Abou Bakr Essadiq REDJIL

Trieste, Italy
Personal Website
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Education

International School for Advanced Studies (SISSA) 09/2024 – 03/2026
Masters in High Performance Computing *Trieste, Italy*

The International Centre for Theoretical Physics (ICTP) 09/2023 – 08/2024
Postgraduate Diploma in Quantitative Life Sciences *Trieste, Italy*

University of Science and Technology Houari Boumediene 09/2021 – 06/2023
Masters in Theoretical Physics *Algiers, Algeria*

Workshops, Schools, and Conferences

Advanced School on Foundation Models for Scientific Discovery (ICTP) 07/2025
Interdisciplinary school on the usage of foundational models to solve scientific problems *Trieste, Italy*

Advanced School on Applied Machine Learning (ICTP) 05/2024 – 06/2024
Advanced school on theoretical notions in data science/ML *Trieste, Italy*

Youth in High Dimensions (ICTP) 05/2024
Interdisciplinary conference on high-dimensional statistical problems *Trieste, Italy*

Spring College on the Physics of Complex Systems (ICTP) 02/2024 – 03/2024
Intense one month school on the physics of complex systems *Trieste, Italy*

Projects

Numerical Study of the Approximate Message Passing Algorithm

Code for the AMP decoder in the context of channel coding.

Numerical Study of Sample Space Reducing Processes

Code for the SSR processes (i.e., Standard, Noisy, and Cascade), with Python bindings.

Detecting Phase Transitions in the Ising Model

Unsupervised learning techniques on two dimensional Ising model to detect the phase transition.

Skills

Programming: Fortran, C, C++, Python, Bash
HPC & Parallel Computing: OpenMP, MPI, CUDA, OpenACC, Slurm, Docker
Machine Learning Frameworks: PyTorch, Scikit-learn, Hugging Face, Unsloth
Data Analysis & Visualization: Pandas, Scipy, Matplotlib, Seaborn, Gnuplot
Scientific Tools: CMake, Make, Linux, Git/GitHub/GitLab, LaTeX, Jupyter
Techniques: PCA, t-SNE, K-means, Random Forest, UMAP, VAE, CNN, Deep Learning

Languages

Languages: English (Fluent), French (Advanced), Arabic (Native), Amazigh (Native)