Jobbnorge ID: 230109
Deadline: 9/30/2022
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Temporary

At the Department of Electronic Systems we have vacancy for a

PERSEUS - PhD Candidate in Machine Learning and Signal Processing.

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

At the Department of Electronic Systems (IES) we have vacancy for a PhD candidate in machine learning and signal processing.

The position is associated with the Centre for Geophysical Forecasting (CGF) at NTNU, which is one of the Norwegian centres for research-driven innovation, funded by the research council of Norway and industry partners. The goal of the CGF is to become a world-leading research and innovation hub for the geophysical sciences, creating innovative new products and services in earth sensing and forecasting domains. As the global ecosystem enters a period of dramatic change, there is a strong need for accurate monitoring and forecasting of the Earth. Machine learning and signal processing play important roles here.

The PhD project will focus on applying state-of-the-art machine learning and signal processing techniques for the effective analysis of massive-size geophysical data. The models should be able to produce predictions and enable early warning systems in various geosciences applications. Special focus will be devoted on the interpretability of the model predictions.

This PhD project is further part of the PERSEUS doctoral programme: A collaboration between NTNU- Norway's largest university, 11 top-level academic partners in 8 European countries, and 8 industrial partners within sectors of high societal relevance. PERSEUS will recruit 40 PhD candidates who want to contribute to a smart, safe and sustainable future. We are looking for highly skilled PhD candidates motivated to approach societal challenges within one of the following thematic areas:

- Big data and AI
- Digital Twins
- Internet of Things
- Extended Reality
- Information and Cyber Security

The current PhD, with its focus on machine learning and signal processing, goes particularly well with the first area in this list.

All participants in the PERSEUS network bring unique and important qualities with them into the doctoral programme. The PERSEUS PhD candidates will have the opportunity to collaborate with researchers in the partner institutions and in other project consortia, and benefit from these collaborative research and education activities.
You will work alongside other highly motivated and talented PhD candidates and researchers. You will also have access to the knowledge base, state-of-the-art research infrastructure, and impact orientation of the partners in the team.

In addition to your education and development within the thematic research area, you will gain transferable skills within project development and management, science communication, research ethics, innovation and entrepreneurial thinking, as well as basic university didactics.

You will be employed by NTNU. During your stay, you will do a 2-3 month international stay and a 1-2 month national stay with one of the PERSEUS partners. This will most fruitfully be achieved by having a strong contact with partners in CGF. This will allow you to extend your network within academia and industry, and to learn about your research area from an academic, innovation, and societal perspective.

The duration of the PhD employment is 36 months.

Starting gross salary is 501.200 NOK/year (equal to approx. 49.312 EUR/year by the exchange rate of July 2022).

We are looking for PhD candidates from all nationalities, who want to contribute to our quest to create knowledge for a better world. PERSEUS recruits candidates according to the EU's mobility rule, i.e. applicants cannot have spent more than 12 months in Norway during the last 3 years, be within the first four years of their research careers and not yet be awarded a doctoral degree.

We believe in fair and open processes. All applications will be considered through a transparent evaluation procedure, with independent observers involved.

The position's working place is NTNU campus in Trondheim. You will report to Department Head.

We look forward to welcoming you to the CGF and the PERSEUS teams.

Duties of the position

- undertaking the necessary courses (30 ECTS) as part of the PhD programme;
- submitting an application for admission and a research plan no later than 3 months after the employment;
- conducting high quality research and report progress on a regular basis and in agreement with the supervisors.

Required selection criteria

- **International mobility requirements:** Applicants of any age and any nationality will be eligible as far as they fulfil the mobility requirement of the COFUND programme, namely, the applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the host organization (Norway) for more than 12 months in the 3 years immediately before the call deadline of PERSEUS.
  Candidates must at the date of the call deadline be within the first four years of their research careers and not yet be awarded a doctoral degree. Full-time equivalent research experience is measured from the date when the candidate obtained the degree entitling him/her to embark on a doctorate (e.g. from the Master's degree).
- **Education requirements:** 5 years of higher education (BSC and MSC) or education equal to (300 ECTS). The grade requirements are B or higher (based on NTNU's grading scale). Master degree must be completed by the call deadline. Education will have to be documented by diploma supplement or equivalent documentation in English and include a description of the educational system. International Relations do require Chinese diplomas to be verified using CHSI. The NTNU Office of International Relations will evaluate degrees and diplomas.
- **Language skill requirements:** The applicants will be asked to provide evidence of good English language skills, written and spoken. The following certificates may be used as such evidence: TOEFL, IELTS or Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE).
- **Export of Knowledge Control:** The PhD candidates who, based on a comprehensive first-hand assessment, might come into conflict with legislation governing exports of knowledge, technology and services will not advance further from the first stage in the recruitment process. For further information, please refer to the Export Control Act.

In addition, the candidate must have:

- MSc degree in machine learning, signal processing or equivalent discipline.
- Strong implementation and programming knowledge.

The appointment is to be made in accordance with 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

- excellent communication skills
- strong motivation for high quality research

Personal characteristics

- Willingness to learn new fields in a multidisciplinary research environment.
- Excellent communication skills.
- Drive to transition new research results and technologies into innovative products and services.
- Self-motivated, ambitious, resilient, resourceful, result-oriented, and independent.
- Excellent writing skills, capable of synthesizing and expressing complex ideas clearly.

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 NOK 501 200 per annum before tax, however it may be negotiable (increased) depending on high level of qualifications and research experience of the candidate. 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 the PhD program in Electronic Systems 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.

Please submit your application electronically via Jobbnorge website. Applications submitted elsewhere/incomplete applications will not be considered. Applicants must upload the following documents within the closing date:

- CV including information relevant for the qualifications, submitted together with an identification document.
- Name, current affiliation and email address of at least 2 persons that will provide reference for you.
- Certified copies of academic diplomas and transcripts and 2 reference letters.
- Applicants from universities outside of Norway will be requested to send a diploma supplement (or a similar document) which describes in details the study and grading system, and the rights for further studies associated with the obtained degree. Chinese applicants are required to provide confirmation of Master Diploma from China Credentials Verification (CHSI).
- A research interest description (maximum 2 pages) that includes a short presentation of the motivation for a PhD study, suitability for the position and the applicant's view towards listed research challenges as well as the theoretical and methodological approach to the challenges.
- Scientific publications (if any). 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 suitability.

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

NTNU believes that inclusion and diversity is our strength. We want to recruit people with different competencies, educational backgrounds, life experiences and perspectives to contribute to solving our social responsibilities within education and research. We will facilitate for our employees' needs.

NTNU is working actively to increase the number of women employed in scientific positions and has a number of resources to promote equality.

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.

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you want to reserve yourself from entry on the public applicant list, this must be justified. Assessment will be made in accordance with current legislation. You will be notified if the reservation is not accepted.

If you have any questions about the position, please contact Giampiero Salvi (giampiero.salvi@ntnu.no).

Application deadline: 30.09.2022.

NTNU - knowledge for a better world

NTNU - knowledge for a better world

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

Department of Electronic Systems

The digitalization of Norway is impossible without electronic systems. We are Norway's leading academic environment in this field, and contribute with our expertise in areas ranging from nanoelectronics, phototonics, signal processing, radio technology and acoustics to satellite technology and autonomous systems. Knowledge of electronic systems is also vital for addressing important challenges in transport, energy, the environment, and health. The Department of Electronic Systems is one of seven departments in the Faculty of Information Technology and Electrical Engineering .

Additional information

Place of service:

NTNU Campus Trondheim 7491 Trondheim (Trondheim Municipality)