



CURRENT POSITION

Postdoc - Moroccan Center for Game Theory (since November 2024)

RESEARCH EXPERIENCE

PhD - Grenoble-Alpes University/LIG - POLARIS team (October 2021 – October 2024)

Studying questions of **fairness** in **matching** problems using **algorithmic game theory**, under the supervision of **Patrick Loiseau** and **Bary Pradelski**. Particularly interested in **group fairness**, and the role of **correlation of priorities** in fairness and welfare issues.

Research Internship - Grenoble-Alpes University/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**.

EDUCATION

PhD - Applied Mathematics - Efficiency and Fairness in Matching Problems

Grenoble-Alpes University/LIG, Grenoble, France, 2021 – 2024

Advisors: Patrick Loiseau & Bary Pradelski

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

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.

WORKING PAPERS

R. Castera, F. Garrido-Lucero, M. Molina, S. Murras, P. Loiseau, and V. Perchet. **Price of Fairness in Bipartite Matching**. <https://arxiv.org/abs/2403.00397>

R. Castera, P. Loiseau, and B. S. R. Pradelski. **Correlation of Rankings in Matching Markets**. <https://hal.science/hal-03672270>

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

From Matching to Markets: A Tale of Mathematics, Economics and Computer Science (CIRM, Marseille, France, December 11 2023): Statistical discrimination in stable matchings

19th Matching in Practice Workshop (Zurich, Switzerland, March 18-19 2024): Correlation of Rankings in Matching Markets

Matching Markets and Inequality (Exeter, UK, June 20-21 2024): Correlation of Rankings in Matching Markets

GAIMSS Workshop (Metz, France, June 27-28 2024): The Price of Fairness in Bipartite Matching

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)

MAT309: Algebra and arithmetic (teaching assistant, Sep 2022-Jan 2023)

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)

LANGUAGES

French - Native speaker

English - C2 level

Italian - C2 level

Spanish - A2 level

Ukrainian - A2 level

Arabic - A1 level

.....

WORKPLACE INVOLVEMENT

Grenoble-Alpes University/LIG

Certified workplace rescuer (SST)

Trained in mental health first aid (PSSM/MHFA)

.....

VOLUNTEERING

French Red Cross:

Grenoble local unit - Board of emergency management and first aid: responsible for operational capacity (May 2022-October 2023)

Rescue team leader, emergency management officer, ambulance driver (Oct 2021 - today)

Certified Instructor for training rescuers and teaching first aid to the general population (May 2023 - today)

Social patrols, distribution of food, clothes and essential products, night shelter management (April 2022 - today)

ASK:

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