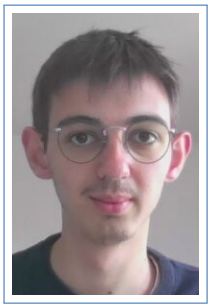

Louis Gaillard

Resume

Education

2024– **PhD Student "Tight bounds and efficient algorithms for linear differential equations"**, *under the supervision of Alin Bostan & Bruno Salvy & Gilles Villard*, LIP, *ENS de Lyon*, Lyon.

2020–2024 **Diplôme de l'ENS de Lyon**, *ENS de Lyon*, Lyon.

2021–2023 **Master of Computer Science**, *ENS de Lyon*, Lyon, Concepts et applications.

2020–2021 **Licence d'Informatique**, *ENS de Lyon*, Lyon, Informatique Fondamentale.

2018–2020 **CPGE**, *Lycée R. Descartes*, Tours, MPSI/MP*.

Publications

2025 **A unified approach for degree bound estimates of linear differential operators**, *Louis Gaillard*, Accepted at ISSAC'2025.
https://hal.science/hal-04977634

2024 **Solving parameter-dependent semi-algebraic systems**, *Louis Gaillard & Mohab Safey El Din*, ISSAC'2024, Raleign NC, USA.
https://doi.org/10.1145/3666000.3669718

2023 **On the order of Power Series and the Sum of Square Roots Problem**, *Louis Gaillard & Gorav Jindal*, ISSAC'2023, Tromsø, Norway.
https://doi.org/10.1145/3597066.3597079

Research Internship

2024 **Algorithms for modular composition of polynomials**, *Éric Schost (University of Waterloo)*, Waterloo Ontario, March-July (4 months).
Algorithms - Computer Algebra

2023-2024 **One-block quantifier elimination over the reals: algorithms and implementations**, *Mohab Safey El Din (LIP6 Sorbonne Université)*, Paris, September-February (6 months).
Effective Real Algebraic Geometry

2023 **Degree bounds on the output size of algorithms in Computer Algebra**, *Alin Bostan (INRIA Saclay) & Bruno Salvy (INRIA - ENS de Lyon)*, Lyon, February-July (5 months).
Computer Algebra - Polynomial Linear Algebra - Creative Telescoping

2022 **Wronskian, order of power series and positivity testing**, *Peter Bürgisser & Gorav Jindal (TU Berlin)*, Berlin, April-July (3.5 months).
Algebraic Complexity - Diophantine Approximation

2021 **Efficient and Certified Computation of Abelian Integrals: Using Coq for Hilbert's 16th Problem**, *Florent Bréhard (CRIStAL) & Damien Pous (LIP)*, Villeneuve d'Ascq, 6 weeks.
A validated tool to approximate algebraic curves

Teaching

2024-2025 **Teaching Assistant**, *M1 Computer Science, ENS de Lyon*, Optimization and Approximation, Computer Algebra, Cryptography and Security.

Languages

French **Native**
English **C1 level**
German **B2 level**

Miscellaneous

C/C++, Python, OCaml, Maple, SageMath, Coq, LaTeX.