

Antonio Collesei

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Professional Summary

Highly motivated Researcher in Bioinformatics with hands-on experience in designing, developing, and evaluating Machine Learning/AI, and Deep Learning models applied to complex biomedical data. Strong computational background (Ph.D. in Bioinformatics) with proven ability to implement end-to-end AI/ML pipelines in Python using the most common major frameworks. Experienced in model optimization, data analysis, and technical documentation, and comfortable collaborating within multidisciplinary teams. Currently exploring options outside the academic setting. Interested to contribute to innovative AI algorithms in a challenging and competitive environment, with a deep interest in the translational potential of LLMs and their applications. In my personal website you can find recent projects and contributions, as a showcase.

Current Position

Researcher in Bioinformatics

Since Oct 2023

Veneto Institute of Oncology (IOV-IRCCS), University of Padova

Education and Employment

Ph.D. in Bioinformatics

Oct 2020 – May 2024

Cum Laude

University of Padova

Supervisor: Prof. Fabio Vandin

Master in Big Data Analysis for Biomedical Research

Oct 2019 – Sep 2020

University of Padova

Supervisor: Prof. Fabio Vandin

Biomedical Engineer

Sep 2018 – Sep 2020

Inventis s.r.l.

International technical relations (North America, Continental Europe)

Stage

Feb 2018 – Aug 2018

NGS s.r.l.

Development of tailored cybersecurity solutions

Research Fellowship

Mar 2017 – Nov 2017

Medical University of Innsbruck

Supervisor: Prof. Zlatko Trajanoski, Prof. Francesca Finotello

M.Sc. in Bioengineering

Dec 2015 – Dec 2017

University of Padova

Thesis Supervisor: Prof. Barbara Di Camillo

B.Sc. in Information Engineering

Sep 2012 – Nov 2015

University of Padova

Thesis Supervisor: Prof. Gianna Maria Toffolo

Technical Skills

Machine Learning & AI

- Design, development and optimization of robust and scalable AI/ML solutions.
- Experience with core ML libraries in python: **Scikit-Learn**, **Matplotlib**, **Plotly**.
- Additional programming experience with **R**.
- Experience with deep learning and NLP frameworks: **PyTorch**, **Hugging Face Transformers**.
- Knowledge of evaluation metrics for AI/ML model assessment.
- Understanding of generative models and LLM theory.

Software Engineering

- Proficient with version control systems: **Git**.
- Experience with containerization and virtualization tools: **Docker**, **Singularity**, and package management: **Conda/Mamba**.
- Development in HPC environments: **CUDA**.

Cloud & Big Data Ecosystems

- Familiarity with cloud platforms supporting AI development: **AWS**, **Azure**.

Documentation & Communication

- Experience producing and maintaining technical documentation and pipelines.
- Strong presentation and communication skills acquired through worldwide congresses.

Certifications

Professional Practice License (Esame di Stato) as Information Engineer (2021)

IELTS English C1-Level (2019)

Selected Publications (2020-2025) - current *h*-index: 4 (Scopus, Dec 2025)

* denotes equal contribution

SHISMA: SHape-driven Inference of Significant celltype-specific Subnetworks from tiMe series single-cell trAnscriptomics Under Review

Antonio Colleseⁱ, et al.

Bioinformatics

Development of two machine-learning models to predict conversion from primary HER2-0 breast cancer to HER2-low metastases: a proof-of-concept study Dec 2024

Federica Miglietta^{}, Antonio Colleseⁱ^{*}, et al.*

ESMO Open

ALLSTAR: inference of reliAble causal ruLes between Somatic muTations and cancer phenotypes Jul 2024

Dario Simionato^{}, Antonio Colleseⁱ^{*}, Federica Miglietta, Fabio Vandin*

Bioinformatics 10.1093/bioinformatics/btae449

Which extra-renal flare is 'difficult to treat' in systemic lupus erythematosus? A one-year longitudinal study comparing traditional and machine learning approaches Feb 2024

Michele Maffi, [...], Antonio Colleseⁱ^{}, Marta Mosca^{*}*

Rheumatology 10.1093/rheumatology/kead166