

Riccardo Villa

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Personal Information

- **Date of birth:** July 21, 2000
- **Place of birth:** Monza (MB), Italy
- **Nationality:** Italian
- **Languages:** Italian (Mother tongue), English (Fluent), Spanish (Basic)

Education

- Ph.D. candidate in Mathematics, The University of Western Australia, March 2025-Present.
  Supervisors: Prof. Serena Dipierro, Prof. Enrico Valdinoci.
- M.Sc. in Mathematics, Università di Milano - Bicocca, 2022-2024.
  Grade: 110/110 cum laude (EQF Level 7).
  Thesis: *"The non-local Massari's problem: almost-minimality and other properties"*.
  Supervisors: Prof. Veronica Felli, Prof. Serena Dipierro, Prof. Enrico Valdinoci.
- B.Sc. in Mathematics, Università di Milano - Bicocca, 2019-2022.
  Grade: 110/110 cum laude (EQF Level 6).
  Thesis: *"On Dynamical Systems and Deterministic Chaos"*.
  Supervisor: Prof. Diego Davide Noja.

Honours and Awards

- **Exchange Extra-UE Program Scholarship**, Università di Milano - Bicocca, July 2023.
  Research visit (20 weeks) at the University of Western Australia under the supervision of Prof. Serena Dipierro and Prof. Enrico Valdinoci.
- **Academic Scholarship for Undergraduates**, Università di Milano - Bicocca, December 2022.
- **Academic Scholarship for Freshmen**, Università di Milano - Bicocca, December 2020.

Visiting Positions

- University of Pisa, Italy, Nov 2026-Dec 2026.
- Columbia University, NYC, USA, Oct 2026-Nov 2026.
- University of Pisa, Italy, Jan 2026.

- Columbia University, NYC, USA, Feb 2026-Apr 2026.
- University of Pisa, Italy, Jun 2025-Jul 2025.
- University of Pisa, Italy, Jan 2025.

Publications & Preprints

- **On non-local almost minimal sets and an application to the non-local Massari's Problem**
  Journal de Mathématiques Pures et Appliquées (2026), with S. Dipierro and E. Valdinoci.
- **Γ-convergence of the non-local Massari functional and applications to inhomogeneous Allen-Cahn equations**
  Calculus of Variations and Partial Differential Equations (2026), with S. Dipierro and E. Valdinoci.
- **Non-local Planelike Minimizers and Γ-convergence for periodic forced energies to a local anisotropic perimeter**
  Submitted (2025), with S. Dipierro, M. Novaga, and E. Valdinoci.
- **Regularity theory for non-local almost minimal surfaces via Euler-Lagrange inequalities at small scales**
  Submitted (2026), with S. Dipierro, O. Savin, and E. Valdinoci.
- **Solutions of the space-fractional heat equation with polynomial growth: Liouville theorems and Schauder estimates**
  Submitted (2026), with S. Dipierro, O. Savin, and E. Valdinoci.

Conferences, Talks & Seminars

Invited Talks

- **Seminari M.A.P.**, Scuola Normale Superiore, Nov 18, 2026.
  Talk: *To infinity and beyond: an introduction to nonlocal minimal surfaces.*
- **Student Analysis Seminar (Fall 2026)**, Columbia University, Oct 12, 2026.
  Talk: *On non-local mean curvatures - Variational objects with a geometric heritage.*
- **Differential Geometry Seminar**, Adelaide University, Jul 20, 2026.
  Talk: *On non-local mean curvatures - Variational objects with a geometric heritage.*
- **TOPS seminar**, Adelaide University, Jul 28, 2026.
  Talk: *To infinity and beyond: an introduction to nonlocal minimal surfaces.*
- **Student Analysis Seminar (Spring 2026)**, Columbia University, Mar 2, 2026.
  Talk: *To infinity and beyond: an introduction to nonlocal minimal surfaces.*
- **UWA Graduate Students Seminar**, University of Western Australia, Aug 22, 2025.
  Talk: *On non-local mean curvatures - Variational objects with a geometric heritage.*

Conferences and Workshops

- **Black Swan Academy of Mathematics Conference on Geometric Analysis and PDEs**, University of Western Australia, Aug 19-21, 2026.
  Role: Organizer.
- **Geovar Winter School on PDEs**, INDAM Headquarters, Rome, Feb 2-6, 2026.
  Role: Attendee.
- **Scuola Matematica Interuniversitaria (SMI) Summer School**, University of Perugia, Jul-Aug 2023.
  Role: Attendee.

Teaching Experience

- **Facilitator - Analysis II**, Università di Milano - Bicocca, Oct 2024-Jul 2025.
- **Facilitator - Analysis I**, Università di Milano - Bicocca, Oct 2023-Feb 2024.

Skills & Interests

- **Technical & Programming Skills:** LaTeX, C, C++, C#, Java, MATLAB, macOS, Linux (Ubuntu, Kali Linux), Microsoft Office.
- **Interests:** Rubik's cube, and logic puzzles.