PhD Student position

Department: LA21 - Department of Plants and Crops
Contract: Limited duration
Degree: Master's degree in Computer Science, Bioscience Engineering, Bioinformatics, Mathematics or Physics
Occupancy rate: 100%
Vacancy type: Research staff

Job description

PhD in cost-effective genomic selection strategies

Predictive Breeding is a young and ambitious research group that is focused on the development and application of data-driven plant breeding methods. This is a rapidly evolving domain of science that aims to integrate high-throughput phenotyping and genotyping technology to maximise the rate of genetic progress for traits of agronomic importance. In this respect, scientific advancement in the field of data-driven breeding is considered to be a pivotal catalyst for the short-term realisation of the European Green Deal ambitions and the transition towards a sustainable agri-food system.

Your PhD research is centred around the concept of genomic selection which involves the prediction of the agronomic performance of plants directly from their DNA code. This selection technique allows to routinely screen the potential of thousands of plants before they even emerge from their seed. However, the cost-effective application of genomic selection remains challenging and low-cost genotyping and phenotyping strategies are much needed. Your role is to devise, evaluate and implement cutting edge algorithms to enable low-cost genomic selection. You will be dealing with several aspects of designing and evaluating statistical and mathematical models, machine learning, optimization techniques, software development, simulation, etc. This position is therefore an excellent opportunity to demonstrate and further improve your mathematical and engineering skills.

Job profile

- You hold a Master degree in Computer Science, Bioscience Engineering, Bio-informatics, Mathematics or Physics with excellent grades.

- You have strong analytical skills and you are eager to advance the state-of-the-art

- You have a pronounced interest in designing and implementing algorithms and prediction methods/models

- You have experience in one or more programming languages (R, Python, C++, …) and are willing to adapt to other languages and environments (e.g. Linux) if needed

- You are a team player and have strong communication skills.

- Your English is fluent, both speaking and writing. Knowledge of Dutch is considered a plus.

- Under the supervision of the leading professor, you will prepare a PhD dissertation over a duration of about 4 years. You will publish and present results both at international conferences and in scientific journals. This PhD position is available immediately and is open until the vacancy is filled. The position is not open for post-docs.

How to apply

Send your application by email or any questions concerning this vacancy to prof. Steven Maenhout (Steven.Maenhout@UGent.be), indicating "Application: Cost-effective genomic selection strategies" in the subject. Applications should include (1) an academic / professional resume, (2) a personal motivation letter, and (3) transcripts of study results, and (4) at least two reference contacts. After a first screening, selected candidates will be invited for an interview as a first contact in a multi-stage selection process.