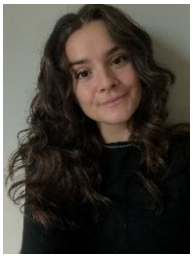
Alisa Kumbara

PhD student in Intelligent Systems Engineering,
Department of Medicine for Innovation Medicine
University of Verona



Contacts

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GitHub: alisakumbara
Linkedin: Alisa Kumbara

Languages

Albanian: Mother Tongue
Italian: Mother Tongue
English: B2

Computational Skills

Python, R, shell scripting, Linux environment, bash, Latex

Research Interests

Genome Editing, Computational Biology, Epigenomics, and Machine Learning.

About me

PhD student in Intelligent Systems Engineering at the University of Verona, specializing in computational approaches to explore genetic variation at both population and individual levels. My research focuses on developing algorithmic tools for large-scale genomic data analysis. I have a solid background in bioinformatics, with particular interests in genome editing, computational biology, and epigenomics.

Education

2024 - ONGOING
PhD | University of Verona
PhD in Intelligent Systems Engineering.
Department of Engineering for Innovation Medicine.

2022 - 2024
Master's Degree | University of Verona
Master's degree in Medical Bioinformatics
Final grade: 109/110
Thesis: Unveiling Transcription Factor Binding Sites (TFBSs) through Position Weight Matrices (PWMs) and Support Vector Machines (SVMs).
Supervisor: Prof. Rosalba Giugno (University of Verona)
Co-supervisor: Manuel Tognon (Postdoctoral researcher, University of Verona)

2019 - 2022
Bachelor's Degree | Polytechnic University of Marche
Bachelor's Degree in Biomedical Engineering
Final grade: 99/110
Thesis: Development of metrics based on EEG signals for the analysis of sound quality.
Supervisor: Prof. Milena Martarelli (Polytechnic University of Marche).

2014 - 2019
High School Diploma | ITES "R. Valturio", Rimini
Economic State Technical Institute "Roberto Valturio", Rimini
Final grade: 100/100

Conferences

June 11-13, 2025

Bioinformatics Italian Society - BITS

CRISPR-HAWK: Haplotype- and variant-aware guide design toolkit for CRISPR Cas

June 11-13, 2025

Bioinformatics Italian Society - BITS

Benchmarking PWM and SVM-based Models for Transcription Factor Binding Site Prediction: A Comparative Analysis on Synthetic and Biological Data

July 20-24, 2025

International Society for Computational Biology – ISCB

CRISPR-HAWK: Haplotype- and variant-aware guide design toolkit for CRISPR-Cas

July 20-24, 2025

International Society for Computational Biology – ISCB

Benchmarking Transcription Factor Binding Site Prediction Models: A Comparative Analysis on Synthetic and Biological Dat

Presentation at Conferences

June 11-13, 2025

Bioinformatics Italian Society - BITS

CRISPR-HAWK: Haplotype- and variant-aware guide design toolkit for CRISPR Cas (Flash Talk)

Summer Schools

July 13-19, 2025

Lipari Summer School on Computational Life Sciences

RNA Biology and Comparative Genomics for Medicine

Aug. 31 - Sept 6, 2025

AIS Summer School

Advanced School on AI and Intelligent Systems: Design, Engineering, and Architectures

Tutoring and Teaching Activities

2025

TUT-DIMI-24-06: LM-32 Computer Engineering for Intelligent Systems

Teaching Assistant for orientative tutoring,
Department of Engineering for Innovation Medicine, University of Verona

2025

PNRR Project: "Nuove competenze e nuovi linguaggi STEM"

Teaching Expert on "Bioinformatics and Data Science" Course, I.T.C. Copernico, Verona

Publications

Tognon, M., **Kumbara, A.**, Betti, A., Ruggeri, L., & Giugno, R. (2025). Benchmarking transcription factor binding site prediction models: a comparative analysis on synthetic and biological data. Briefings in bioinformatics, 26(4), bbaf363. https://doi.org/10.1093/bib/bbaf363