



Nail Baloul

PhD Student - Started in October 2024
CERMICS
École Nationale des Ponts et Chaussées - Institut Polytechnique de Paris

Education

September 2024 ↑ September 2023

Master's Degree in Optimization

University of Paris-Saclay

- Advanced Optimization Techniques: Gained skills in convex analysis, calculus of variations, stochastic optimization, non-smooth optimization and game theory.
- Optimal Control and Dynamical Systems: Focused on optimal control of ordinary differential equations (ODEs) and studied constrained dynamical systems.
- Optimal Transport and Geometric Methods: Learned geometric techniques used in optimal transport problems and control systems, with an emphasis on practical applications.
- Applied Mathematics Projects: Worked on research projects that apply optimization methods to real-world problems in areas like machine learning, finance, and engineering.
- Programming Skills: Improved skills in scientific computing using Python, MATLAB, and Julia to implement and analyze optimization algorithms.

July 2023 ↑ September 2021

Master of Science in Analysis, Partial Differential Equations and Applications

University of Sciences and Technology Houari Boumediene, Algiers

- Advanced techniques for analysis of various types of PDE using Functional Analysis, Distributions and Semigroups.
- Trained extensively in numerical approximations of PDEs involving Galerkin methods and Finite element methods.
- Studied recent trends in mathematical modelling of epidemiology and fluid mechanics.
- Master's thesis entitled "General Decay for a viscoelastic plate equation with a time delay"

July 2021 ↑ September 2018

Bachelor of Science in Pure Mathematics

University of Sciences and Technology Houari Boumediene, Algiers

- Main courses related to Analysis, Topology, Algebra, Geometry, Probabilities and Numerical Analysis.
- Bachelor's thesis entitled "On locally compact spaces and Alexandroff Compactification"

Work experience

August 2024 ↑ April 2024

Master 2 Research Internship

UMA Laboratory, ENSTA Paris, France

- Under the supervision of Professor Sorin Mihai Grad. Study of proximal algorithms for constrained optimization problem.
- Implementation of iterative methods based on duality theory and the use of proximal operators

June 2023 ↑ January 2023

Master 2 Research Internship

AMNEDP Laboratory, Faculty of Mathematics, USTHB, Algiers, Algeria

- Under the supervision of Professor Ammar Khemmoudj. Analysis of the well-posedness and asymptotic behaviour of a physical system.
- Conducted literature reviews and used analytical techniques such as energy methods and maximum principles to establish the stability and regularity of the solution.

Contact

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- 🏠 Paris, Ile-de France

Skills

- Qualitative Analysis
- Problem Solving
- Critical and Analytical Thinking
- Adaptability

Languages

French	C1
English	B2
Arabic	C1