



Giacomo Castagnetti

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I am a software enthusiast driven by a passion for biology and a relentless curiosity for learning.

Work experience

- **Summer student at Biozentrum** Jul – Sep 2023 | Basel, Switzerland
I was selected to participate in the Biozentrum Research Summer program together with other 12 excellent students across Europe. I joined the lab of [Richard Neher](#). My contributions to the lab included:
 - Developing an [innovative method](#) for tracking recombination in a population of bacteriophages: I leveraged the High-Throughput and efficiency of ONT sequencing data to characterize an entire population of heterogeneous phages at once. This method demonstrated to be as accurate as clone screening but tremendously faster. (see: <https://doi.org/10.1101/2025.04.16.649189>)
 - [Nextstrain workflow](#): track evolution and spreading of West Nile Virus.
 - Manual bacteriophage evolution experiment: performed **phage biology** wet lab techniques, and Oxford Nanopore MinION run.
- **Student assistant at Medically Assisted Reproduction centre** Jun 2019 | Reggio Emilia, Italy

Projects

- Phagos Hackathon: I used large protein and nucleotide foundation models to classify bacteriophage lifestyle.

Education

- **Master in Computational Biology and Bioinformatics** 2024 – 2026 | Zurich, Switzerland
Eidgenössische Technische Hochschule Zürich (**ETHZ**) **GPA: 5.1**
Combining rigorous training in computer science, mathematics, and biology, the program offers practical experience through lab rotations and mentorship to ensure a flexible, customized learning journey. Graduates are able to **approach and solve complex biological and data-driven problems**.
- **Bachelor in Genomics** 2021 – 2024 | Bologna, Italy
University of Bologna Final grade: 110/110 cum laude and honourable mention
Highly interdisciplinary bachelor which gave me theoretical foundations in statistics, programming, genetics and molecular biology. I acquired practical skills to tackle bioinformatics problems.
- **Scientific high school** 2016 – 2021 | Reggio Emilia, Italy Final grade: 100/100

Skills

- Languages: Italian, English
- Programming: Python, bash, R, HTML, CSS, C++, Snakemake, HPC, Git, Machine Learning (scikit-learn), Deep Learning (PyTorch), LLMs, mathematical modelling, AWS, SQL.