PhD student position in computational nanoimaging

Uppsala University is a comprehensive research-intensive university with a strong international standing. Our mission is to pursue top-quality research and education and to interact constructively with society. Our most important assets are all the individuals whose curiosity and dedication make Uppsala University one of Sweden’s most exciting workplaces. Uppsala University has 46,000 students, 7,300 employees and a turnover of SEK 7.3 billion.

The Department of Cell and Molecular Biology is one of the most international, broad and distinguished molecular bioscience departments in Europe. The department comprises seven research programs with about 130 employees. Please read more at (https://icm.uu.se).

MAX IV Laboratory is a Swedish national laboratory providing scientists with the most brilliant X-rays for research. With 35 years of experience operating the MAX I-III facilities it is now operating MAX IV, which was inaugurated in June 2016. Please read more at (https://maxiv.lu.se/).

The current position is located within the research group of Filipe Maia within the Molecular Biophysics (for more information see https://biox.io and https://lmb.icm.uu.se), but is seconded to the MAX IV Laboratory in Lund for at least 60% of the time.

Project summary
Since the times of Galileo Galilei and Robert Hooke, new imaging technology has been at the forefront of scientific discovery. Ptychography is a new fast-growing computational imaging technology, as it uses a computer instead of a lens to generate an image. It is an X-ray scanning microscopy technique, which provides structural and chemical information at the nanoscale. It achieves high-resolution by
using the full information contained in the light scattered by the sample, rather than being limited by the probe size as usual. But the data analysis required is significantly more complex, which is a barrier to the routine use of ptychography today. This project, a collaboration with MAX IV, aims to make ptychography as easy to use as a microscope by developing robust real-time ptychography reconstruction algorithms. The resulting algorithms will be tested and deployed at the NanoMAX and SoftiMAX beamlines opening the doors of this cutting-edge imaging technology to a much larger fraction of the scientific community and accelerating the pace of scientific discovery.

**Duties**
The Ph.D. student shall primarily focus on postgraduate studies, but other duties related to teaching and administrative work may be involved, up to a maximum of 20% of the time. Information about doctoral education, eligibility requirements and admission rules can be found at the faculty website, [http://www.teknat.uu.se/utbildning/utbildning-pa-forskarniva/](http://www.teknat.uu.se/utbildning/utbildning-pa-forskarniva/).

**Requirements**
We are looking for a motivated candidate with an academic degree at the Masters level in Physics, Biophysics, Computer Science or Applied mathematics. Due to the interdisciplinary nature of the project other areas may also be considered equivalent. Excellent knowledge of spoken and written English is an absolute requirement. Personal characteristics such as interpersonal skills, curiosity, a passion for discovery and independence are also important factors.

**Merits**
Knowledge of coherent X-ray imaging and previous programming experience are considered an advantage.

**Application**
Your application must include:

- A personal letter where you describe yourself, your research interest, your experiences and why you are interested in the position (max. 2 pages).
- A CV containing your education and other qualifications and a copy of diplomas, list of publications.
Candidates are encouraged to provide letters of recommendation or contact information to two reference persons.

Rules governing PhD students are set out in the Higher Education Ordinance chapter 5, §§ 1-7, and in Uppsala University's rules and guidelines [http://regler.uu.se/?languageId=1](http://regler.uu.se/?languageId=1).

**Salary:** According to local agreement for PhD students.

**Starting date:** As soon as possible or as otherwise agreed.

**Type of employment:** Temporary position of 4 years, according to the Higher Education Ordinance chapter 5 § 7.

**Scope of employment:** 100 %

**For further information about the position please contact:** Filipe Maia, tel: +46 70 425 0171, filipe.maia@icm.uu.se, for administrative questions contract Hr-generalist Frida Österdahl, tel. +46(0) 18471 4416, frida.osterdahl@icm.uu.se

**Please submit your application by December 4th 2020, UFV-PA 2020/3984.**

Are you considering moving to Sweden to work at Uppsala University? If so, you will find a lot of information about working and living in Sweden at [www.uu.se/joinus](http://www.uu.se/joinus). You are also welcome to contact International Faculty and Staff Services at ifss@uadm.uu.se.

Please do not send offers of recruitment or advertising services.

Submit your application through Uppsala University's recruitment system.

| Placement: Department of Cell and Molecular Biology |
| Type of employment: Full time, Temporary position longer than 6 months |
| Pay: Fixed salary |
| Number of positions: 1 |
Working hours: 100 %
Town: Uppsala
County: Uppsala län
Country: Sweden
Union representative: ST/TCO tco@fackorg.uu.se
Seko Universitetsklubben seko@uadm.uu.se
Saco-rådet saco@uadm.uu.se
Number of reference: UFV-PA 2020/3984
Last application date: 2020-12-04

Login and apply