PhD scholarship to develop machine learning algorithms to improve the understanding of the Brugada syndrome

The AI Lab of the Vrije Universiteit Brussel invites applications for a PhD scholarship.

Context

The AI Lab of the Vrije Universiteit Brussel offers a strong research environment spanning a wide range of research topics such as reinforcement learning, game theory, natural language processing, evolution of speech, computational creativity, computational biology and knowledge representation and reasoning.

PhD topic

The PhD student will perform machine learning research in the context of computational biology, under the supervision of prof. dr. Pieter Libin and prof. dr. Bart Bogaerts. The research will be conducted in collaboration with an interdisciplinary team of geneticists, cardio clinicians, mental health experts and machine learning researchers. The research consists of the development and application of machine learning algorithms to investigate relationships between different biological datasets related to the Brugada syndrome, a genetic disorder in which the electrical activity within the heart is abnormal, and may lead to sudden cardiac arrest. As Brugada syndrome is a rare condition, the amount of available data is limited, and the overlap between the different datasets depends on patient compliance. Therefore, the student will focus on the development of new algorithms to deal with data sets of limited size and with missing variables, for instance by integrating background knowledge in the learning algorithms. Another important focus will be on the development of machine learning algorithms that enable the learning of explainable models. The PhD student will have access to datasets that originate from the aforementioned disciplines, each covering a different perspective of the Brugada syndrome.

Qualifications

To be eligible to apply for this position, applicants need to have or be close to obtaining an MSc degree in computer science.
While we do not request prior experience in computational biology for this position, we expect applicants to be interested in this problem domain. The applicant should also be willing to work in a multidisciplinary environment, collaborating with computer scientists, clinicians, geneticists and psychologists.
Applicants must be strongly motivated for doctoral studies; should possess the ability to work independently and perform critical analysis, and also have good levels of cooperative and communicative abilities. They must also have a very good command of English in writing and speaking, to be able to participate in international collaborations and to publish and present research results in international conferences and journals.

Offer
We offer employment as a full-time doctoral researcher.

As an employee of the Vrije Universiteit Brussel you will work in a dynamic, diverse and multilingual environment. Our green campus is located in the centre of Brussels, the lively capital of Belgium and Europe. Depending on your experience and academic merits you will receive a salary according to the official pay scales.
pitalisation insurance and free use of public transport for travel to and from work are standard employment benefits. We have extensive sporting facilities which are at your disposal and a nursery is within walking distance. More information is available at the VUB job website.

Contract: full-time research grant for one year, renewable on an annual basis for a maximum of four years. Extension of the contract is subject to the agreement of the doctoral committee. Remuneration is at the level of a full-time research assistant at a Flemish university (i.e. approximately € 2.000 net per month) depending on personal situation, and includes contributions for social security.

How to apply
The PhD candidate will be selected on the basis of their expertise, work experience, and qualifications. There is no application deadline. Applications will be evaluated continuously and the position will be filled as soon as a good candidate is found. Please apply via e-mail to pieter.libin@vub.be, with a one-page motivation letter explaining the candidate's interest in pursuing a PhD on the chosen topic and a curriculum vitae listing all academic qualifications, relevant research experience and previous publications.