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Supervisor	Julien Mozziconacci
Supervisor page	https://biophysique.mnhn.fr/fr/annuaire/julien-mozziconacci-9031
Host Institution	Muséum national d'Histoire naturelle (MNHN) https://www.mnhn.fr/en/scientific-research
Research Lab	Structure and Instability of Genomes https://biophysique.mnhn.fr/en
Research Team	Repeated DNA, Chromatin, Evolution https://biophysique.mnhn.fr/en/arche-9044

Project Title

Deep learning the histone code

Project Description

This project leverages cutting-edge deep learning models to unravel the histone code, which posits that histone modifications play a key role in regulating gene transcription. Advanced frameworks such as Enformer and Borzoi, which integrate chromatin modifications, gene expression and DNA sequence data, will be employed to enhance our understanding of processes such as cellular differentiation during development as well as the molecular basis of disease.

Keywords

deep learning, genome, chromatin

Description of the Host Research Lab

Research in the "Structure and Instability of Genomes" laboratory focuses on nucleic acids, their structures, dynamics and interactions with different cellular partners. Our studies aim to characterize, at the molecular level, the cellular functions associated with nucleic acids, in particular the molecular mechanisms of genomic instability, involved in various pathological and evolutionary processes. As part of these studies, we are developing new genome-selective strategies for the study or artificial control of these functions.

To submit your application, please send an email with the required documents to
msca-pf@sorbonne-universite.fr