BAPTISTE PLAQUEVENT-JOURDAIN

PERSONAL INFORMATION

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STUDIES

Master 2 Optimization, Palaiseau-Orsay – IP Paris *2020 – 2021*
English formation in optimization, analysis, convexity,
optimal control, markov processes, game theory
Classes (September-April) then research internship (Ranked 1^{st}/17)

ENSTA Paris, Palaiseau – general engineer degree *2017 – 2021*
Culture, sport, foreign langages, economy classes
(Ranked top 5% out of 162 students in the 1^{st} year)
Applied Mathematics option:
numerical analysis, statistics, probabilities, optimization
Sciences of Optimization and Data specialization:
Linear optimization, graphs, metaheuristics, complexity

"CPGE" (MP), High School Chateaubriand Rennes *2014 – 2017*
Sustained classes in mathematics, physics, computer science, literature, english

RESEARCH EXPERIENCE

PhD thesis, international co-supervision *01/2022-08/2025*
A Robust Linearization Method for Complementarity Problems
A Detour Through Hyperplane Arrangements
Supervised by Jean Charles Gilbert, Inria Paris and
Jean-Pierre Dussault, Université de Sherbrooke
Nonsmooth analysis/optimization, complementarity,
Algorithms, computational geometry

Stage-CDD, Inria Paris, Paris, France *04/2021 – 12/2021*
Master internship (April-September) and
"Pre-thesis" (October-December) on the PhD's topic

Gap (half-)year, Inria Saclay – École Polytechnique, Palaiseau, France *03/2020 – 08/2020*
Internship in the RANDOPT team
BFGS for multiobjective optimization,
Dynamic maximization of the hypervolume

Gap (half-)year, Thales DMS, Élancourt, France *09/2019 – 02/2020*
Modelling of meta-networks for wave redirection
Physical analysis, bibliographic work, simulation

Research Internship, Delft, The Netherlands *05/2019 – 08/2019*
Finite Elements for nonlinear PDEs
Numerical analysis, simulation, Newton's method

ACTIVITIES

Teaching *2021-2024*
Optimization sessions in first and second year at ENSTA and at Sherbrooke
Participation in exercises and exams preparation

MOOC GENIUS for high school students – Polytechnique, Palaiseau *2020 – 2021*
Co-writing of a module of the maths section

PUBLICATIONS

- *On the B-differential of the componentwise minimum of two affine vectorial functions*, online, accepted (Mathematical Programming Computation) : [DGP25a] (detailed version).
- *Primal and dual approaches for the chamber enumeration of real hyperplane arrangements*, submitted : [DGP25b], detailed version [DGP25c].
- *DMS and MultiGLODS: black-box optimization benchmarking of two direct search methods on the bbob-biobj test suite*, online, accepted : [Bro+21].
- PhD thesis: Slides, English manuscript, French manuscript.

CODES

- `ISF.m` : code and documentation ([DGP23]) of [DGP25a], identification of the chambers of central arrangements and related problems.
- `ISF.jl` : code and documentation of [DGP25b], identification of the chambers of generic arrangements.

TALKS

- ISMP 2024, slides — July 2024, Montréal, Canada
- NOPTA 2024 (poster) — april 2024, Anvers, Belgium
- Julia Days 2023, slides — October 2023, Paris, France
- Québec colloquim of the ISM — June 2023, Sherbrooke, Canada
- JOPT2023 – link, slides — May 2023, Montréal, Canada
- Annual days of reseach group MOA – link — October 2022, Nice, France
- JOPT2022 – link (same slides) — May 2022, Montréal, Canada

GRANTS

ISM Excellence Grant – Institute of Mathematical Sciences of Canada *2024*

Globalink Research Grant – MITACS-Inria *2023*

Sophie Germain Academic Excellence Grant (master) – FMJH *2020 – 2021*

TRIVIA

Software: Julia, Matlab
French: mother tongue *English*: fluent (for work)
Hobbies: cooking, board/video/card games

Références

[Bro+21] Dimo Brockhoff et al. "DMS and MultiGLODS: black-box optimization benchmarking of two direct search methods on the bbob-biobj test suite". In: July 2021, pp. 1251–1258. DOI: 10.1145/3449726.3463207.

[DGP23] Jean-Pierre Dussault, Jean Charles Gilbert, and Baptiste Plaquevent-Jourdain. *ISF and BD-IFFMIN - MATLAB Functions for Central Hyperplane Arrangements and the Computation of the B-differential of the Componentwise Minimum of Two Affine Vector Functions*. Technical Report. Inria Paris, Université de Sherbrooke, 2023.

[DGP25a] J.-P. Dussault, J.Ch. Gilbert, and B. Plaquevent-Jourdain. *On the B-differential of the componentwise minimum of two affine vectorial functions*. Research Report. 2025.

[DGP25b] Jean-Pierre Dussault, J.Ch. Gilbert, and B. Plaquevent-Jourdain. *Primal and dual approaches for the chamber enumeration of real hyperplane arrangements*. Research Report (in preparation). 2025.

[DGP25c] Jean-Pierre Dussault, J.Ch. Gilbert, and B. Plaquevent-Jourdain. *Primal and dual approaches for the chamber enumeration of real hyperplane arrangements – The full report*. Research Report (in preparation). 2025.