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Mattia Garatti
Curriculum Vitae

I am a master student in Mathematics interested in Mathematical Analysis, and its interaction with Mathematical Physics and Geometry. My current academic goal is to start a PhD in Mathematical Analysis as soon as I complete my studies. In my master thesis I have worked on the variational representations of optimal transport and Schrödinger problem: the aim has been to highlight how the first can be recovered as Γ-limit of the second.

Education

Master degree in Mathematics (LM-40), *Università Cattolica del Sacro Cuore*, Brescia, 110 cum laude.   **2023 – 2025**
Average: 30 cum laude. Main courses' topics: Real and Functional Analysis, Measure Theory, Differential Geometry, Mathematical Physics. Thesis: "Variational representations of optimal transport and Schrödinger problem". Supervisor: Luca Tamanini - Cosupervisor: Nicolò De Ponti.

Bachelor degree in Mathematics (L-35), *Università Cattolica del Sacro Cuore*, Brescia, 110 cum laude.   **2020 – 2023**
Average: 31.33/30. Thesis: "Il Teorema di esistenza di Peano per le equazioni differenziali ordinarie", provision of a theory on ODEs in the Peano's assumptions. Supervisor: Marco Marzocchi

High School Diploma, *Liceo Scientifico 'Camillo Golgi'*, Breno (BS), 100/100.   **2015 – 2020**

Talks

Variational representations of optimal transport and Schrödinger problem, *Math PhD Days at UniTO*, Turin.   **2025**
Talk on my thesis work

Work experience

MathExcellence 2025: corso di eccelenza in Matematica, Università Cattolica del Sacro Cuore, Brescia (BS).   **June 2025**
Assistance and tutoring activities (5 hours)

Math counselor, Zanichelli editore S.p.A., Bologna (BO).   **2024 – 2025**
Teamwork with the editorial staff, autonomous creation of exercises of various difficulty on different topics to be included in future publications

Teacher Assistant, internship at Liceo Scientifico 'Golgi', Breno (BS).   **September 2022**
Frontal lectures for high school students, exam administration and correction, laboratory assistant

Private Teacher, internship at Cooperativa 'Assolo', Berzo Inferiore (BS).   **August – September 2018**
Lessons of Mathemathics and Physics for high school students with SLD

Teacher Assistant, *supervision of preschool children, scientific experiments*, Fondazione Scuola Materna 'San Giuseppe', Gratacasolo (BS).   **June 2018**

Summary schools and seminars attended

Il Problema di Plateau, *Università Cattolica del Sacro Cuore*, Brescia. **April 2025**

Lecture series about different approach to Plateau problem(s)

Introduction to Mechanics of Swelling, *Università Cattolica del Sacro Cuore*, Brescia. **February 2025**

Lecture series about mathematical models for swelling

Introduzione ai modelli matematici per i cristalli liquidi, *Università Cattolica del Sacro Cuore*, Brescia. **February 2024**

Lecture series about mathematical models for liquid crystals

Interuniversity Mathematics Summer School, *University of Perugia*. **July – August 2023**

Complex Analysis and PDE courses with related final exams successfully passed

Mathematics in Ljubljana, *University of Ljubljana, FMF and IMFM*. **July 2023**

Summer School with courses on Formalization of Mathematics and Introduction to Complex Dinamics

Storia e tecniche dei metodi geometrici di rappresentazione: un'introduzione, *Università Cattolica del Sacro Cuore*, Brescia. **March 2023**

Mini-course about cartography and perspective

Un'Introduzione alla Teoria dei Grafi, *Università Cattolica del Sacro Cuore*, Brescia. **February 2023**

Mini-course about Graph Theory and its applications

Alcuni Aspetti della Matematica Antica, *Università Cattolica del Sacro Cuore*, Brescia. **March 2021**

Webinar about history of Mathematics and some greek geometry aspects

Corso di Eccellenza in Matematica, *Università Cattolica del Sacro Cuore*, Brescia. **June 2019**

Mini-course for high school students about different fields of Mathematics

Computer skills

Programming languages: Phyton, C, C++

Mark-up languages: LaTeX, HTML

Languages

Italian: Mother tongue

English: Professional proficiency

Grants

"Smart" study award, *Università Cattolica del Sacro Cuore*, Brescia (BS). **2025**

Award for 100 best students of the university

Merit scholarship, *Tenaris*, Dalmine (BG). **2017 – 2024**

Scholarships awarded on merit every year during high school and university

Merit scholarship, *Consorzio del Bacino Imbrifero Montano dell'Oglio*, Bergamo. **2021 – 2024**

Scholarships awarded on merit every year during university

Exemption from first year university fees, *Università Cattolica del Sacro Cuore*, Brescia. **2020**

Exemption by merit

Merit scholarship, *Comune di Costa Volpino* (BG). **2020**

Scholarships awarded on merit for high school diploma

Organization	**Member of the student jury of Galileo Prize**.	**2024**

Member of the student jury of Galileo Prize. **2024**
Jury for award regarding scientific dissemination

Member of *Joint Teachers – Students Commission*, *Università Cattolica del Sacro Cuore*, Brescia. **2024 − 2025**

Staff member of *Celebration of Mind, Notte dei Ricercatori, Venite a vedere la Terra che gira*.
Mathematical popularization days, Università Cattolica del Sacro Cuore

Staff member of *Disfida matematica*. **2023 − ongoing**
Mathematical team competition for high school students, local phase in Brescia

Member of *Ufficio di Sezione Elettorale*, *Comune di Costa Volpino* (BG). **2021 − ongoing**
Scrutineer and president of polling station

Parish volunteer, *Parrocchia di "San Zenone"*, Gratacasolo. **2015 − ongoing**
Organization of summer camps and member of the local choir with budget manager functions

I hereby authorize the use of my personal data in accordance to the GDPR 679/16 - "European regulation on the protection of personal data".

July 15th, 2025

Mattia Garatti

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