Simone **Colli**

COMPUTER SCIENCE STUDENT

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Education

University of Parma   *Parma, Italy*
MASTER'S DEGREE IN COMPUTER SCIENCE   *Sept. 2024 - Expected July 2026*

University of Parma   *Parma, Italy*
BACHELOR'S DEGREE IN COMPUTER SCIENCE, GRADE: 108   *Sept. 2021 - july 2024*
Thesis title: A parallel algorithm for computing sequence homology in pangenomic analysis. Advisor Prof. V. Bonnici

havce CTF team, University of Parma   *Parma, Italy*
CYBERSECURITY COURSE   *2021 & 2024*
A cybersecurity training program for university and high school students organized by the Cybersecurity National Lab. (CyberChallenge.it)

Artistic roller skater   *Italy*
HIGH-LEVEL ATHLETE   *2007 - 2023*
I believe that sports, especially when practiced at a high level, can be considered a means of teaching; not purely under a professional perspective, but a personal one, because it teaches the values of organization, perseverance, patience, resilience, and many other skills that fall under the category of soft skills.

Experience

unipr-org
FOUNDER & MAINTAINER   *January 2024 - Present*
An organization that brings together University of Parma students to collaborate on open-source educational materials and projects. (github.com/unipr-org)

Freelance Tutor
IN-PERSON & ONLINE   *February 2022 - Present*
Provided tutoring services for university and high school students, Topics: C, C++, Java, Python, algorithms and data structures, web development.

Workshop: Use of Graphics Libraries for Software Implementation   *Parma, Italy*
UNIVERSITY OF PARMA   *June 16, 2025 - June 19, 2025*
Intensive bootcamp focused on the fundamentals of Python programming and the use of a graphics library. The learning path culminated in programming an application (the Pong game), providing participants with practical software development skills.

Tutor   *Parma, Italy*
UNIVERSITY OF PARMA   *February 2025 - June 2025*
Tutor of the "Sistemi operativi" bachelor course in the Computer Science degree.

Workshop: Tutoring from Different Perspectives and Supporting IT Tools   *Parma, Italy*
UNIVERSITY OF PARMA   *January 24 2025*
Presented and discussed the various perspectives (student, tutor, and lecturer) and related challenges concerning the role of a tutor

Tutor   *Parma, Italy*
UNIVERSITY OF PARMA   *September 2024 - December 2024*
Tutor of the "Ingegneria del Software" bachelor course in the Computer Science degree.

Internship
UNIVERSITY OF PARMA   *February 2024 - June 2024*
University internship focused on the development of parallel software for pan-genomic analysis. Languages used: C++, Python, Bash.

Tools and Softwares

Quantum Portfolio Optimization

Python *2025*

Development of a Python-based quantum portfolio optimization tool, leveraging the power of quantum computing to enhance portfolio management and investment strategies. The project explores the potential of hybrid algorithms VQE e QAOA, that combine classical and quantum computing, to solve Quadratic Unconstrained Binary Optimization (QUBO) problems. Simulations have been designed and implemented using Qiskit to evaluate algorithm performance under noiseless and noisy conditions. (github.com/simonecolli/quantum-portfolio-optimization)

Ottimizzazioni garanti accademici

ASP, Python *2024*

Development of an automated system for assigning academic guarantors to university courses, adhering to complex ministerial regulations. The project includes the creation of a data preprocessing pipeline and the implementation of a system based on Answer Set Programming (ASP) for dynamic optimization of resource allocation. The system ensures scalability across various datasets, reduces reliance on external staff, and meets institutional and regulatory requirements. (github.com/simonecolli/ottimizzazione-garanti-accademici)

PanDelos-plus

C++, Python, Bash *February 2024 - June 2024*

A C++ based, parallelized revision of PanDelos (github.com/InfOmics/PanDelos) software for pan-genome content discovery. (github.com/simonecolli/PanDelos-plus)

Deep Neural Network Library

C++, Python *From May 2024*

A flexible, modular, easy-to-use, and high-performance C++ library for building, training, and using deep neural networks. (github.com/unipr-org/deep-neural-network)

MazeProject

HTML, CSS, JS *From July 2022*

A user-friendly web-based application developed for the European Research's Night, aimed at making the understanding of graph-based search algorithms more interesting, easier, and enjoyable. (github.com/simonecolli/MazeProject)

Certificates

2022	**Responsive Web Design**, FreeCodeCamp
now	**Data Visualization**, FreeCodeCamp

Conferences

BBCC-Meetings *Napoli*

BBCC2024 *27-29 novembre 2024*

Oral presentation of PanDelos-plus.

Technical Skills

Main programming languages	C++, Python, Java, JavaScript, HTML, CSS, Bash
Other programming languages	C, C#, Objective-C, PHP, LaTeX, Markdown, StrictDoc, Matlab, YAML
Databases	MySQL, PostgreSQL
Operating systems	Windows 8/10/11, Windows Server 2019, Linux, macOS
Development environments	Visual Studio Code, Eclipse, Android Studio, Xcode, Jupyter Notebook, Google Colab
Frameworks and tools	React, Vue.js, Next.js, Laravel, Flask, JQuery, Bootstrap, Tailwind CSS, nginx, Apache Web Server, Git, Docker, Kuber Oracle VirtualBox, Masterwood, AutoCAD
Creative software	Microsoft Office, Darktable, Adobe Lightroom Classic, Adobe Photoshop, Adobe Illustrator, Adobe Premiere Pro, Da\ GIMP, Audacity
Soft skills	Problem solving, Critical thinking, Time management, Organization, Teamwork, Collaboration, Creativity, Adaptabi Stress management, Self-development, Resilience, Patience, Punctuality, Perseverance
Languages	Italian (Native), English (Intermediate)