



Ph.D./postdoc in structural bioinformatics and Molecular Dynamics

Job description

The Bio2Byte group led by Prof. Dr. Wim Vranken at the VUB in Brussels, Belgium, works on the prediction of protein characteristics, and the interpretation of these predictions in relation to life science problems such as molecular causes of human diseases or protein design (see <https://bio2byte.be/>).

We are now launching a project to investigate the relationships between the post-translational modifications (PTMs) of proteins, their subcellular location, and their biophysical characteristics in collaboration with UGent and UCL. We are looking for a researcher to join us and contribute to this project by working towards a better understanding of the effect of PTMs (*e.g.* phosphorylation) on protein conformation and dynamics. This position will be highly collaborative, working with researchers at the Bio2Byte group, as well as at the UGent and UCL, and will start with an extensive methodological study of the effect of such PTMs on the local interactions between amino acids using Molecular Dynamics (MD) approaches. This information should then enable PTM-aware sequence-based predictions of protein characteristics, such as backbone dynamics (DynaMine) or conformational propensities. The end goal of the project is to obtain proteome-scale insights in how the sequence, biophysical characteristics, PTMs and protein-protein interactions (PPIs) of proteins relate to their subcellular location, and make this information available to the community.

Our group is international, with close collaborations within and outside of Europe. We offer an open, dynamic and rewarding research environment, focused on team work and collaborations, that stimulates initiative taking, discussion and originality.

Profile

- You have a Master's or Ph.D. degree in sciences or engineering.
- You have extensive MD experience, especially in the in-depth interpretation of MD simulations, preferably at a large scale, and incorporating modified amino acids.
- You are experienced in Python, and can independently write code with version control (*e.g.* Git)
- You are a team worker, who enjoys solving problems in close collaboration with others.
- Additional advantageous skills are i) Creating MD topologies and/or using different force fields, ii) general structural bioinformatics and iii) machine learning.

What we offer

The position is immediately available, for 4 (PhD) or 2 years (postdoc). You will be located at the (IB)² Interuniversity Institute of Bioinformatics in Brussels (<http://ibsquare.be/>), Etterbeek VUB/ULB campus.

Applications and further information

Please contact Wim.Vranken@vub.be for additional information.

To apply, please fill in this online form: http://bit.ly/b2b_md, with a 15th of February 2021 deadline. You have to include 1) a CV including at least 2 contacts for references, 2) a cover letter briefly stating your background, as well as your motivation to apply for this position.