



Guglielmo Grillo

Date of birth: 30/04/1997 | **Nationality:** Italian | **Gender:** Male | **Phone number:** (+39) 3401009558 (Mobile) |

Email address: cv@guglielmogrillo.com | **Website:** guglielmogrillo.com | **LinkedIn:**

[linkedin.com/in/guglielmo-grillo](https://www.linkedin.com/in/guglielmo-grillo) | **GitHub:** github.com/NerusSkyhigh |

Address: L.go Villanuova 42, 38065, Mori (TN), Italy (Home)

● ABOUT ME

I'm a PhD student in Physics at the University of Trento (Statistical and Biological Physics group) with a strong passion for computer science. This passion led me to choose a computational path both for my curricular and extracurricular classes during my bachelor's and Master's degrees and to work on personal projects in my free time. I'm also one of the founding members of Progetto Apollo, a scientific divulgation group operating at the University of Trento in collaboration with Arditodesio. Since 2019 I've been a tutor for the University of Trento. My hobbies include video games and parkour.

● WORK EXPERIENCE

09/2019 – 12/2022 Trento, Italy

CLASSROOM TUTOR UNIVERSITY OF TRENTO

In the in-class courses, my task as a tutor was to prepare ad-hoc exercises beforehand and then follow the students in their reasoning by providing hints and guidance toward the solution. In the laboratory courses, our job was to explain the lab experiences to the students and assist them in the data collection and analysis ensuring that they understood the underlying reasoning and scientific approach.

I was assigned to the following courses:

- Sep 2022 - Dec 2022: Introductory Physics Laboratory (DII), Mathematical Basis for Cognitive Sciences (CIMEC), Mathematics and Statistics I (CIBIO);
- Mar 2022 - June 2022: **Laboratory of Physics I with Matlab (DF)**, Introductory Physics Laboratory (DICAM);
- Sep 2021 - Dec 2021: Introductory Physics Laboratory (DII);
- Sep 2020 - Dec 2020: Mathematics and Statistics (A3C);
- Sep 2019 - Jan 2020: Calculus I (DICAM), Calculus I (DIPSCO), Quantitative Methods for life-sciences (DIPSCO).

The underlined courses represent the courses for which I was the only tutor. I was part of a team of 2 to 4 tutors in all other courses.

The **bolded** entry represents the most relevant tutoring activity related to my application. During the *Laboratory of Physics I with Matlab (DF)* our team of 4 tutors from Physics designed MatLab exercises not only to ensure the comprehension of the programming language but also the understanding of the topic covered during the theoretical lectures and the problem-solving skills at the foundation of a bachelors degree in Physics.

20/09/2023 – 06/12/2023 Trento, Italy

SOLVER - INDUSTRIAL AI CHALLENGE ADIGE BLM GROUP / HUB INNOVAZIONE TRENTINO (HIT)

Business or Sector Professional, scientific and technical activities |

Website <https://www.trentinoinnovation.eu/en/innovate/innovation-tools/ai-challenge/>

2017 – 10/2022 Trento, Italy

STORYTELLER ARDITODESIO / UNIVERSITY OF TRENTO

I'm one of the founding members of Progetto Apollo, a scientific divulgation group operating at the University of Trento in collaboration with Arditodesio. Some of our activities include research on a key topic or an interview with a Professor at the University of Trento to write narratives with the principles of storytelling. The narratives were then performed in the course of various editions of Teatro della

Meraviglia, EIT RAW Materials 2021, CO.SCIENZA Festival 2019, Focus Days 2019 and Fisicità 2017. In 2022 we partnered with Caltech for the event "La Terra fatta dagli umani" (Earth made by humans) about the beginning of the Anthropocene. The narratives were presented both in Trento and at Caltech.

06/07/2015 – 31/07/2015 Trento, Italy

INTERNSHIP FBK - FONDAZIONE BRUNO KESSLER

The task of our two-student team was to study the effects of different NaCl concentrations on the contact angle between water droplets and various substrates (Borosilicate, Aluminium, and Soda-Lime Glass). The analysis was conducted both in the static regime, where droplets were studied at deposition and in the dynamic regime where we analyzed the contact angle as a function of time. The experience ended with a presentation held in the context of "Notte dei Ricercatori 2015".

● EDUCATION AND TRAINING

01/11/2023 – CURRENT Italy

PHD IN PHYSICS University of Trento

Supervisor: prof. Luca Tubiana

Scholarship: *Combining physics, biology and machine learning to understand genome organization in cancer cells*

Level in EQF EQF level 8

09/2020 – 03/2023 Trento, Italy

MASTER'S DEGREE IN PHYSICS Università degli Studi di Trento

Statistical Biophysics path with a focus on computational methods.

Relevant courses:

- Quantum Computing and Quantum Machine Learning
- Advanced Computational Physics
- Experimental Methods
- Laboratory of Advanced Electronics (signal processing via FPGA)
- Multi-Scale Methods in Soft Matter Physics
- Statistical Mechanics and Statistical Field Theory.

Address Via Calepina, 14, 38122, Trento, Italy | **Website** <https://www.unitn.it/> | **Field of study** Physics |

Final grade 110/110 | **Level in EQF** EQF level 7 | **National classification** Laurea Magistrale | **Type of credits** CFU |

Number of credits 120 |

Thesis Computational Models Of Astrocyte-Neuron Dynamics To Explain The Formation Of Working Memory

02/2021 – 03/06/2021 Italy

CYBERCHALLENGE.IT - CERTIFICATE Università degli Studi di Trento in partnership with Laboratorio Nazionale di Cybersecurity (CINI)

During my master's degree, I took part in the CyberChallenge.IT (February-June 2021) a course designed to provide the methodological and practical basis to analyze vulnerabilities and possible attacks and identify the most suitable solutions to prevent them. Admission to the course followed the passing of three levels of tests that recorded an admission rate of 13.70%. The total duration of the course was 72 hours (24 hours of lecture and 48 hours of hands-on experiences) followed by a local final competition lasting 7 hours.

Website <https://cyberchallenge.it/halloffame/2019> | **Field of study** Information and Communication Technologies

09/2016 – 03/2020 Trento, Italy

BACHELOR'S DEGREE Università degli Studi di Trento

Relevant courses:

- Scientific Computing (fka Computer Science), Introduction to Machine Learning (fka Advanced Algorithms)
- Linear Algebra I, Analysis I, II, III, and Complex Analysis, Complementary Mathematics for Quantum Mechanics

- Physics I, II, and III, Analytical Mechanics, Quantum Mechanics
- Physics Laboratory I (measures), II (analogue electronics and optics), and III (digital electronics)
- Chemistry with Laboratory Sessions.

I took part in a Scientific Storytelling course twice during my bachelor's degree. This resulted in two 5-minute plays and the creation of the storytelling group Progetto Apollo. After graduating, I took part in the course Data Science for Physicists as a listener (March-June 2020).

Address Via Calepina, 14, 38122 , Trento, Italy | **Website** <https://www.unitn.it/> | **Field of study** Physics |

Level in EQF EQF level 6 | **National classification** Laurea Triennale | **Type of credits** CFU |

Number of credits 180 | **Thesis** Emergent features: from renormalization group to artificial intelligence

02/2019 – 04/2019

INNOVATION CAMP DIPLOMA University of Trento in partnership with Samsung

The first month was devoted to a 25h online course about the main topics of Industrial Innovation and a two-day intensive training course I was allowed to attend upon ranking among the best in the online test. The following months were used to develop a project work on a real business case.

Website <https://webmagazine.unitn.it/evento/ateneo/69296/samsung-innovation-camp> |

Field of study Business, administration and law

2011 – 2016 Rovereto, Italy

SCIENTIFIC HIGH SCHOOL DIPLOMA Liceo Antonio Rosmini (Rovereto, TN)

Chemistry, Physics, Latin (Language and Literature), Mathematics, Biology, History, Ethics, English (Language and Literature), and Italian (Language and Literature).

Personal accomplishment:

- Qualification to the regional phase of Chemistry Olympics and Physics Olympics.
- I took part in “Insieme per studiare” (tutoring at the high school level) for two years as a tutor.
- Two seven-day language study trips abroad (Liverpool and Broadstairs)

Address Corso Bettini, 86 - ROVERETO, 38068 , Rovereto, Italy | **Level in EQF** EQF level 4 |

National classification Diploma Liceo Scientifico | **Thesis** La concezione della scienza di Richard Feynman

● **LANGUAGE SKILLS**

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **ADDITIONAL INFORMATION**

DRIVING LICENCE

Driving Licence: B | 09/03/2017 – 30/04/2027

CONFERENCES AND SEMINARS

04/05/2023 – 05/05/2023 – University of Trento

Statistical Physics of Living Systems workshop This two-day workshop gathered the members of the SBP group at the University of Trento and the QLS group of ICTP in Trieste to present and discuss the work carried out within both groups intending to foster tighter collaborations, address open problems, and develop strategies for future joint activities. My contribution consisted of a presentation of my master's thesis work.

Link <https://sbp.physics.unitn.it/statistical-physics-of-living-systems-workshop>

TECHNICAL SKILLS

Advanced User

I've been using Python 3 since 2018 for various programming purposes. My main focus is on scientific packages (NumPy and SciPy), Data Science/Machine Learning packages (Pandas, Pytorch, Sklearn), and Data Visualization (Matplotlib both for plotting and animation, Jupyter Notebook with widgets, Quarto) but I also worked on projects requiring non-scientific-oriented packages like image recognition (OpenCV's wrapper opencv-python) and text recognition packages (Tesseract's wrapper py-tesseract).

When possible, I try to implement algorithms from scratch, therefore I'm also capable of avoiding the most frequent Python bottlenecks. If needed I can also work with object-oriented Python and type hints.

I can also use C to write performant code thanks to the experience I gained during the courses *Scientific Computing*, *Computational Physics*, and *Advanced Computational Physics*. The course *Cyberchallenge.IT* and other personal readings gave me the fundamental knowledge needed to understand how C code is translated into machine code.

Intermediate User

Intermediate user refers to programming languages and technologies that I can understand and use but are not my main focus.

- **Programming languages:** C++, Matlab, Java, Verilog.
- **Technologies:** Regex, SQL, Git, Linux command line (bash).
- **Markup languages:** LaTeX, Markdown (GitHub syntax).
- **Hardware:** Raspberry Pi, Arduino.

Beginner Users

Beginner user refers to programming languages and technologies that I've been exposed to and I'm confident I can learn in a short amount of time.

- **Programming languages:** Julia, Javascript, Mathematica, C#.
- **Markup languages:** Html, CSS.
- **Miscellanea:** Unity game engine, Gromacs.

Trento, 20/11/2023

Guido. Guller