Antonio Collesei, Ph.D.

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https://antoniocollesei.github.io/

I am currently a **Researcher** at the Veneto Institute of Oncology, part of the **Bioinformatics Unit**. Since 2024, I have been affiliated to **Silvio Bicciato Lab** at the University of Padova. From 2020 to 2023, I have been member of **Fabio Vandin Lab**.
My main focus is the development of algorithms and models to extract relevant and reliable information from cancer big data, and the analysis of omics datasets to unveil meaningful biological mechanisms.
My area of expertise spans from genomics to single-cell RNAseq, as well as spatial transcriptomics.
I have previous experience in the **private industry** sector as Engineer.

Employment History

2023 – · · · · **Researcher,** Veneto Institute of Oncology.
2018 – 2020 **Product Engineer,** Inventis Audiology Equipment.

Education

2020 – 2023 **Ph.D., University of Padova, Italy** in Bioinformatics
Thesis title: *ALLSTAR: A Novel Bioinformatic Algorithm to Infer Causal Rules between Somatic Mutations and Cancer Phenotypes.*

2019 **Professional Master's Degree** in Health Big Data Analysis
Research project: *Neural Network Model to Predict Treatment Response in Cancer Cell Lines.*

2017 **ERASMUS+, Medical University of Innsbruck**
Research period abroad in *Zlatko Trajanoski Lab.*

2015 – 2018 **M.Sc., University of Padova** in Bioengineering
Thesis title: *Quantifying immune contexture of tumors using imaging and sequencing data.*

2012 – 2015 **B.Sc., University of Padova** in Information Engineering
Thesis title: *Statistical Models of HIV Epidemiology.*

Skills

Languages Strong reading, writing and speaking competencies for English (C1). Basic conversational level for Spanish (B1) and German (A2). Mother tongue: Italian.

Coding Python, R, BASH, LaTeX

Data Types Genomics, RNAseq, Single-Cell Transcriptomics, Spatial Transcriptomics and Imaging, Observational Studies, Clinical Trials Databases.

Technical Predictive Modeling, Statistical Learning, Unsupervised Learning, Algorithmic Reasoning, GWAS Population Studies.

Soft Public Speaking, Effective Presentations, Teamwork, Social Skills, Unlimited Eating and Drinking at Buffets.

Conferences

Talks

2023 **CIBB** Padova, Italy.
ISMB/ECCB Lyon, France.

Poster

2024 **AI4H**, Padova, Italy.
2023 **ISMB/ECCB** Lyon, France.
RECOMB Istanbul, Turkey.

Committee

2021 **RECOMB**, Virtual
Poster evaluation committee.

Miscellaneous

Supervisor Activity

2022 **Paola Donolato** M.Sc. in Computer Engineering, University of Padova
Thesis: *Investigation of the usage of Rademacher Averages for causal rule discovery*.

Reviewer Activity

since 2021 **RECOMB Conference**

Certifications

2021 **Professional Practice License as Information Engineer**.
2019 **IELTS: C1**.

Awards and Grants

2022 **Best Ph.D. Project Presentation**, University of Padova.
2017 **Research Grant**, Medical University of Innsbruck.

Research Publications

1. D. Simionato, A. Collesei, F. Miglietta, and F. Vandin, "Allstar: Inference of reliable causal rules between somatic mutations and cancer phenotypes," *Bioinformatics*, vol. 40, no. 7, 2024. DOI: https://doi.org/10.1093/bioinformatics/btae449.
2. M. Maffi, C. Tani, G. Cascarano, *et al.*, "Which extra-renal flare is "difficult to treat" in systemic lupus erythematosus? a one-year longitudinal study comparing traditional and machine learning approaches," *Rheumatology*, kead166, 2023. DOI: https://doi.org/10.1093/rheumatology/kead166.
3. L. Scagnellato, A. Collesei, A. Doria, *et al.*, "Comorbidities in the spondyloarthritis gisea cohort: An average treatment effect analysis on patients treated with bdmards," *Clinical and experimental rheumatology*, pp. 1–1, 2023. DOI: https://doi.org/10.55563/clinexprheumatol/q38lu0.

4 M. Fassan, A. Collesei, V. Angerilli, *et al.*, "Multi-design differential expression profiling of covid-19 lung autopsy specimens reveals significantly deregulated inflammatory pathways and sftpc impaired transcription," *Cells*, vol. 11, no. 6, p. 1011, 2022. DOI: https://doi.org/10.3390/cells11061011.

References

Prof. Fabio Vandin
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