

# GIULIA CAVALLERI

## PERSONAL INFORMATION

---

<i>Place and Date of Birth</i>	January 16 1997, Bergamo (Italy)
<i>Email</i>	giulia.cavalleri01@universitadipavia.it
<i>Citizenship</i>	Italian

## CURRENT POSITION

---

**Ph.D. student in Mathematical Analysis** **2022 - Today**

*University of Pavia*

Joint Ph.D. Program between University of Pavia, University of Milano-Bicocca and INdAM.

Supervisors: Prof. Pierluigi Colli, Prof. Elisabetta Rocca.

Visiting: I spent 6 months at the University of Le Havre, visiting Prof. Alain Miranville.

Interests: Nonlinear evolution equations for tumor growth models, Cahn–Hilliard equation, Optimal control problems.

## EDUCATION

---

**Postgraduate Course** **2022**

*University of Modena and Reggio Emilia*

School in AI: Deep Learning, Vision and Language for Industry - Second Edition.

**Master Degree in Mathematics** **2019 - 2021**

*University of Milano-Bicocca*

Title of the thesis: “Unique Continuation Principles at the Boundary”.

Supervisor: Prof. Veronica Felli.

Grade: 110/110 cum Laude.

**Bachelor’s Degree in Mathematics** **2016 - 2019**

*University of Milano-Bicocca*

Title of the thesis: “The Classical Müntz–Szász Theorem and the One on the Unit Disc”.

Supervisor: Prof. Stefano Meda.

Grade: 110/110 cum Laude.

**High school** **2011 - 2016**

*Liceo scientifico Filippo Lussana (Bergamo)*

Grade: 99/100.

## PUBLISHED PAPERS

---

- G. Cavalleri, P. Colli, A. Miranville, E. Rocca, On a brain tumor growth model with lactate metabolism, viscoelastic effects, and tissue damage. In: *Nonlinear Anal. Real World Appl.* 87 (2026), p. 104419.
- G. Cavalleri, A phase field model of Cahn-Hilliard type for tumour growth with mechanical effects and damage. In: *J. Math. Anal. Appl.* 550.2 (2025), p. 129627.

## PREPRINTS

---

- G. Cavalleri, A. Miranville, Optimal control on a brain tumor growth model with lactate metabolism, viscoelastic effects, and tissue damage. Preprint: arXiv:2503.17049 [math.AP], (2025), 1-30.

## CONFERENCES, WORKSHOPS AND SCHOOLS

---

- *Mathematical Analysis and Applications*. Como (Italy), June 09-13, 2025. **Poster presentation.**
- *Journée informelle de ReaDiNet*. University of Paris-Saclay (France), January 10, 2025. **Poster presentation.**
- *The 14<sup>th</sup> AIMS Conference on Dynamical Systems and Differential Equations*. NYU Abu Dhabi (UAE), December 16-20, 2024. **Invited speaker.**
- *Norman working group of Mathematical Biology - LMAH (Le Havre Normandie) & LMRS (Rouen Normandie) - Session 8*. Le Havre (France), November 28-29, 2024. **Invited speaker.**
- *Italian-Japanese Workshop on Variational Perspectives for PDEs*. University of Pavia (Italy), September 09-13, 2024. **Poster presentation.**
- *Diffuse Interface methods in Continuum Mechanics: analysis, singular limits, and algorithms*. Cetraro (Italy), July 08-12, 2024. **Poster presentation.**
- *41<sup>th</sup> Congress of the French Theoretical Biology Society*. University of Poitiers (France), June 24-27, 2024. **Invited speaker.**
- *From Cells to Tissues: Models, Analysis and Applications*. Como (Italy), June 10-14, 2024. **Contributed talk.**
- *Lions–Magenes Days 2024*. University of Pavia (Italy), May 21-22, 2024. **Poster presentation.**
- *The Cahn-Hilliard equation - recent advances and new challenges*. Chęciny, (Poland), April 21-26, 2024. **Contributed talk.**
- *Cahn-Hilliard and Allen-Cahn Equations in Bio-medicine*. Politecnico di Milano (Italy), February 22, 2024. Participant.
- *Boundary value problems and applications - The legacy of Enrico Magenes*. University of Pavia (Italy), November 21, 2023. Participant.

- *XI Giornata di Studio Politecnico di Milano - Università di Pavia “Equazioni Differenziali e Calcolo delle Variazioni”*. Politecnico di Milano (Italy), October 26, 2023. Participant.
- *CIRM conference “Variational and Geometric Structures for Evolution”*. Levico Terme (Italy), October 8-13, 2023. Participant.
- *Hausdorff School “Analysis of PDEs: Variational and Geometric Perspectives”*. University of Bonn and Hausdorff School for Advanced Studies in Mathematics (Germany), July 10-14, 2023. Selected participant.

## TEACHING EXPERIENCE

---

### Univeristy of Pavia

- Exercise lectures for “Complementi di Analisi Matematica I”, degree course in Fisica, 40 hours (2024-25).
- Seminar lectures for “Analisi Matematica I”, degree course in Ingegneria Civile e Ambientale and Ingegneria Edile e Architettura, 24 hours (2024-2025).
- Coordination of the tutoring activities associated with the course “Analisi Matematica I”, degree course in Ingegneria Civile e Ambientale and Ingegneria Edile e Architettura (2023-24).
- Seminar lectures for “Elementi di Matematica”, degree course in Scienze e tecnologie per l’ambiente e la natura (2022-23, 2023-24), 12 hours.

### University of Milano-Bicocca

- Peer tutoring for students with disabilities and with S.L.D. for “Algebra Lineare e Geometria” (2019-20), “Analisi Matematica I” (2020-21), support in the writing of the bachelor thesis in Mathematical Analysis (2022-23).
- Tutoring activities for “Analisi Matematica I”, degree course in Scienze Statistiche ed Economiche (2020-21, 16 hours) and in Matematica (2020-21, 60 hours).
- Tutoring activity for the project “Piano lauree scientifiche - riduzione tassi di abbandono” for “Analisi Matematica I”, degree course in Statistica e Scienze delle Informazioni and in Scienze Statistiche ed Economiche (2019-20, 2020-21).