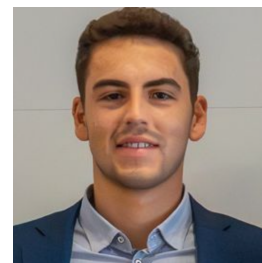


# Giacomo Santoni

NUCLEAR AND SUBNUCLEAR PHYSICS GRADUATE

Ravenna, Italy

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## Personal Profile

I am a PhD student at the University of Bologna, specialising in Nuclear and Subnuclear Physics.

## Education

### Alma Mater Studiorum - University of Bologna

Bologna, Italy

PhD in Nuclear and Subnuclear Physics

Nov, 2024 - present

- Member of the DUNE (Deep Underground Neutrino Experiment) collaboration
- Working on the SAND apparatus of the Near Detector complex, focusing on the simulation and the development of reconstruction algorithms of neutrino events.
- Supervisor: Prof. Nicoletta Mauri

### Alma Mater Studiorum - University of Bologna

Bologna, Italy

Master's degree in Nuclear and Subnuclear Physics

Sept, 2021 - Mar, 2024

- Graduated with: 110 cum laude (Average grade: 29.5)
- Thesis title: "Reconstruction of neutrino events with scintillation light in the SAND detector."  
I developed expertise in coding with *ROOT* and *Python*, using cloud-based repositories such as *GitHub*. I acquired knowledge in Deep Learning softwares, such as *Tensorflow* and its high-level API *Keras*. I am particularly interested in the *detector's R&D program*, to become proficient with all the detector aspects, both software and hardware.
- Supervisor: Dr. G. Sirri

### Alma Mater Studiorum - University of Bologna

Bologna, Italy

Bachelor's degree in Physics

Sept, 2018 - Oct, 2021

- Graduated with: 110/110
- Thesis title: "Metodo per l'identificazione di frammenti nucleari nell'esperimento FOOT."
- Supervisor: Prof. M. Villa

### Liceo Scientifico "A. Oriani"

Ravenna, Italy

High School

Sept, 2013 - Jun, 2018

- Graduated with 96/100
- "Traditional" curriculum with Latin teaching

## Working experience

### Physics and Math tutor

Bologna, Italy

Camplus College

Mar, 2024 - Now

- Private lessons to university students in preparation for Physics and Math exams.

## Schools and Talks

### SIF Congress

Palermo, Italy

Organizer: Società Italiana di Fisica (SIF)

Sept, 2025

- Talk about my master thesis project..

### Efficient Scientific Computing School

Bertinoro (FC), Italy

Organizer: INFN Bologna and INFN Padova

Sept, 2025

- School on architectures and methodologies for developing efficient large scale scientific computing applications.
- Topics covered: C++ programming, parallel and GPU programming.

### ISHEP Spring School

Cargese, Corsica

Organizers: University of Bologna; Université de Clermont-Auvergne; Technische Universität Dortmund

Apr, 2023

- A week of seminars with experts concerning several topics about high energy physics: Cosmology, Top quark physics, Machine Learning, Flavour Physics; Neutrino Physics; Beyond Standard Model theories.
- Presentation of my bachelor's thesis project.

## Physical sensing and processing Summer School

Bologna, Italy

Organizer: Alma Mater Studiorum - University of Bologna

Jul, 2023

- A week of seminars concerning the the usage of detectors in different fields of physics.
- Presentation of a team work about scintillators for particle detection.

## Dark Matter and Neutrinos School

Paris, France

Organizer: APC Paris, LPTHE, Sorbonne University, INFN Bologna

May, 2025

- A week of seminars concerning neutrinos and dark matter physics, from both theoretical and experimental point of view.
- Talk concerning my master thesis project.

## University Activities

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### inVISIBILI project

Bologna, Italy

Alma Mater Studiorum - University of Bologna

Mar, 2025 - now

- Scientific outreach at primary schools.

### Students' Representative

Bologna, Italy

Alma Mater Studiorum - University of Bologna

Jul, 2022 - Jan, 2024

- *Master's Physics degree*: discussion with professors about didactical issues to ensure a good quality of teaching; talking with professors to solve problems with exam planning.
- *Physics Department Council*: discussion about economic budget and common spaces for students.

### Students' Representative

Bologna, Italy

Alma Mater Studiorum - University of Bologna

Sept, 2019 - Jun, 2022

- *Bachelor's Physics degree*: discussion with professors about didactical issues to ensure a good quality of teaching.
- *Students' Council*: discussion with other students about all issues regarding students: associations, fees, didactical plans, exams, and economic budget.
- *Evaluation board*: evaluation of the quality of many bachelor's degrees, approval of new bachelor's and master's degrees.

### Students' association coordinator

Bologna, Italy

Alma Mater Studiorum - University of Bologna

Sept, 2018 - Apr, 2023

- Organization of scientific meetings and seminars for all students of University of Bologna.
- Organization of extra-didactical activities such as exhibitions, musical events and trips.

## Skills

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**Programming** C++, Root, Python.

**Miscellaneous** Shell (Bash/Zsh),  $\text{\LaTeX}$ (Overleaf), Microsoft Office, GitHub.

**Soft Skills** Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

## Volunteering Experiences

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### Pint of Science

Bologna, Italy

Organizing member

Feb, 2025 - now

- Organization of talks to deliver interesting and relevant news and curiosity about the latest science researches in an accessible format to the public.

### ICHEP2022

Bologna, Italy

Staff activity

Jul, 2022

- Management of Zoom meetings and talks.

### Scholè - "Lo studio come scoperta"

Bologna, Italy

Individual teacher

Sept, 2018 - Jun, 2023

- Individual lessons with high school students about scientific topics: math, physics, science.
- Lesson's shifts coordinator.

### Casa Circondariale di Bologna

Bologna, Italy

Volunteer

Sept, 2023 - Now

- Volunteer activities with the prisoners at the Bologna Prison.

## Languages

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**English** FCE (B2, 167/190)

**Italian** Native proficiency

I authorize the processing of my personal data pursuant to Legislative Decree 196 of June 30, 2003, and Article 13 of the GDPR.

Bologna, October 19, 2025