

Dimitri Lesnoff

*PhD Student in high-performance
computing and in computer algebra*

☎ 06 74 98 72 80

✉ dimitri.lesnoff@gmail.com

🌐 www-pequan.lip6.fr/ lesnoff/

Studies

- 2022–2025 **PhD in Computer Science**, *LIP6, Sorbonne Université*.
◦ Title: Efficient linear algebra on GPU for Gröbner bases computation
◦ Supervisors: J. Berthomieu, S.Graillat, Th.Mary
- 2021–2022 **M2 in Computer Science: Master Parisien de Recherche en Informatique**, *Université de Paris*, obtained.
- 2018–2020 **M2 in Mathematics Algebra applied to computer algebra and cryptography**, *Université de Versailles Saint-Quentin*, obtained.
- 2018 **Bachelor in Mathematics**, *Paris-Saclay University, Orsay*.
Bachelor « Mathématiques en Interaction »

Preprint

- 2025 **Multiword matrix multiplication over large finite fields in floating-point arithmetic**, *Submitted to a journal*, J. Berthomieu, S. Graillat, D. Lesnoff, Th. Mary.
<https://hal-lara.archives-ouvertes.fr/NUMPEX/hal-04917201v1>

Publications

- 2023 **Modular matrix multiplication on GPU for polynomial system solving**, *ACM Communications in Computer Algebra*, vol. 57 (2), pp. 35-38, Association for Computing Machinery, 2023, J. Berthomieu, S. Graillat, D. Lesnoff, Th. Mary.
<https://dl.acm.org/doi/10.1145/3614408.3614411>

Communications

International

- April 2023 **Modular Matrix Multiplication on GPU for Polynomial System Solving**, *International Symposium on Symbolic and Algebraic Computation (ISSAC)*.
- May 2024 **Multiword Matrix Multiplication over Large Prime Fields on GPUs**, *SIAM LA*.

National

- March 2023 **Efficient modular matrix multiplication on GPU for polynomial system solving**, *Journées nationales du Calcul Formel*.
- March 2025 **Multiword Modular Matrix Decomposition with Floating-point Representation**, *Journées nationales du Calcul Formel*.

Software

- 2022–2025 **Library for multiword matrix multiplication over large prime fields with floating-point arithmetic**, *Unpublished*, 10k LoC, CUDA & FORTRAN.

Teachings

2022–2025 **Teachings**, in *Sorbonne-Université*, at Paris.
190 hours (in French by default)

Level	Volume (h.)	Lecture	Content
M1	61 TD/55 TP	Modèles de Calcul	(EN) Linear algebra: PLUQ, QR, SVD; FFT, Karatsuba, Interpolation, binary complexity
L1	38.5 TD	Éléments de programmation 2	Intro to C: pointers, arrays, linked lists
L2	16 TP	Structures de données	Hash tables, project: QuadTree structure in C
L1	1.5 TD/10.5 TP	Éléments de prog. Sci. formelles	JS, HTML, OOP in Python, SQL
M1	2 TD/2 TP	Fdt de l'Algorithmique algébrique	Karatsuba, finite fields algorithms
L1	1.5 TD/1.5 TP	Éléments de programmation 1	Introduction to Python

2017–2020 **Private tutoring in Maths**.
Six students. Preparation to baccalauréat.

Internships

- 2022 **M2 CS internship**, *LIP6, Sorbonne University, Paris*, 5 months.
Efficient Gröbner bases computation on GPU
- 2020 **M2 Maths internship**, *CEA, Grenoble*, 6 months.
Side-Channel Disassembly, source code reconstruction

Undertaken Trainings

- 2024 **SIMD Vectorisation in Fortran**, *Idris-CNRS, Orsay*, 1 day.

Collective Responsibilities

- 2024 PhD Student Board of LIP6