Postdoctoral

Ecole/Institution/Société:
KTH Royal Institute of Technology, **Sweden / Stockholm**

Discipline:
Artificial Intelligence, Machine Learning

Type d'emploi::
Full-time

Date de publication:
2022-04-27

Personne à contacter:
If you wish to apply for this position, please specify that you saw it on AKATECH.tech

Postdoc in machine learning for cryogenic electron microscopy

KTH Royal Institute of Technology in Stockholm has grown to become one of Europe's leading technical and engineering universities, as well as a key centre of intellectual talent and innovation. We are Sweden's largest technical research and learning institution and home to students, researchers and faculty from around the world. Our research and education covers a wide area including natural sciences and all branches of engineering, as well as architecture, industrial management, urban planning, history and philosophy.

Job description

Single-particle cryogenic electron microscopy (cryo-EM) is a tomographic method for computationally recovering the 3D structure of a biomolecule from electron microscope imaging data, which is having profound impact on structural biology in general, and drug design in particular. Current 3D reconstruction methods only work for quite rigid biomolecules but these molecules often have inherent flexibility that is of interest in structural biology as changes in the atomic structure are crucial in determining function.

This postdoctoral research project will focus on developing data-driven priors of atomic models using domain-adapted neural networks trained on simulations obtained from molecular dynamics. These priors will then be used to estimate entire atomic model trajectories given cryo-EM data.

This position is part of a joint collaboration between the two largest research programs in Sweden, the Wallenberg AI, Autonomous Systems and Software Program (WASP) and the SciLifeLab and Wallenberg National Program for Data-Driven Life Science (DDLS), with the ultimate goal of solving ground-breaking research questions across disciplines.

Wallenberg AI, Autonomous Systems and Software Program (WASP) is Sweden's largest individual research program ever, a major national initiative for strategically motivated basic research, education and faculty recruitment.

The program addresses research on artificial intelligence and autonomous systems acting in collaboration with humans, adapting to their environment through sensors, information and knowledge, and forming intelligent systems-of-systems. The vision of WASP is excellent research and competence in artificial intelligence, autonomous systems and software for the benefit of Swedish industry. Read more: https://wasp-sweden.org/.

What we offer

- A position at a leading technical university that generates knowledge and skills for a sustainable future
- Engaged and ambitious colleagues along with a creative, international and dynamic working environment
- Works in Stockholm, in close proximity to nature
- Help to relocate and be settled in Sweden and at KTH

Qualifications

Requirements

- A doctoral degree or an equivalent foreign degree, This eligibility requirement must be met no later than the time the employment decision is made.
- Research expertise
- Experience with machine learning methods
- Creativity
- Independence
- Collaborative abilities

Preferred qualifications

- A doctoral degree or an equivalent foreign degree, obtained within the last three years prior to the application deadline
- Knowledge and experience of deep learning frameworks, such as PyTorch or TensorFlow
- Teaching abilities
- Awareness of diversity and equal opportunity issues, with specific focus on gender equality
- Great emphasis will be placed on personal competency.

Trade union representatives

You will find contact information to trade union representatives at KTH's webbpage.

Application

Log into KTH's recruitment system in order to apply to this position. You are the main responsible to ensure that your application is complete according to the ad.

The application must include:

- CV including relevant professional experience and knowledge.
- Copy of diplomas and grades from your previous university studies. Translations into English or Swedish if the original documents have not been issued in any of these languages.
- Brief account of why you want to conduct research, your academic interests and how they relate to your previous studies and future goals. Max two pages long.
- Your complete application must be received at KTH no later than the last day of application, midnight CET/CEST (Central European Time/Central European Summer Time).

About the employment

A position as a postdoctoral fellow is a time-limited qualified appointment focusing mainly on research, intended as a first career step after a dissertation.

Others

Striving towards gender equality, diversity and equal conditions is both a question of quality for KTH and a given part of our values.

Disclaimer: In case of discrepancy between the Swedish original and the English translation of the job announcement, the Swedish version takes precedence.

Type of employment: Full time

Contract type: Full time

Salary: Monthly salary

Number of positions: 1

Working hours: 100%

City: Stockholm

County: Stockholms län

Country: Sweden

Reference number: S-2022-0743

Contact: Joakim Andén, janden@kth.se

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