

Postdoctoral researcher:

BioExpert for the definition of biological systems in systems biology

Function title: Postdoctoral Researcher
FTE: 1,0 fte (38 hours per week) / 4 years
Available per: A.s.a.p.

About the position:

Project

Systems biology is rapidly developing as the scientific approach to understand complex biological systems consisting of a large number of components and their interactions. Experimental information about the components of the system and their interplay is used to develop and test mathematical models. The experimental work, biological knowledge and experimental data and computational models are cornerstones in an iterative cycle of data-driven modelling and model-driven experimentation in the Netherlands Consortium for Systems Biology (NCSB; www.sysbio.nl). A systems bioinformatics project is defined as part of the NCSB programme. In this project five bioinformatics centers collaborate to provide bioinformatics support to NCSB systems biology projects through the development of methods for data and knowledge management and through development, exchange, and computation of models. This bioinformatics project in turn entails collaboration with several experimental projects in the consortium. This project is also part of the BioAssist programme of the Netherlands Bioinformatics Centre (NBIC; www.nbic.nl). As part of the systems bioinformatics project the postdoc will work on the BioExpert (bioexpert.nl) project. The overall aim of the BioExpert project is to develop a framework to represent, integrate and present (curated) knowledge of specific biological systems and to use this information in subsequent modelling applications. The overall framework is based on state-of-the-art approaches for Information Management (e.g., RDF/OWL) and novel approaches for information (re)presentation (i.e., concept map network). The BioExpert knowledge base stores conceptual models that provide a comprehensive, accurate, and up-to-date description of selected biological systems to serve as input for mathematical modeling.

Tasks

Your main tasks are (a) acquisition of domain knowledge (biological, models and parameters, etc) for selected biological systems, (b) representation of this information in the current RDF/OWL framework, (c) construction of concept maps to (re)present this information (d) integration with systems biology markup languages (e.g., SBML, CellML, KISAO, Teddy, SBO) and modeling environments, (e) further development of the BioExpert application (user interface, navigation/querying, web-services to access data, visualization, etc) to enhance its use in systems biology.

Requirements

We are looking for an enthusiastic candidate with a background in (bio)informatics and or biology with a strong interest in information management research. The candidate is willing to combine research with substantial tasks in knowledge acquisition and software development in order to develop BioExpert into a functional systems biology tool.

The candidate should meet the following requirements:

- A PhD in a relevant scientific discipline (e.g., (bio)informatics);
- Experience with information management research;
- Excellent software developer (Java, Java frameworks (J2E, JENA, AJAX), web-applications/services).
- Knowledge of RDF and OWL;

- Experience with systems biology markup languages (e.g., SBML)
Sufficient social skills to perform optimally in a dynamic scientific team and willingness to collaborate with colleagues from other NCSB groups.

About the employer:

The University of Amsterdam (UvA) is a university with an internationally acclaimed profile, located at the heart of the Dutch capital. As well as a world centre for business and research, Amsterdam is a hub of cultural and media activities. The University of Amsterdam is a member of the League of European Research Universities.

The Faculty of Science of the University of Amsterdam (UvA) is one of Europe's foremost institutions for higher education and research in its chosen fields of specialization. It plays an active role in international science networks and collaborates with universities and industry. The Faculty has approximately 2,000 students and 1,500 staff members spread over four departments and ten research institutes. Each institute has its own research programme, a substantial part of which is externally financed by the Netherlands Organization for Scientific Research (NWO), the Dutch government, the EU and various private enterprises.

In 2010, the Faculty will relocate to Science Park Amsterdam. Ambitious building projects are paving the way for this relocation. The move will make the Park one of the largest centres of academic research in the Netherlands.

The Swammerdam Institute for Life Sciences (SILS) is one of the Faculty's largest institutes. Within it, approximately 250 scientists and staff members perform excellent research centred on four themes: 1) The Living Cell, 2) Plants and Health, 3) Inside and Beyond the Brain, and 4) Life Science Technologies. Institute members give advanced lectures and courses, while the SILS itself stimulates scientific cooperation between participating groups and colleagues all over the world.

Additional information:

Employment basis: Temporary for specified period

Duration of the contract: 3 years

Maximum hours per week: 38

Additional conditions of employment:

The appointment will be on temporary basis for a maximum period of three years. Based on a full-time appointment (38 hours per week), the gross monthly salary depends on the postdoc's expertise and experience. The collective employment agreement of Dutch universities is applicable.

Additional information about the vacancy can be obtained from:

Prof. A.H.C. van Kampen

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www.bioinformaticslaboratory.nl

www.bdagroup.nl

Contact:

Applications should include a detailed curriculum vitae and a letter of motivation, and send by email to a.h.vankampen@amc.uva.nl