

Davide Colombo

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I'm a bioengineer. I have a dynamic and open-mind attitude and a strong work ethic. I'm interested in applying computational tools to understand complex biological interactions.

Work experience

Early team member at Switch Academy (switchacademy.com), Pavia

February 2022 - July 2022

Achievements

- developed story model for product launch
- implemented scalable workflow for data collection and analysis
- assessing candidates through resume screening and interviewing

Working in a startup has been a fantastic experience that constantly challenged me to adapt and learn new competencies. The most valuable acquisition has been thinking critically about the product, the problems it needs to solve, and its impact on people's lives.

Waiter at Molto Più, Pavia

September 2017 - November 2019

Working as a waiter has been a humbling experience that switched my way of relating to others; it improved my awareness and multitasking ability.

Education

Master's Degree in Bioengineering at the University of Pavia

September 2019 - April 2022

Thesis: *"Development of an infrastructure for the acquisition, storage, and processing of data from low-cost mobile and fixed air pollution sensors."*

Supervisor: Professor Cristiana Larizza

Final grade: 109/110

During my master's degree program, I took machine learning courses and applied computational modeling to biological problems. For instance, I developed a computer vision algorithm based on Convolutional Neural Networks (CNN) for classifying viral and bacterial pneumonia from chest X-rays in children using the TensorFlow framework in Python.

While following the course *"Bioinformatics and synthetic biology"*, I developed a basic computer program in C and Python that allows users to read a FASTA file and extract essential information from the genomic sequence, including CDS, introns, exons, UTR regions, transcription, and translation.

Following the "*Advanced Machine Learning and Artificial Intelligence*" course with co-teacher Professor John Holmes from Pennsylvania University, I learned the "R" language and applied it to data analysis problems, including artificial protein classification and bulk RNA-seq data.

Bachelor's Degree in Bioengineering at the University of Pavia

September 2016 - September 2019

Thesis: "*Pharmacokinetic and pharmacodynamic models of Interaction between antibiotic drugs and Bacteria.*"

Supervisor: Professor Paolo Magni

Final grade: 104/110

The bachelor's degree program was centered on mathematical and informatical courses. During these years, I enjoyed the many hours spent with colleagues working in teams on various informatics projects.

The course on mathematical modeling applied to biology in the third year interested me the most.

For instance, I learned how to model enzymatic reactions and use Matlab to make simulations and estimate the model's parameters.

Additionally, I learned about pharmacokinetic and pharmacodynamic models.

I decided to focus my thesis project on modeling interactions between bacteria and drugs to understand better how bacteria can develop antibiotic resistance.

Languages

Italian: *native speaker*

English: *proficient*