Jobbnorge ID: 297344
Deadline: 21.04.2026
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Temporary

The Department of Mechanical and Industrial Engineering has a vacancy for a

PhD Candidate in AI-Enhanced Planning in Shipbuilding Supply Chains

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 position

The Department of Department of Mechanical and Industrial Engineering is offering an exciting PhD position within the Norwegian Maritime AI Centre, a national centre with a focus on applied artificial intelligence (AI) in the maritime sector.

The maritime industry is adopting AI technologies. The next decade will bring extensive digitization of operational data in yards, creating opportunities for more data-driven planning. AI can replace or supplement traditional planning approaches, which struggles to manage the uncertainty and variability that are inherent in complex engineer-to-order shipbuilding. Realizing the full potential of AI is both a technical and an integrative challenge. It requires combining what AI excels at, such as pattern recognition and processing data streams, with theories and methods for planning and logistics.

The PhD research will focus on AI-enhanced planning of operations in shipbuilding supply chains, examining how AI techniques can support decision-makers in analyzing real-time and historical data to better coordinate operators, equipment, and facilities, as well as manage operations across multiple projects and supply chain partners. A key part of this research is to investigate how AI can be integrated into planning methods and systems in supply chains, particularly how AI can anticipate disruptions, analyse trade-offs in tactical sourcing decisions, and contribute to improved supply chain performance.

You will join the Production Management Research Group at NTNU, which focuses on the design and planning of production and logistics systems. The research will be carried out together with industry and public partners in the Norwegian Maritime AI Centre. As part of a world-leading research community, you will investigate how AI can reshape planning and logistics in complex shipbuilding supply chains.

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.

The PhD candidate will be supervised by Professor Erlend Alfnes.

Your immediate leader will be the Head of Department.

About the Norwegian Maritime AI Centre

The Norwegian Martim AI Center shall position the maritime sector for accelerated and successful use of AI. To demonstrate and prototype maritime AI solutions, the center will address a diverse and impactful set of use cases: Logistics, shipping and business transactions; Ship design and construction; Voyage planning and optimization; Condition monitoring and maintenance; Crew training; Maritime traffic and ship surveillance; Decarbonization and energy management; Autonomous ships and remote control.

The research partners are the Norwegian University of Science and Technology (NTNU), University of Oslo, Oslo School of Architecture and Design, Royal Norwegian Naval Academy, Norwegian Mapping Authority, MET and SINTEF Nordvest. There are about 30 user partners from the maritime sector, in addition to hundreds of members of the Maritime Forum, Blue Maritime, Ocean Autonomy, and Maritime CleanTech clusters. The center will be a hub, orchestrating the interfaces with research partners and user partners to facilitate collaboration, knowledge creation, dissemination, innovation, and sharing of knowledge. The Norwegian Maritime AI Center is funded by the Research Council of Norway and the partners for the period 2026-2030. There will be approximately 25 doctoral scholarships and some postdoc positions.

Duties of the position

- Complete the doctoral education until obtaining a doctorate
- Carry out research of good quality within the framework described above
- Apply qualitative methodologies, such as case studies and literature reviews, to gain insight into the characteristics and challenges of the engineer-to-order shipbuilding industry and develop frameworks and knowledge of AI-enhanced planning in shipbuilding supply chains.
- Apply quantitative methodologies, such as simulation, analytical modelling, and AI-driven techniques, to develop decision support for efficient planning and coordination of production activities in supply chains and generate managerial insights and practical guidelines for practitioners.
- Take part in the mandatory PhD research education program
- Conduct independent research and publish the result in recognised scientific journals and present them at international conferences
- Participate in the Norwegian Maritime AI Centre activities
- Participate in the research group Production Management
- Other career-promoting work can be discussed and agreed

Be prepared for changes to your work duties after employment.

Required selection criteria

- You must have a relevant Master's degree in Industrial Engineering, Logistics Engineering, Production Management, Supply Chain Management, Mechanical Engineering, Project management or equivalent. Your course of study must correspond to a five-year Norwegian course, where 120 credits have been obtained at master's level.
- 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 maybe 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
- Excellent written and oral English language skills

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 and Regulations for the degrees philosophiae doctor (ph.d.) and philosophiae doctor (ph.d.) in artistic development work at the Norwegian University of Science and Technology (NTNU)for general criteria for the position.

Preferred selection criteria

- Experience with machine learning or other relevant AI technologies
- Scandinavian language skills
- Previous experience from industry or research in engineer-to-order manufacturing. This can be proven by the attendance of study courses or other relevant activities, such as a master’s thesis.

Personal characteristics

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

- Ability to work independently as well as in teams
- Good communication skills and ability to work in close contact with industry
- Hard working, with drive and determination
- Modest, open to feedback and input from others as well as able to respect, collaborate, and negotiate with others
- Show curiosity and a strong motivation for the subject

Emphasis will be placed on personal qualities.

We offer

- Norwegian Maritime AI Centre industrial network, and a joint PhD environment
- An exciting job with an important mission in society
- Developing tasks in a strong and international professional environment
- Career guidance and follow-up during the PhD period
- Open and inclusive working environment with committed colleagues
- Working capital that can be used to implement the project
- Mentor programme as a new employee at NTNU
- Favorable terms as a member of the Norwegian Public Service Pension Fund (SPK)
- 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.

At NTNU we want to increase the proportion of women in scientific positions. We have a number of measures to promote equality.

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.

The position is conditional on external funding.

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 bein conflict with the criteria in the latter act, will not be able to be employed.

Please note that the person hired will work with critical infrastructure and areas affected by controls on the export of strategic goods, services and technology. Candidates who do not meet the requirements for the necessary security clearance, access clearance and authorization as described in the National Security Act, the Export Control Act and the Act on the Implementation of International Sanctions (Sanctions Act) cannot be considered (e.g. candidates from, among others, Russia, Iran, North Korea, China). In addition, all candidates qualified for this position that are outside NATO-countries must be approved by partners in the Centre's consortium.

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 Norwegian/a Scandinavian language or 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.
- Research plan; 5-7 pages, where you show your capability to structure a 3-years research study with clear motivation, objectives, research questions, methodologies, expected results and dissemination plan. The research plan should refer to state-of-the-art research relevant for engineer-to-order operations in the Norwegian Maritime Industry. The combination of qualitative and quantitative methodologies should be emphasized and motivated.
- 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 Erlend Alfnes, e-mail: erlend.alfnes@ntnu.no

If you have any questions about the recruitment process, please contact HR Senior Consultant Hedda Winnberg, e-mail: hedda.winnberg@ntnu.no.

Application deadline: 21.06.2026

For practical information about working at NTNU, please visit this webpage.

The city of Trondheim is a modern European city with a rich cultural scene. Trondheim is the tech 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.

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 Mechanical and Industrial Engineering

We educate graduates who can create new products, operate and maintain products, and manage projects. The Department has a variety of bachelor's and master's degree programmes. We conduct wide-ranging research in fields such as technology, energy, product quality and development, and productivity. The Department of Mechanical and Industrial Engineering is one of eight departments in the Faculty of Engineering.

Additional information

Place of service:

Høgskoleringen 1 7491 Trondheim (Trondheim Municipality)