



Jobbnorge-ID: 124473

Søknadsfrist: Avsluttet

Nettside:

Omfang:

Varighet:

Researcher in Neuroinformatics - Ref.no. 16/01964

There is an opening for a full-time limited-term position as researcher (code 1109) in neuroinformatics in the Computational Neuroscience Group at the Department of Mathematical Sciences and Technology of the Norwegian University of Life Sciences (NMBU) at Aas, just outside Oslo, the capital of Norway. The position is a part of and financed by the Human Brain Project (HBP), an EU FET Flagship Project with more than 100 partners that is expected to continue until 2023. The position is limited from 1 August 2016 to 31 March 2018; an earlier starting date may be negotiable.

The Department of Mathematical Science and Technology (IMT) at the Faculty of Environmental Sciences and Technology, has approximately 130 employees and 1100 students, and offers graduate and post-graduate education (Master of Technology / MSc and PhD) within a number of engineering fields.

Research Project

The Computational Neuroscience Group at IMT currently has two permanent faculty members (Einevoll, Plesser) and will host three staff members funded by the HBP plus staff funded by the Norwegian DigiBrain research project.

The Computational Neuroscience Group at IMT is responsible for four tasks in the next phase of the HBP:

- *Massively parallel methods for network construction from rules and data*
- *Whole brain level in silico instrumentation, services and apps*
- *Models of brain signals*
- *Simulator NEST as a Service*

Your work will focus on the first two tasks, researching concepts required to compactly specify brain-scale neuronal networks so that they are easy for the neuroscientist to review, and at the same time can be instantiated efficiently in a massively parallel fashion. You will further work on concepts that will allow domain specialists to configure complete in silico experiments on point-neuron-based whole-brain models by connecting stimulation and recording devices to specific neuron populations. You will develop strategies, algorithms and data representations required to minimize data exchange among parallel processes in the construction phase. The review of existing approaches in the literature and the continuous interaction with the community are essential components of this project.

We will collaborate closely with colleagues within the HBP, especially at the Institute for Neuroscience and Medicine 6, Research Center Jülich (FZJ), at the Swiss Federal Institute of Technology in Lausanne (EPFL), and at University of Oslo.

Our group is a core member of the NEST Initiative. We have access to some of the world's largest supercomputers and aim to develop simulation technology that will scale to the exascale.

Main tasks

You will develop specification schemes for connectivity of brain-scale neuronal networks and develop and implement highly parallel algorithms for generating these networks in the NEST simulator starting from existing technology such as the NEST Topology module and the Connection Set Algebra. You will also develop concepts that allow domain specialists to configure stimulation of and recording from in silico experiments. You will interact with computational neuroscientists and work closely with the NEST and HBP developer communities. This may require some travel.

Academic Qualifications

Required Academic qualifications

- MSc or equivalent and doctoral degree in informatics, physics, mathematics or computational science; candidates about to finish their doctoral degree may be eligible provided they have submitted their thesis.
- Documented scientific programming competence in C++ and Python, including experience in parallel programming (MPI, OpenMP)

Desired Academic qualifications

- Documented experience in computational neuroscience, preferably neuronal network simulations; experience with the NEST simulator can be an advantage

Personal skills

Required personal skills

- Excellent command of spoken and written English
- Experience with modern code development tools, especially version control and code review
- Good communication and collaboration skills

Desired personal skills

- Experience with software development under Linux/Unix

NMBU offers:

- An optimistic academic institution with focus on professional development, dissemination and competence.
- An interdisciplinary and inclusive environment that provides exciting research and development opportunities.
- Various welfare schemes.
- Beautiful surroundings just outside Oslo.

Remuneration

The position is placed in government pay scale position code 1109 Researcher, wage framework 24 (salary grade 57-62), depending on qualifications. Seniority promotion in the position.

Further information

For further information, please contact associate professor Hans Ekkehard Plesser, E-mail: hans.ekkehard.plesser@nmbu.no; phone +47 6723 1560

Application

To apply online for this vacancy, please click on the '**Apply for this job**' button above. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

Application deadline: **16 May 2016**

Key publications

Up to five publications selected by the applicant as most relevant must be attached to the application in electronic form. If it is difficult to identify the contribution of the applicant in multiple-author publications, a short explanation about the applicant's part of the work is suggested.

With your application, please submit a link to your public source code repositories, e.g. on GitHub or Bitbucket.

Verified testimonies, certificates

Applicants invited for an interview will be asked to present verified copies of diplomas and certificates.

The position follows the Norwegian government pay scale A compulsory contribution of 2 % is made to the Norwegian Public Service Pension Fund. A good working environment is characterized by diversity. We encourage qualified candidates to apply, irrespective of gender, physical ability or cultural background. The workplace will if necessary be facilitated for persons with disabilities.

According to the Freedom of Information Act § 25 the list of applicants for this position may be made public irrespective of whether the applicant has requested that his/her name be withheld.

Tilleggsinformasjon

Arbeidssted: