

Jobbnorge ID: 226133
Deadline: 7/31/2022
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Temporary

Department of Mechanical and Industrial Engineering has a vacancy for a

PhD Candidate in Digital Supply Chain Management

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-yHCN5QSO>

About the position

We have a vacancy for a 3-year PhD candidate in digital supply chain management at [Department of Mechanical and Industrial Engineering](#) in the Production Management research group.

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

The advent of digitalization and Industry4.0 (I4.0) technologies is considered to be able to revolutionize the world of supply chain (SC) and the practices of supply chain management (SCM) (especially when dealing with disruptive risks), leading to the development of the so-called digital supply chains. For example, Additive Manufacturing can unlock the potential for mass customization and enable a shift from traditional centralized manufacturing to distributed manufacturing which can concur to limit the impact of SC disruptions. Digital Twins, then, can enable to map supply network in real time and ensure end-to-end visibility, and they can hence be used for planning and real-time control decisions.

Similarly, other technologies such as Internet of Things, Artificial Intelligence and Machine Learning, Simulations, etc., can have a tremendous potential impact on SC and SCM. However, despite the enormous potentialities of I4.0 technologies and although top consulting firms have highlighted the necessity of supply chain digitalization, digital supply chains are still in their early stages, where their real potentialities and capabilities are still unexplored and where which technology to adopt is still unclear.

The idea of this project is that of extending the current state-of-the-art of digital supply chains, improving the understanding of their real potentialities and benefits (especially in the light of supply chain disruptive risks) and supporting managers and practitioners in their implementations.

You will report to Associate Professor.

Duties of the position

- develop the knowledge necessary to support the realization of digital supply chains, developing quantitative tools that enable to understand and quantify the potentialities and benefits of digital supply chain and to support managers and practitioners in their implementations
- work on quantitative research activities, where you will need to develop mathematical models and/or adopt advanced methodologies (simulations, digital twins, machine learning algorithms, etc)
- carry out qualitative research activities such as systematic literature reviews. For example, a non-exhaustive list of duties/tasks to be carried out in this PhD research covers:
 - identification of enablers and barriers for implementing digital supply chains
 - development of quantitative tools using for example mathematical models, simulations, etc., to determine the benefits of digital supply chains (especially in the light of supply chain disruptive risks)
 - development of quantitative tools (e.g. data-driven decision support systems) to support managers and practitioners in understanding when to adopt a digital supply chain, which technology to leverage on, etc.
- take part in the mandatory PhD research education program and conduct independent research and publish the result in recognised scientific journals and present them in international conferences

Required selection criteria

- you must have a professionally relevant background in Logistics Engineering, Industrial Engineering, Production/Operations Management, Management Science and Operations Research
- 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](#)
- you need a strong background within the topic of the research project
- you need strong experience in using methodologies and tools requested by the project (Preferred Methodologies: Mathematical modelling for system design and planning, ML/AI methods and data-driven approaches; Preferred Tools: simulation software, programming)

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

- strong analytical skills and interest in quantitative approaches
- good written and oral English language skills
- candidates with Scandinavian language skills will be preferred
- it is beneficial if the applicant has some previous experience from industry or research
- both genders are encouraged to apply

Personal characteristics

- ability to work independently as well as in teams
- good communication skills and ability to work in close contact with industry
- strong writing capabilities

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability.

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](#) 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
- research plan (maximum 5 pages)
- 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 Associate Professor Mirco Peron, email mirco.peron@ntnu.no. If you have any questions about the recruitment process, please contact HR consultant Linn-Cecilie Felle, e-mail linn.c.felle@ntnu.no.

Please submit your application electronically via www.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 IV-123/22 when applying.

Application deadline: 31.07.2022

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:

Dept. of Mechanical and Industrial Engineering 7034 Trondheim (Trondheim Municipality)