UiT Norges arktiske universitet
Institutt for fysikk og teknologi

Jobbnorge-ID: 160359
Søknadsfrist: Closed
Nettside:
Omfang:
Varighet:

Postdoctoral Research Fellow (3 years) in Multi-Sensor and Deep Learning for Large-Scale Remote Sen

The Department of Physics and Technology announces a vacant position of Postdoctoral Research Fellow in the area of multi-sensor and deep learning for applications in large-scale remote sensing sea ice mapping at UiT The Arctic University of Norway, Faculty of Science and Technology.

The appointment is for a period of three years with the possibility of up to one year's extension.

The position is funded by the project *From Copernicus Big Data to Extreme Earth Analytics (ExtremeEarth)*, granted by the by Horizon 2020 under the H2020-ICT-2018-2020 call, and involves cooperation with The Norwegian Meteorological Institute and some highly ranked European research groups in remote sensing, computer science and machine learning.

The position is affiliated with the Department of Physics and Technology, Faculty of Science and Technology, UiT The Arctic University of Norway, and the research will be conducted in the *Centre for Integrated Remote Sensing and Forecasting for Arctic Operations (CIRFA)*.

The Department of Physics and Technology consists of five research groups: (1) Earth Observation, (2) Energy and Climate, (3) Machine Learning, (4) Space Physics, and (5) Ultrasound, Microwaves and Optics. The department provides education at the Bachelor, Master, and PhD levels, and comprises 21 permanent scientific employees, and a technical/administrative staff of 12 persons.

The successful candidates will work at CIRFA. CIRFA does research on integrated remote sensing for Arctic operations by developing data analysis methods and technologies for reliably characterizing and monitoring the physical environment of the Arctic. The Centre also explores methods to efficiently assimilate the derived information into models to perform improved predictions of sea ice state, meteorological and oceanographic conditions. See more at http://cirfa.uit.no/.

The ExtremeEarth project is about transforming the long time series of Synthetic Aperture Radar (SAR) and multispectral images acquired by the constellations of Sentinel-1/2/3 satellites into valuable information. The project shall investigate strategies and develop scalable deep learning algorithms for multi-sensor surface cover mapping based on Copernicus Big Data. Over the polar regions, this technology will be applied to perform long-term temporal and large-scale spatial characterization of the sea ice cover and its complicated internal dynamics.

Further information about the position, UiT and project details is available by contacting:

- Professor Torbjørn Eltoft by email torbjorn.eltoft@uit.no,
- Associate Professor Andrea Marinoni by email andrea.marinoni@uit.no, or
- Associate Professor Anthony Doulgeris by email anthony.p.doulgeris@uit.no.

The position's field of research and other duties
The position will be devoted to research and development tasks related to the Polar use case of the ExtremeEarth project. The work will be synchronized with ongoing research in CIRFA, and will include establishing training data sets and selecting architectures for effectively fusing the spatial, spectral, temporal, and multimodal properties of Sentinel data.

The candidate will participate in research on:

- SAR and optical data fusion: developing methods for sea ice monitoring combining diverse sources, particularly with Sentinel 1 & 2;
- Multi-sensor data analysis for automatic information extraction about sea ice characteristics;
- Multiresolution feature extraction for effective classification of remotely sensed data in polar regions;
- Machine learning for upscaling information in multiresolution data processing;
- Development of deep learning techniques for sea ice detection, classification, and characterization;
- Large scale (Big Data) processing of multi-sensor records.

The position can possibly include teaching or equivalent duties for UiT of up to 25 % of the position, implying corresponding extension of the position of up to one additional year.

Qualification requirements
This position requires a Norwegian doctoral degree within a field relevant for the research theme of the position (i.e. physics, machine learning, mathematics, statistics, or computer science), or a corresponding foreign doctoral degree recognised as equivalent to a Norwegian doctoral degree.

We are looking for a strongly motivated person, who has an excellent academic record and potential, with analytical and problem-solving skills. The suitable candidate should have expertise in:

- machine learning and/or deep learning;
- computer science and programming;
- remote sensing and big data analysis;
- image processing and statistics.

Moreover, the candidate should show a good command of English, both spoken and written.

The following skills would also be advantageous:

- Principles of information theory;
- Previous experience with sea ice remote sensing;
- International experience.

Since the position possibly entails teaching, teaching experience can be considered an advantage.

We are seeking a candidate who is independent, flexible, creative, and committed to the job. Emphasis is given to personal suitability.

Application
Your application must include:

- Application and motivation letter (max 1 page)
- CV (max 2 pages)
- Form for documentation of teaching qualifications
- Description of your past research project and its relevance to the advertised position (max 1 page)
- Description of your academic production (track record) including highlights of three most important works for the advertised position (max 1 page)
- Academic works, up to ten. The doctoral thesis is regarded as one work
- Diplomas and transcripts
- Three references, preferably including the PhD supervisor

Having a PhD degree is required before commencement in the position. If you are in the process of completing your PhD, you must document that you have submitted your PhD thesis by the application deadline and attach a statement from your supervisor concerning termination of your PhD studies.

All documents must be in English or a Scandinavian language. The application must be submitted electronically through Jobbnorge.

We offer
We offer an interesting project funded by EU Horizon 2020, opportunities to travel and meet other leading scientists within the field, independence in work, a fantastic work environment with nice colleagues, good remuneration, and a cosy hometown of Tromsø surrounded by the stunning landscape of Northern Scandinavia.

UiT also has good welfare arrangements for employees including beneficial arrangements for pension and insurances.

Remuneration of Postdoctoral Fellow positions are in salary code 1352. The starting salary is at a minimum 42 900 NOK/month in 2018. There is a 2 % deduction for contribution to the Norwegian Public Service Pension Fund. In addition, UiT pays 12 % directly to the pension fund on top of the salary.

The objective of the appointment as a Postdoctoral Fellow is to qualify for work in senior academic positions, and no one may be appointed to more than one fixed term period at the same institution.

More information about moving to Norway: http://uit.no/mobility

General
We make the appointment in accordance with the regulations in force concerning State Employees and Civil Servants and guidelines at UiT. At our website, you will find more information for applicants.

UiT The Arctic University of Norway has HR policy objectives that emphasize diversity, and encourages all qualified applicants to apply regardless of their age, gender, functional ability and national or ethnic background. The university is an IW (Inclusive Workplace) enterprise, and we will emphasize making the necessary adaptations to the working conditions for employees with reduced functional ability.

We process personal data given in an application or CV in accordance with the Personal Data Act. You may request to not be registered on the public list of applicants, but the University may decide that your name will be made public. You will receive advance notification in the event of such publication.

We look forward to receiving your application!

Tilleggsinformasjon

Arbeidssted: