Postdoctoral position in theoretical chemistry & machine learning at the University of New Brunswick

The group of Stijn De Baerdemacker in the Department of Chemistry at the University of New Brunswick, Canada has a postdoctoral position available.

Research in the De Baerdemacker group is situated around the development of electronic structure methods for finite-size and strongly correlated quantum many-body systems. Major research themes consist of geminal theory, beyond-integrability methods, density-matrix approaches, among others. More information on our research projects can be found on the website of the group.

The present research project is tailor made for a postdoctoral researcher at the interface of quantum chemistry and machine learning. In recent years, machine learning has emerged as a new player in the field of quantum many-body methods, providing accurate predictions of molecular properties at a fraction of the computational cost of traditional methods. However, in the majority of instances, it remains unclear what kind of chemistry the machine has actually learned to provide this accuracy. The main objective of the project is to connect contemporary machine learning techniques with modern electronic structure methods in order to allow for improved interpretability and cross fertilization.

The present position offers opportunities to perform theoretical and fundamental work on machine learning and modern electronic structure methods with state-of-the-art computational resources within an international collaboration.

Interested applicants should be holder of a PhD (awarded within the past five years) in chemistry, physics, computer science or a related field, and be highly motivated to work in an interdisciplinary environment. Experience in modern electronic structure methods and/or machine learning methods is an asset. Applicants are requested to provide

- a motivated cover letter,
- an extensive CV, including a list of publications,
- a short statement of research interests (max 2 pages),
- the e-mail address and telephone number of a minimum of 2 references.

to stijn.debaerdemacker@unb.ca. Applications will be reviewed starting April 1st, 2019 until the position is filled, starting earliest on September 1st, 2019. The position is for 1+1 year by mutual approval.

Established in 1785, the University of New Brunswick is one of North America's oldest public universities. UNB's outstanding quality and breadth of teaching, ranked areas of study, relevant research and innovative programs make it a leading national university. UNB has two main campuses, with a total enrollment of 12,000 students from more than 100 countries. Both campuses offer the comfort and security of a small community with the vibrancy of a bigger city. The Fredericton campus, one of the most beautiful in the country with its red brick, ivy-covered Georgian architecture and lush landscape, is located in the capital city, which has been ranked as one of the best places to live in Canada.