Rémi **Castera**

IMAG building • **Office 418** • 700 Avenue Centrale
38400 Saint-Martin d'Hères
E-MAIL remi.castera@inria.fr

EDUCATION

PhD - Applied mathematics
Grenoble-Alpes University/LIG, Grenoble, France, 2021 – present
Advisors: Patrick Loiseau & Bary Pradelski
Expected graduation: 2024

Master of Science – Optimization and Game Theory
IP Paris/Université Paris-Saclay, Palaiseau, France, 2020 – 2021

Engineering Degree – Applied Mathematics
Ecole Polytechnique, Palaiseau, France, 2017 – 2021

Bachelor of Science - Mathematics
Université Lyon 1, Lyon, France, 2014 – 2017

RESEARCH EXPERIENCE

PhD - LIG - POLARIS team (October 2021 – present)
Studying questions of **fairness** in **matching** processes using **game theory**, under the supervision of
Patrick Loiseau and **Bary Pradelski**. Particularly interested in **statistical discrimination**, and the role of
correlation of priorities in fairness and welfare issues.

Research Internship - LIG - POLARIS team (April – September 2021)
Studied questions of **fairness** in **matching** processes using **game theory**, under the supervision of **Patrick
Loiseau** and **Bary Pradelski**. Measured the impact of **uncertainty in ranking** on the outcome of the
Deferred Acceptance algorithm.

Research Internship - Centralesupelec/CVN - OPIS team (May – August 2020)
Studied **Graph Neural Networks** under the supervision of **Jean-Christophe Pesquet**. Realized a survey
about this kind of networks and their use in **regression** tasks, as well as their **robustness** to **adversarial
perturbations**. Applied to this model Prof. Pesquet's work about **Lipschitz constants of neural networks**,
with experimental validation.

R&D Internship - Mikros Animation (June – August 2019)
Worked as a **software engineer** in **3D animation** inside **Mikros Animation**'s research and development
team. Developed a **shape correction** tool for characters as a plug-in for **Autodesk Maya**.

PUBLICATIONS

R. Castera, P. Loiseau, and B. S. R. Pradelski. **Statistical discrimination in stable matchings**. In
Proceedings of the 23rd ACM Conference on Economics and Computation, EC '22, page 373–374,

New York, NY, USA, 2022. Association for Computing Machinery.

TALKS IN INTERNATIONAL CONFERENCES

12th Conference on Economic Design (Padova, Italy, June 9-11 2022): Statistical discrimination in stable matchings

23rd ACM Conference on Economics and Computation (Boulder, CO, USA, July 11-15 2022): Statistical discrimination in stable matchings

33rd Stony Brook International Conference on Game Theory (Stony Brook, NY, USA, July 18-21 2022): Statistical discrimination in stable matchings

TEACHING EXPERIENCE

Université Grenoble-Alpes:
MAT201: Introduction to linear algebra (teaching assistant, Jan-May 2022)
INF202: Modeling of information structures - formal logic and binary relations (teaching assistant, Jan-May 2022)
Forthcoming: MAT406: Computer assisted mathematics (teaching assistant, Jan-May 2023)

Lycée militaire d'Aix-en-Provence
Teaching assistant in mathematics and physics for all high school and undergraduate students (Nov-April 2018)

VOLUNTEERING

French Red Cross:
Grenoble - Direction of emergency management and first aid: responsible for operational equipment (May 2022-present)
Rescuer (PSE2 qualification), ambulance driver, radio operator, emergency management worker (Oct 2022 - today)

ASK:
Social patrols, distribution of food, clothes and essential products (Sept 2018 - Mar 2020)