



Norwegian University of
Science and Technology

Jobbnorge ID: 293142
Deadline: 2/1/2026
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Project

The Department of Information Security and Communication Technology has a vacancy for a PhD position

PhD Candidate in Networked systems for AI-ready Industrial IoT and OT

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

We invite applications for a fully funded PhD position on the networked systems mechanisms, data paths, and open interfaces needed to support safe and efficient use of Generative AI (GenAI) and agentic AI in Industrial Internet of Things (IIoT) and operational technology (OT) environments.

Modern OT installations—such as factories, utilities, transport, and pipelines—are highly networked, yet strictly segmented into layers and zones to protect safety, reliability, and regulatory compliance. Control networks are isolated from enterprise IT and the internet, and cross-zone connections are few, tightly governed, and often one-way (e.g., via data diodes). At the same time, these infrastructures are typically multi-vendor: operations depend on equipment, software, and tooling from several vendors, each with their own management interfaces, data formats, and access restrictions.

In parallel, AI-driven services are increasingly deployed in a distributed fashion, with inference spread across cloud, enterprise domains, and edge locations close to data sources and users. For OT and IIoT, this raises fundamental systems questions:

- Where should AI-related components be placed (cloud, enterprise, DMZ, OT edge) to balance latency, bandwidth, resilience, and regulatory constraints?
- How can we move data and decisions across segmented, multi-vendor networks without violating safety and policy constraints?
- Which mechanisms, abstractions, and open interfaces are needed so that OT data and functions can be safely exposed to AI-supported services today, and so that future OT systems can evolve towards more “AI-ready” designs?

In this context, GenAI-based assistants (for understanding manuals, procedures, and logs) and agentic AI (for decomposing high-level operational goals into safe, ordered interactions with tools and data sources) serve as motivating examples of demanding, data-hungry services that stress the underlying infrastructure.

The core research focus of the PhD is on systems and infrastructure: architectures, data paths, interfaces, and enforcement mechanisms that allow such services to operate safely and efficiently in real OT/IIoT environments.

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 is the Head of the Communication Technology unit at Department of Information Security and Communication Technology.

About the project

The research will be carried out within the context of SFI NORCICS, the research-based innovation Norwegian Center for Cybersecurity in Critical Sectors. These sectors include electricity production and distribution, oil & gas production and distribution, manufacturing, healthcare, industrial production, smart districts. NORCICS follows a holistic, comprehensive and systemic approach addressing people, processes and technology to protect critical sectors throughout the cybersecurity core functions (identify, protect, detect, respond, recover). NORCICS has partners from academia, research, the public sector, and the industry.

Duties of the position

- Complete the doctoral education until obtaining a doctorate
- Carry out research of good quality within the framework described above
- Academic publications and popular science dissemination
- Participate in the Networking research group
- Participate in international activities such as conferences and/or research stays at foreign educational institutions
- Teaching courses related to networking

Be prepared for changes to your work duties after employment.

Required selection criteria

- You must have a relevant Master's degree in Cyber Security and Communication Networks or equivalent.
- Master students graduating summer 2026 are eligible to apply
- Your master's degree must correspond to a five-year Norwegian master's education, where 120 credits have been obtained at master's level. Master's students can apply, but the master's degree must be obtained and documented before starting the position.
- 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 [Information Security and Communication Technology](#).
- Good oral and written presentation skills in English.
- Good oral and written presentation skills in Norwegian equivalent to level B2.

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 [NTNU's guidelines for recruitment positions](#) and [Regulations for the degrees 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

- Practical experiences with networked systems and multi-vendor environments
- Experience in teaching, preferably on master level

Personal characteristics

We are seeking applicants who are:

- Highly motivated by fundamental scientific research of practical relevance
- Able to work independently
- Well organized and have interests beyond their own research
- Eager to disseminate research results both locally as well as through publications and presentations at international conferences

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 qualifications specified in the advertisement.

We offer

- 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
- Favorable terms as a member of the [Norwegian Public Service Pension Fund \(SPK\)](#).

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 period of employment is 4 years including teaching duties.

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the PhD programme in [Information Security and Communication Technology](#) within three months of your employment contract start date, and that you participate in an organized doctoral programme throughout the period of employment.

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.
- 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 Associate Professor Stanislav Lange, email: stanislav.lange@ntnu.no. If you have any questions about the recruitment process, please contact HR consultant Julie Lindland, email: julie.lindland@ntnu.no.

Application deadline: 1st February 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 Information Security and Communication Technology

Research is vital to the security of our society. We teach and conduct research in cyber security, information security, communications networks and networked services. Our areas of expertise include biometrics, cyber defence, cryptography, digital forensics, security in e-health and welfare technology, intelligent transportation systems and malware. The Department of Information Security and Communication Technology is one of seven departments in the [Faculty of Information Technology and Electrical Engineering](#) .

Additional information

Place of service:

NTNU 7491 Trondheim (Trondheim Municipality)