

Jobbnorge ID: 301402
Deadline: 5/31/2026
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Temporary

The Department of Ocean Operations and Civil Engineering has a vacancy for a

PhD Candidate in AI-Enabled Maritime Systems for Environmental Monitoring

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 43,000 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 strategic research area Ocean and Coast

NTNU Ocean and Coast is one of five strategic research areas at NTNU. The idea behind these research areas is that complex societal challenges (such as the climate crisis) must be solved collectively. These strategic research areas are therefore established to promote interdisciplinary and multidisciplinary research. The goal is to develop new solutions through radical interdisciplinarity, thereby contributing to real change and a better future.

Inspired by NTNU's strategy 'Knowledge for a Better World', the strategic research areas are intended to be a place where ideas meet action—a space for thinking outside the box and developing groundbreaking solutions to problems that truly matter. These research areas cover the full breadth of academic disciplines at NTNU, including artistic research, and all faculties are invited to contribute.

The Ocean and Coast strategic research area focuses on societal challenges related to the open ocean, coastal areas with their fjords and coastal communities, rivers and lakes, the water cycle, and water more generally. The Arctic faces particular challenges that will also be emphasized. Three key concepts define our approach: preserve, develop, and restore.

To address these challenges, NTNU Ocean and Coast has established eleven interdisciplinary research teams with different focus areas. We encourage you to visit our [webiste](#) for more information about these research teams: Hav og kyst - Satsingsområde - NTNU

About the project

COD-SPAWN is an ambitious, cross-disciplinary research initiative at NTNU Ålesund that develops and pilots a next-generation autonomous monitoring system for Atlantic cod spawning and pollution dynamics in Borgundfjorden — Norway's second most important cod spawning ground and a nationally prioritized site for sediment remediation.

The project deploys unmanned surface vehicles (USVs) equipped with image-based particle sensors and AI-driven data analysis pipelines to enable real-time, high-resolution detection of cod eggs, microplastics, and suspended contamination in a fjord that has historically been compromised by heavy metals, PAHs, PCBs, and organotin compounds.

The project team involves researchers from several departments at NTNU Ålesund, and you will be part of the core team consisting of two PhD researchers, and two Postdoctoral researchers.

About the position

The Department of Ocean Operations and Civil Engineering (IHB) at Norwegian University of Science and Technology is opening a PhD position in Maritime Mechatronics and AI-Driven Environmental Monitoring as part of the ongoing COD-SPAWN project funded by the Ocean and Coast thematic area of NTNU.

COD-SPAWN aims to develop novel sensor technologies and autonomous monitoring systems for marine environments, with a particular focus on supporting sustainable coastal and fjord ecosystems. The project integrates advanced sensing, robotics, and artificial intelligence to enable

continuous, high-resolution monitoring of environmental conditions and biological processes, including those relevant to cod spawning dynamics.

The sensor technology has been successfully validated in laboratory conditions and will be further developed and adapted for real-world marine deployment, using Borgundfjorden as a living laboratory and demonstration site. Autonomous data acquisition will be carried out using unmanned surface vehicles (USVs) based on the Maritime Robotics Otter X platform.

The successful candidate will contribute to one or more of the following areas:

- Sensor payload development and prototyping, including mechanical, electrical, and embedded system design
- Integration of sensors and systems on USVs, including control systems and onboard software
- Real-time environmental monitoring, including remote operation and data transmission
- AI-driven data analysis, including machine learning and computer vision for environmental interpretation

Within the scope of the project, the PhD research can be adapted to the candidate's interests and background, allowing for specialization in hardware, systems integration, or data analytics.

We are seeking a highly motivated candidate with a strong engineering background in one or more of the following fields:

- Mechatronics
- Robotics or Cybernetics
- Marine Technology
- Mechanical Engineering
- Electrical Engineering

Candidates with a background in computer science, data science, or civil/environmental engineering, combined with relevant experience in sensing, robotics, or AI, are also encouraged to apply. The project is inherently interdisciplinary, and the candidate will collaborate closely with experts in marine biology, environmental monitoring, and ocean engineering

Are you motivated to take a step towards a doctorate and open up exciting career opportunities? As a PhD Candidate with us, you will work to achieve your doctorate, and at the same time gain valuable experience that qualifies you for a further career in higher education and research, in and outside academia.

Your immediate leader will be the Head of Department.

Duties of the position

- Complete the doctoral training programme and successfully obtain a PhD degree
- Conduct high-quality research within the framework described above
- Contribute to academic publications and engage in popular science dissemination
- Actively participate in the research group associated with the project
- Engage in international academic activities, including conferences and/or research stays at partner institutions abroad

Be prepared for changes to your work duties after employment.

Required selection criteria

- You must have a relevant Master's degree in engineering: mechatronics, mechanical, robotics, cybernetics, marine technology, or a closely related field. Candidates with strong backgrounds in computer science, electrical engineering or civil engineering combined with relevant experience will also be considered. Your course of study must correspond to a five-year Norwegian course, where 120 credits have been obtained at master's level. Master students can apply, but the master's degree must be obtained and documented before starting the position and no later than August 2026.
- You must have a strong academic background from your previous studies and have an average grade from your Master's degree study, or equivalent education, which is equal to B or better compared to [NTNU's grading scale](#). If you do not have letter grades from previous studies, you must have an equally good academic foundation. If you have a weaker grade background, you may be considered 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 Programme

PLEASE NOTE: For detailed information about what the application must contain, see paragraph "About the application".

The appointment is to be made in accordance with [NTNUs guidelines for recruitment positions](#) for general criteria for the position.

Personal characteristics

To complete a doctoral degree (PhD), it is important that you are able to:

- Work independently
- Work in a structured way, set goals and make plans to achieve them
- Present and discuss your research with other professionals
- Get involved and contribute constructively with feedback
- Work constructively under pressure or in the face of adversity
- Show curiosity and strong motivation for the subject
- Analyze data, assess different perspectives and draw well-founded conclusions
- Be flexible and open to adjusting the plan for the project as needed
- Demonstrate excellent oral and written proficiency in English

Emphasis will be placed on personal qualities.

We offer

- Exciting and stimulating tasks in a strong international academic environment
- Opportunities to work at the interface of ocean modelling, artificial intelligence, and environmental engineering
- Access to unique fjord monitoring datasets and Fjordlab marine research infrastructure
- Collaboration with research institutes, public authorities, and industry partners
- Opportunities to contribute to sustainable management of coastal and marine environments
- Free Norwegian language training at a basic level ([A2](#)).

As a PhD Candidate at NTNU, you will have access to [employee benefits](#).

Diversity

Diversity is a strength, and at NTNU we aim to be an employer that reflects the diversity in society and that makes use of the potential of the population's collective skills. Our vision is [Knowledge for a better world](#) and [our values are creative, critical, constructive and respectful](#). We believe that an organization that is equal, diverse and gender-balanced is essential for us to achieve our goals.

We strive to attract employees with different skills, life experiences and perspectives to contribute to even better problem solving of our societal mission in research and education.

If you think this position is relevant and interesting, we encourage you to apply, regardless of gender, functional ability and cultural background, or whether you have been out of work for a period of time.

Salary and conditions

In the position of PhD Candidate, code 1017, your gross salary will normally be NOK 550 800,-per annum depending on qualifications and seniority. A 2% statutory contribution to the State Pension Fund is deducted from the salary.

The employment period is 3 years .

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the PhD programme in Engineering within three months of your employment contract start date, and that you participate in an organized doctoral programme through out the period of employment.

As an employee at NTNU, it is important that you keep yourself up to date with academic and organizational changes and adapt to them.

For the necessary professional and social interaction, it is a prerequisite that you are physically present and available to the institution on a daily basis.

The appointment is carried out in accordance with the principles of the [State Employees Act](#), and [Export control](#) (legislation that regulates the export of knowledge, technology and services). Candidates who, after assessment of the application and attachments, are considered to be in conflict with the criteria in the latter act, will not be able to be employed.

About the application

The attachments (including a description of your scientific work) must accompany the application as these documents form the basis of the application assessment. The documents must be in English.

Please note: the application will only be assessed on the basis of the information we have received by the application deadline. Therefore, make sure that your application clearly shows how your skills and experience meet the criteria described above. The application and all attachments must be sent electronically via Jobbnorge.no. If you are invited to an interview, you must bring certified copies of certificates and diplomas upon request.

The application must include:

- Transcripts and diplomas for Bachelor's and Master's degrees
- CV
- Copy of Master's thesis. If you have recently 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.
- Project outline containing proposals for an overall description of research questions, theoretical perspectives, methodological design for the project and progress plan (maximum 1500 words/4 pages)
- Short letter of motivation (400 words/1 page)
- Possibly publications etc. other relevant research work
- Possibly certificates
- Names and contact information of three relevant referees

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. If your institution uses "diploma supplement" (normal for most European institutions), you must attach this. A description of the documentation required can also be found [here](#). If you already have a statement from [Norwegian Directorate for Higher Education and Skills \(HK-dir\)](#), please attach this as well.

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

When assessing the best qualified, we emphasize necessary qualifications such as education, experience and personal suitability. Motivation for the position, ambitions, and potential for research will also count when assessing the candidates.

NTNU recognizes a wide range of academic contributions and has committed itself to [The San Francisco Declaration on Research Assessment](#)

and [CoARA](#) (responsible assessment of research and recognition of a greater breadth of academic contributions in accordance with NTNU's social mission).

General information

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you wish to be exempt 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 exemption is not granted.

If you think this position looks interesting and in line with your qualifications, you are welcome to apply.

If you have any questions about the position, please contact Professor Razak Seidu (rase@ntnu.no) or Associate Professor Øystein Bjelland (oystein.bjelland@ntnu.no).

If you have any questions about the recruitment process, please contact HR and PhD Coordinator Lara Bromann (lara.bromann@ntnu.no).

Application deadline: 31.05.2026

For practical information about [working at NTNU](#), please visit this webpage.

Ålesund, known for its unique Art Nouveau architecture and spectacular nature, is a gem on Norway's west coast. The city offers a vibrant cultural life, modern facilities, and a dynamic business environment. With its strategic location by the sea, Ålesund provides a perfect balance between urban living and natural experiences. Here, you will find excellent schools, top-notch healthcare services, and a wide range of recreational activities. Ålesund is an ideal place for both career and family life, with a safe and inclusive community.

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 Ocean Operations and Civil Engineering

We aim to be a hub of international knowledge and innovation in maritime operations. This involves education and research on the design of ships and marine equipment as well as on the operation of vessels. Maritime operations integrate technology, human factors and business. The interfaces between these areas often spark inspiration for innovation and new solutions. [The Department of Ocean Operations and Civil Engineering](#) is one of eight departments in [the Faculty of Engineering](#).

Additional information

Contact persons:

- Razak Seidu, Professor
Phone: | E-mail: rase@ntnu.no
- Øystein Bjelland, Associate Professor
Phone: | E-mail: oystein.bjelland@ntnu.no
- Lara Bromann, HR and PhD Coordinator
Phone: | E-mail: lara.bromann@ntnu.no

Place of service:

Larsgårdsvegen 2 6009 Ålesund (Ålesund Municipality)