Valentina **Astore**

PHD STUDENT AT INRIA SACLAY & ÉCOLE POLYTECHNIQUE

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Age: 25 · Nationality: Italian

Education

PhD in Computer Science *Palaiseau, France*
INRIA PARIS-SACLAY & ÉCOLE POLYTECHNIQUE *Oct. 2024 - Present*
- Research areas: Algebraic Coding Theory, Finite Fields, Finite Geometry, and applications to Cryptography.
- Supervisors: Alain Couvreur and Martino Borello.

MSc in Mathematics (Cryptography & Coding Theory) *Trento, Italy*
UNIVERSITY OF TRENTO *Sept. 2021 - March 2024*
- Highly selective master program (10 students per year, with admission test).
- Graduation grade: 110 with honour/110.

Master's Project *Saint-Denis, France*
UNIVERSITY OF PARIS 8 - LAGA *Oct. 2023 - Dec. 2023*
- Topics: Coding Theory, Rank-Metric Codes, Distinguishers, Castelnuovo-Mumford Regularity.
- Supervisors: Martino Borello (University of Paris 8) and Marco Calderini (University of Trento).

BSc in Mathematics *Trento, Italy*
UNIVERSITY OF TRENTO *Sept. 2018 - Sept. 2021*
- Bachelor's project: "Paillier Cryptosystem", Supervisor: Nadir Murru (University of Trento).
- Graduation grade: 108/110.

Publications

PREPRINT

V. Astore, M. Borello, M. Calderini, F. Salizzoni. **A geometric invariant of linear rank-metric codes.** *To appear in SIAM Journal on Applied Algebra and Geometry.* arXiv:2411.19087

Complementary Activities

TALKS

Contributed talk. 15 September - 19 September 2025, Brussels (Belgium) .
Event: Finite Geometry and Friends - A Brussels summer school on Finite Geometry.
Topics: Finite geometry and applications.

Invited talk. 07-11 July 2025, Madison (Wisconsin, US).
Event: SIAM Conference on Applied Algebraic Geometry (AG25).
Topics: Algebraic geometry in industrial and applied mathematics.

Contributed talk. 31 March - 04 April 2025, Pornichet (France).
Event: Journées Codage et Cryptographie (C2).
Topics: Cryptography and Coding Theory.

Contributed talk. 14-16 February 2024, Caserta (Italy).
Event: OpeRa 2024 - Open Problems on Rank-Metric Codes.
Topics: Latest advancements in rank-metric code theory.

COURSES & WORKSHOPS

COSMO 2025. 03-05 February 2025, Paris (France).
Topics: combinatorics of spaces under multiplication and applications.
Member of the organizing committee.

PQCifris 2022 School on Post-Quantum Cryptography. October 2022, Trento (Italy).
Topics: introduction to post-quantum cryptography, multivariate-based, code-based, isogeny-based, and lattice-based methods.

De Cifris Trends in Modern Cryptography. March 2022 - May 2022, Trento (Italy).
Topics: post-quantum cryptography, cloud encryption and secure multiparty computation.

Academic Teaching

Introduction to Computer Programming. Fall 2025.
CSC_1F001_EP courses at École polytechnique

Cryptography. Fall 2025.
CSC_5CY08_TA courses at ENSTA Paris

Foundations of Computer Science: Logic, Models, Computability and Computational Complexity. Fall 2024.
CSC_41012_EP - INF 412 courses at École polytechnique

Professional Experience

Substitute Teacher   *Bassano del Grappa (VI), Italy*
SCUOLA PRIMARIA MARCONI   *May 2024*
- On-call work
- Sector: Education (primary school).

Research and Development Programmer   *Milano, Italy*
BV TECH S.P.A.   *March 2023 - July 2023*
- Internship experience, held remotely.
- Sector: IT Services and IT Consulting.
- Tasks: Analyze and improve the security strength of a communication service for messages and VoIP calls.

Administrative assistant   *Torquay, United Kingdom*
ESSENTIAL 6 LTD   *August 2017- Sept. 2017*
- Internship experience.
- Sector: First Aid & Safety Training .
- Tasks: Management of electronic and paper mail, production and revisions of costumer's certificates, organization of team building events for the staff.