Freie Universität Berlin - Fachbereich Physik - Institut für Theoretische Physik / AG Clementi - Theoretische und rechnergestützte Biophysik

The Clementi's group in the Physics Department at Freie Universität Berlin seeks a postdoctoral researcher to work on the development and application of coarse-graining methodologies to study macromolecular dynamics with machine learning and experimental data, integrative structural biology, and membrane protein modeling. Our group works on the definition and implementation of strategies to study complex biophysical processes on long timescales. We use data-driven methods for systematic coarse-graining of macromolecular systems, to bridge molecular and cellular scales. We work on a theoretical formulation to exploit the complementary information that can be obtained in simulation and experiment, to combine the approximate but high-resolution structural and dynamical information from computational models with the “exact” but lower resolution information available from experiments.

Research assistant (postdoc) (m/f/d)

City: Berlin; Starting Date: At the earliest possible; Duration: 2 years; Renumeration: EG 13 TV-L FU; Reference number: WiMi_Einstein_Clementi; Closing date: 01/02/21

Working field

- use of machine learning approaches for transferable coarse-grained models of proteins and application to protein folding systems (WP7)
- application of specially developed approaches to define coarse-grained protein models with machine learning (WP8)

The project is part of the research of Clementi's group supported by the Einstein Foundation Berlin. The candidate will use machine learning approaches (both deep neural network architectures and kernel methods) to design representations and transferable energy models for proteins. Different resolutions will be explored. The models will then be used to study specific protein systems in collaboration with experimental groups.

Requirements

**Requirements: **
- Candidates must have a Ph.D. in Physics, Chemistry, Applied Mathematics, or related fields

**Desirable: **
- Previous experience with macromolecular modeling and molecular dynamics simulations.
- English language fluent, spoken and written.
- Excellent theoretical and practical experience with machine learning methods is desirable. In particular, the use of machine of machine-learning to define representations and high-dimensional potential energy surfaces for atomistic systems. Experience with deep neural networks and kernel methods is desirable.

Application

All applications (including a short cover letter outlining your background, a detailed CV including possibly some references, and all relevant certificates) quoting the **reference code** should be directed **no later than February 1st, 2021** preferably electronically in one PDF-file to: Mrs. Prof. Dr. Cecilia Clementi: **ammonlassen@physik.fu-berlin.de** or postal to

Freie Universität Berlin
Fachbereich Physik
Institut für Theoretische Physik
AG Clementi - Theoretische und rechnergestützte Biophysik
Mrs. Prof. Dr. Cecilia Clementi
Arnimallee 14
14195 Berlin (Dahlem)

With an electronic application, you acknowledge that FU Berlin saves and processes your data. FU Berlin cannot guarantee the security of your personal data if you send your application over an unencrypted connection.

Freie Universität Berlin is an equal opportunity employer.

More information at https://stellenticket.de/88095/BUA/
Offer visible until 01/02/21