I am seeking a motivated postdoctoral researcher to join my team, Analytical Genomics, at the Laboratoire de Biologie Computationnelle et Quantitative (LCQB), Sorbonne Université-CNRS. This position will focus on developing innovative computational methods for the functional classification of the vast array of Carbohydrate-Active Enzymes (CAZymes).

Our goal is to predict functions for proteins that are not yet classified in CAZy (http://www.cazy.org/), the leading international resource for glycobiology, which has provided high-quality annotations for nearly 30 years. CAZy manually classifies enzymes that assemble, break down, or bind polysaccharides, covering six major catalytic mechanisms—primarily hydrolases, lyases, and transferases—across nearly 500 enzyme families with well-conserved catalytic mechanisms and substrate-specific functions. Many crystallographic structures are available for these enzyme classes.

The postdoctoral researcher will develop algorithmic and AI-based approaches, leveraging protein sequences from genomes and metagenomes, as well as protein structures and structural models, to advance our understanding of enzyme functionality and enzyme evolution. Working within an interdisciplinary team that includes biochemists, structural biologists, and CAZy curators—who are experts in glycobiology—the successful candidate will contribute to creating a groundbreaking collection of functional data linked to millions of protein sequences involved in carbohydrate enzymatic activities. This work aims to enhance our fundamental understanding of enzyme functions and open new avenues for biotechnological innovation.

Background of the candidate:

Computer science, physics or mathematics.

Where:

The LCQB (http://www.lcqb.upmc.fr) is located in the heart of Paris (5th district) and is part of the Institut de Biologie Paris-Seine at Sorbonne Université-CNRS. The department is dedicated to interdisciplinary research and fosters a collaborative environment for geneticists, molecular biologists, synthetic biologists, physicists, mathematicians, and computer scientists. We benefit from a highly dynamic academic community both on campus and throughout the Paris area.

The postdoc will have computing access to the local (LCQB, Sorbonne Center for Artificial Intelligence) and national (supercomputer Jean Zay) computing resources for model prototyping, and scaling up production.

When:

The ideal date is 1rst of January, 2025.