Jobbnorge ID: 220019
Deadline: 2/25/2022
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Project

The Department of Engineering Cybernetics has a vacancy for a PhD position

The project HYPSCI - Observational Pyramid with Hyperspectral Nano-Satellites for Ocean Science

This is NTNU

NTNU is a broad-based university with a technical-scientific profile and a focus in professional education. The university is located in three cities with headquarters in Trondheim.

At NTNU, 9,000 employees and 42,000 students work to create knowledge for a better world.

You will find more information about working at NTNU and the application process here.

Video: https://youtu.be/Xt-yHCN5QS0

About the position

We have a vacancy for a PhD position for the project HYPSCI - Observational Pyramid with Hyperspectral Nano-Satellites for Ocean Science.

The HYPSCI project's overall objective is to show that hyperspectral imaging from small satellites, in combination with low altitude and in situ observations from buoys, ships and autonomous vehicles, provide a highly effective approach to marine ecosystem research relevant from pole to pole and in different temporal and spatial scales. The project aims to demonstrate the potential of this disruptive concept of an observational pyramid by leveraging NTNU's unique satellites with hyperspectral imagers (HYPSO) and NTNU's long-term research and infrastructure within its Center of Excellence on Autonomous Marine Operations and Systems (AMOS). The project brings together a team of leading scientists with expertise in remote sensing, autonomous systems, hyperspectral imaging, small satellite systems, ocean modelling, bio-optics, bio-geo-chemistry and ecology.

The physics and biology - for instance, algal blooms - of the ocean can be simulated using ocean models. However, models are uncertain, and better accuracy can be achieved by using observations to correct their state. The HYPSO satellite provides hyperspectral image data, a new source of measurements with great potential for observing ongoing algal blooms and other ocean phenomena.

This position is for a PhD candidate who will work on ocean modelling and assimilation of HYPSO data as a member of the HYPSCI team. The position reports to Associate Professor Morten Omholt Alver, who will be the main supervisor.

Duties of the position

For a position as a PhD Candidate, the goal is a completed doctoral education up to an obtained doctoral degree.

The PhD candidate will work on a range of challenging and interesting tasks:

- Take part in an interdisciplinary team working on ocean observation through satellite based remote sensing, drones, surface units, underwater units and models
- Ensemble simulations, data fusion and data assimilation
- Improve and exploit the ocean model SINMOD for real time ocean observation

Required selection criteria

- You must have a professionally relevant background in engineering cybernetics, ocean modelling, numerical mathematics/statistics, or similar.
- Your education must correspond to a five-year Norwegian degree programme, where 120 credits are obtained at master's level.
- You must have a strong academic background from your previous studies and an average grade from the master's degree program, or equivalent education, which is equal to B or better compared with NTNU's grading scale. If you do not have letter grades from previous studies, you must have an equally good academic basis. If you have a weaker grade background, you may be assessed if you can document that you are particularly suitable for a PhD education.
- You must meet the requirements for admission to the faculty's doctoral program (https://www.ntnu.edu/ie/research/phd).

The appointment is to be made in accordance with the regulations in force concerning State Employees and Civil Servants and Regulations concerning the degrees of Philosophiae Doctor (PhD) and Philosodophiae Doctor (PhD) in artistic research national guidelines for appointment as PhD, post doctor and research assistant

Preferred selection criteria

Useful qualifications for candidates are:

- Numerical modelling
- Estimation theory
- Statistics
- Programming (e.g. Python, Matlab, Fortran)
- Physical and biological oceanography
- Good written and oral English language skills. Norwegian language skills are an advantage, but not required.

Personal characteristics

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, as well as motivation, in terms of the qualification requirements specified in the advertisement. The following personal characteristics are desired:

- Problem solver
- Focused on results
- Good communicator
- Willing to learn

We offer

- exciting and stimulating tasks in a strong international academic environment
- an open and inclusive work environment with dedicated colleagues
- favourable terms in the Norwegian Public Service Pension Fund
- employee benefits

Salary and conditions

PhD candidates are remunerated in code 1017, and are normally remunerated at gross from NOK 491 200 per annum before tax, depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is 3 years.

Appointment to a PhD position requires that you are admitted to the PhD programme in Engineering Cybernetics (https://www.ntnu.edu/studies/phtk) within three months of employment, and that you participate in an organized PhD programme during the employment period.

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants, and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU. After the appointment you must assume that there may be changes in the area of work.

It is a prerequisite you can be present at and accessible to the institution daily.

About the application

The application and supporting documentation to be used as the basis for the assessment must be in English.

Publications and other scientific work must follow the application. Please note that applications are only evaluated based on the information available on the application deadline. You should ensure that your application shows clearly how your skills and experience meet the criteria which are set out above.

The application must include:

- CV, certificates and diplomas
- transcripts and diplomas for bachelor's and master's degrees. If you have not completed the master's degree, you must submit a confirmation that the master's thesis has been submitted.
- A copy of the master's thesis. If you recently have submitted your master's thesis, you can attach a draft of the thesis. Documentation of a completed master's degree must be presented before taking up the position.
- Name and address of three referees
- If you have publications or other relevant research work

If all, or parts, of your education has been taken abroad, we also ask you to attach documentation of the scope and quality of your entire education, both bachelor's and master's education, in addition to other higher education. Description of the documentation required can be found here. If you already have a statement from NOKUT, please attach this as well.

Joint works will be considered. If it is difficult to identify your contribution to joint works, you must attach a brief description of your participation.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal and interpersonal qualities. Motivation, ambitions, and potential will also count in the assessment of the candidates.

NTNU is committed to following evaluation criteria for research quality according to The San Francisco Declaration on Research Assessment - DORA.

General information

Working at NTNU

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background.

The city of Trondheim is a modern European city with a rich cultural scene. Trondheim is the innovation capital of Norway with a population of 200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

As an employee at NTNU, you must at all times adhere to the changes that the development in the subject entails and the organizational changes that are adopted.

In accordance with The Public Information Act (Offentleglova), your name, age, position and municipality may be made public even if you have requested not to have your name entered on the list of applicants.

If you have any questions about the position, please contact Morten Omholt Alver, telephone +47 95150321, email morten.alver@ntnu.no .

Please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates. Applications submitted elsewhere will not be considered. Diploma Supplement is required to attach for European Master Diplomas outside Norway. Chinese applicants are required to provide confirmation of Master Diploma from China Credentials Verification (CHSI).

If you are invited for interview you must include certified copies of transcripts and reference letters. Please refer to the application number 2022/6637 when applying.

Application deadline: 25.02.22.

NTNU - knowledge for a better world

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The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

Department of Engineering Cybernetics (ITK)

Engineering cybernetics is the study of automatic control and monitoring of dynamic systems. We develop the technologies of tomorrow through close cooperation with industry and academia, both in Norway and internationally. The Department contributes to the digitalization, automation and robotization of society. The Department of Engineering Cybernetics is one of seven departments in the Faculty of Information Technology and Electrical Engineering.

Additional information

Place of service:

Trondheim 7491 Trondheim (Trondheim Municipality)