabio Salassa, Gabriele Dragotto, Tommaso Traetta, Marco Buratti, Federico Della Croce
Australas. J. Combin. - [arXiv:1903.12112](https://arxiv.org/abs/1903.12112) - [GitHub](#)
- 2020 **On fairness and diversification in WTA and ATP tennis tournaments generation**
 Federico Della Croce, Gabriele Dragotto, Rosario Scatamacchia
Annals of Operations Research - [arXiv:1901.05387](https://arxiv.org/abs/1901.05387) - [GitHub](#)

Teaching and Mentorship

TEACHING

- Winter 2021 **TA for MTH6404: Integer Programming**, Polytechnique Montréal
 Design of quizzes, counseling (forum and Zoom), and grading.
 30 students - *Rating: X/5.*
- Spring 2016, **Economics, Branding and Strategic Management**, IIS Majorana
 2017 Elective High-school course: primer on selected topics, joint with CEAN S.p.A.
Lectures available - 35 students
- Summer 2021 **Internship Supervisor**, Matthew Dwight Houston (B.Sc). Polytechnique Montréal
Topic: A multi-leader multi-follower model for vaccine trades in the pandemic.
Advised with: Andrea Lodi, Margarida Carvalho

Honors and Awards

- Feb 2021 **Best Presentation Award**, AIROYoung Annual Workshop
When Nash Meets Stackelberg - University of Naples, Italy (virtual)
- May 2020 **Poster Finalist, Travel Award**, MIP Workshop 2020
When Nash Meets Stackelberg - Rutgers University, (NJ) U.S. (virtual)
- 2015-2018 **Scholarship "Giovani Talenti"**, Politecnico di Torino
 Top 2% University-wide (35k students): elective courses, industrial networking, covers full tuition
- 2015 **National Excellence Honour Roll**, Italian Ministry of Ed., Uni. and Research
 Best GPA (9.55/10) in 2015's class (high-school wide, 150 students) - 110 cum Laude final exam mark

Selected Talks

- Jul 2021 **On Mixed-Integer Programming Equilibria**
EURO 2021, Athens, Greece
- Feb 2021 **When Nash Meets Stackelberg**
AIROYoung 2021, University of Naples, Italy (Online)
- May 2020 **When Nash Meets Stackelberg**
MIP Workshop 2020, Rutgers University, (NJ) U.S. (Online)

- Jan 2020 **When Nash Meets Stackelberg**
Assuois COW 2020 , Elevator Pitch. Aussois, France
- May 2019 **The Oberwolfach Problem**
Optimization Days 2019 . HEC Montréal, Canada
- Jul 2018 **On fairness and diversification in WTA and ATP tennis tournaments generation**
EURO 2018 . Universitat de València, Spain
- Jun 2018 **On fairness and diversification in WTA and ATP tennis tournaments generation**
POLITO . Politecnico di Torino, Italy

Selected Posters

- May 2021 **The Equilibrium Oracle and the Cut-And-Play Algorithm**
MIP Workshop 2021 . Rutgers University, (NJ) U.S. (Online)
- May 2020 **When Nash Meets Stackelberg**, Travel Award, Finalist
MIP Workshop 2020 . Rutgers University, (NJ) U.S. (Online)

Press

- Apr 2018 Politecnico finds the Tennis' algorithm , *National front-page*
On La Stampa, Italy
- Apr 2018 The Mathematics of Tennis
On MATEpristem, Bocconi University, Italy
- May 2016 20 Successful 20 Years Old
On La Repubblica, Italy

Professional Memberships and Service

- Societies *MOS: Mathematical Optimization Society*
INFORMS: Institute for Operations Research and Management Science
SIAM: Society of Industrial Applied Mathematics
AIRO and AIROYoung: Italian Operations Research Society
- Reviewing *INFORMS Journal On Computing, Annals of Operations Research*
- Conferences *DSADM Coffee Talks: organizer.*

Other

Languages and Citizenship

Italian (native), English (fluent), German (elementary), French (elementary)
Italian citizen. Born in Torino, the 28th of November 1996 (24)

Volunteering

TEDxTorino co-presenter (Jan 2018), Area_G Onlus video-maker (2015)

High School Service

Introduced the Student Union Fund (raised € 5k+), introduced and set up common student lounges, organizer of fundraising events, founder of M1 Online (Student e-newspaper) and developed the iOS and Android App, developer of school website, and ERP software. *Some videos .*

Sharing

My whole university education is open-source