



\* April 5, 2001

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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  $\Gamma$ -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 – July 11, 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), **2015 – 2020**  
100/100.

## Talks

**Variational representations of optimal transport and Schrödinger problem**, **2025**  
*Math PhD Days at UniTO*, Turin.

Talk on my thesis work

## Work experience

**MathExcellence 2025: corso di eccellenza 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 Mathematics and Physics for high school students with SLD

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

## Summer schools and seminars attended

<b>Il Problema di Plateau</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>April 2025</b>
Lecture series about different approach to Plateau problem(s)	
<b>Introduction to Mechanics of Swelling</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>February 2025</b>
Lecture series about mathematical models for swelling	
<b>Introduzione ai modelli matematici per i cristalli liquidi</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>February 2024</b>
Lecture series about mathematical models for liquid crystals	
<b>Interuniversity Mathematics Summer School</b> , <i>University of Perugia</i> .	<b>July – August 2023</b>
Complex Analysis and PDE courses with related final exams successfully passed	
<b>Mathematics in Ljubljana</b> , <i>University of Ljubljana, FMF and IMFM</i> .	<b>July 2023</b>
Summer School with courses on Formalization of Mathematics and Introduction to Complex Dynamics	
<b>Storia e tecniche dei metodi geometrici di rappresentazione: un'introduzione</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>March 2023</b>
Mini-course about cartography and perspective	
<b>Un'Introduzione alla Teoria dei Grafi</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>February 2023</b>
Mini-course about Graph Theory and its applications	
<b>Alcuni Aspetti della Matematica Antica</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>March 2021</b>
Webinar about history of Mathematics and some greek geometry aspects	
<b>Corso di Eccellenza in Matematica</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>June 2019</b>
Mini-course for high school students about different fields of Mathematics	

## Computer skills

<b>Programming languages:</b> Python, C, C++
<b>Mark-up languages:</b> LaTeX, HTML

## Languages

<b>Italian:</b> Mother tongue
<b>English:</b> Professional proficiency

## Grants

<b>"Smart" study award</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia (BS).	<b>2025</b>
Award for 100 best students of the university	
<b>Merit scholarship</b> , <i>Tenaris</i> , Dalmine (BG).	<b>2017 – 2024</b>
Scholarships awarded on merit every year during high school and university	
<b>Merit scholarship</b> , <i>Consorzio del Bacino Imbrifero Montano dell'Oglio</i> , Bergamo.	<b>2021 – 2024</b>
Scholarships awarded on merit every year during university	
<b>Exemption from first year university fees</b> , <i>Università Cattolica del Sacro Cuore</i> , Brescia.	<b>2020</b>
Exemption by merit	
<b>Merit scholarship</b> , <i>Comune di Costa Volpino</i> (BG).	<b>2020</b>
Scholarships awarded on merit for high school diploma	

## Organization

<b>Member of the student jury of Galileo Prize.</b> Jury for award regarding scientific dissemination	<b>2024</b>
<b>Member of <i>Joint Teachers – Students Commission</i>, Università Cattolica del Sacro Cuore, Brescia.</b>	<b>2024 – 2025</b>
<b>Staff member of <i>Celebration of Mind, Notte dei Ricercatori, Venite a vedere la Terra che gira.</i></b> Mathematical popularization days, Università Cattolica del Sacro Cuore	
<b>Staff member of <i>Disfida matematica.</i></b> Mathematical team competition for high school students, local phase in Brescia	<b>2023 – ongoing</b>
<b>Member of <i>Ufficio di Sezione Elettorale</i>, Comune di Costa Volpino (BG).</b> Scrutineer and president of polling station	<b>2021 – ongoing</b>
<b>Parish volunteer, <i>Parrocchia di "San Zenone"</i>, Gratacasolo.</b> Organization of summer camps and member of the local choir with budget manager functions	<b>2015 – ongoing</b>

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 15<sup>th</sup>, 2025



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