Nicolò Bignami

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Education:

2023 – present	**Ph.D. in Geometry and Mathematical Physics**, SISSA. Advisors: Alina Marian & Andrea Ricolfi.
2018 – 2023	**Scuola Normale Superiore Diploma**, *100/100 cum laude*. The Scuola provides a five-year scholarship accessed by merit, covering living expenses and tuition fees. Up to 32 science-area students are awarded each year. Students attend several additional courses held at the Scuola, and must maintain a high grade average. The graduation diploma is legally equivalent to a Master's degree.
2021 – 2023	**Master's degree in Mathematics**, *110/110 cum laude*, University of Pisa. Advisor: Francesco Sala. Thesis: *On the Beauville-Voisin conjecture.*
2018 – 2021	**Bachelor's degree in Mathematics**, *110/110 cum laude*, University of Pisa. Advisor: Francesco Sala. Thesis: *Quiver representations and Gabriel's theorem.*

Research:

(3) Components of Quot schemes on surfaces, *In preparation.*

(2) Moduli spaces of rank 2 sheaves on $\mathbb{P}^3$ via Quot schemes, with C. Almeida, M. Jardim, A. Ricolfi. arXiv:2611.01961.

(1) On moduli spaces of vector bundles on $K3^{[n]}$-type IHS manifolds, with L. Buelli, I. Macías, R. Vacca, V. Zuliani. arXiv:2606.23622.

Scholarships:

- *Scuola Normale Superiore Scholarship*, 2018-2023

Research seminars:

2026 – Moduli of rank 2 sheaves on $\mathbb{P}^3$ via Quot schemes, Politecnico di Milano. (scheduled)

Projects:

- **Organizer of the "Hall algebras and DT Theory" Reading Seminar**, SISSA
- **Fourth year Colloquio**, Scuola Normale Superiore
  Seminar with title "An explicit isomorphism between the Brauer Group of $\mathbb{Q}_p$ and $\mathbb{Q}/\mathbb{Z}$, via F-isocrystals", discussed under the supervision of Tamás Szamuely.

Working Seminars:

2026 – String and dilaton equations, Algebraic Geometry Seminar, SISSA.
– Derived categories of cubic fourfolds, Algebraic Geometry Seminar, SISSA.

2025 – Virtual fundamental classes and Behrend function, Hall algebras and DT invariants Reading Seminar, SISSA.
– Diagonal, inertia and automorphisms, Algebraic Geometry Seminar, SISSA.

2024 – Irreducibility questions for Quot schemes and moduli spaces of sheaves, ICTP-SISSA Quot seminar. *3 talks.*
– On the Beauville-Voisin conjecture, School on Deformation Theory IV in Rome
– Construction of Quot, Algebraic Geometry Seminar, SISSA.
– Deformation functors and tangent-obstruction theories, Algebraic Geometry Seminar, SISSA.

Conferences:

2026 – Rationality problems, Cremona groups, and motivic invariants, University of Sheffield

2025 – Conférence finale de l'ANR FanoHK, Université de Toulouse
– PRAGMATIC Summer school, Università di Catania
– Enumerative Geometry and Geometric Representation Theory, University of Pisa

– Enumerative geometry, representation theory, and physics, Kavli IPMU

2024 – Modern methods in Moduli, University of Luxembourg

– School on Deformation Theory IV, Sapienza Università di Roma

– GAP XIX: Moduli spaces and higher structures, Sapienza Università di Roma

– The Geometry of Hilbert Schemes of Points, Levico Terme

– Fano and Hyperkähler varieties in Genova, Università di Genova

Teaching experience:

- **Teaching assistant**, *Algebra*, ICTP, 2025/2026.
  Weekly sessions for Lothar Göttsche's course in the ICTP Pre-PhD Diploma Programme, an intensive programme for talented students from developing countries. Topics included group theory, ring theory, and Galois theory.

Outreach:

- **Maker Faire**, 2026
  Volounteer at the ICTP booth, designing games and activities to communicate mathematical concepts to a broad audience.

Languages:

Fluent in Italian and English, elementary conversation skills in Spanish.

Extracurricular activities:

- **Winner of the Group Theory Competition** (in team with Livia Grammatica), *University of Pisa*, 2021.
- **Silver medal at Italian Physics Olympiads**, 2018
- **Silver medal at Italian Mathematics Olympiads**, 2018