

Jobbnorge ID: 293688
Deadline: 2/10/2026
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Project

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

PhD Candidate in Cybersecurity and Human-AI Teaming for Critical Infrastructures

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 and project

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 position is a part of the HAT-CI project (Human-AI Teaming Framework in Cyber Security for Critical Infrastructures: Enhancing Resilience and Autonomy), funded by the Norwegian Research Council (RCN) for 2025-2029.

The HAT-CI project addresses critical gaps in cybersecurity by developing a novel framework for human-AI collaboration in Security Operations Centers (SOCs) protecting critical infrastructures. Rather than relying on AI systems alone or purely human oversight, HAT-CI advances the paradigm of adaptive, ethically grounded human-AI teams. The project tackles persistent challenges such as high false-positive rates, limited AI adaptability to evolving threats, and poor contextual awareness by integrating human expertise with AI capabilities.

The project is led by the Institute for Energy Technology (IFE) in collaboration with NTNU, in partnership with industry leaders (NC-Spectrum, Netsecurity) and the Norwegian Centre for Cybersecurity in Critical Sectors (SFI-NORCICS).

Your immediate leader is the Head of the Information Security unit at Department of Information Security and Communication Technology. The place of work will be campus Gjøvik.

Duties of the position

As a PhD Candidate in this project, you will:

- Complete doctoral education leading to a PhD degree in Cybersecurity
- Conduct high-quality research within the HAT-CI framework, primarily focusing on:
 - Leading analysis and mapping of how human-AI teaming can enhance cyber defense operations in critical infrastructures.
 - Contributing to the development and evaluation of dynamic role assignment frameworks for human-AI collaboration in threat detection and incident response.
 - Supporting implementation and evaluation of human-AI teaming approaches through pilot studies in realistic SOC environments.
 - Contributing to the development of ethical protocols and governance frameworks for human-AI teams in cybersecurity operations.
- Conduct end-user interviews and stakeholder engagement with operators and decision-makers in critical infrastructure organizations to understand real-world cybersecurity challenges.
- Perform systematic literature reviews on AI applications in cybersecurity, human-AI interaction, and ethical governance.
- Design and evaluate interfaces and methodologies for integrating operator knowledge into AI systems.
- Publish academic research in peer-reviewed journals and present at international conferences.
- Participate in the research group and contribute to seminars, events, and collaborative research activities.
- Participate in international activities such as conferences, workshops, and potential research stays at partner institutions.
- Engage in dissemination activities to communicate research findings to academic, industry, and policy stakeholders.

- You will work in a supportive environment with regular supervision, mentoring, and opportunities for professional development throughout your doctoral studies.

Required selection criteria

- You must have a relevant Master's degree in Cybersecurity, Computer Science, Information Security, Computer Engineering, or related field. 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.
- 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.
- Admission to NTNU's Doctoral Programme in the relevant discipline (Cybersecurity, Computer Science, or Information Security). Your qualifications and admission status must meet the Faculty of Information Technology and Electrical Engineering's PhD programme requirements.
- Proficiency in English (written and spoken) - equivalent to at least CEFR Level B2 or higher. This is essential for reading academic literature, writing research papers, and participating in international collaborations.
- Strong research interest and motivation in at least one of the following areas:
 - Cybersecurity for critical infrastructures
 - Human-AI interaction and teaming
 - AI ethics and responsible AI governance
 - Human factors in cybersecurity
 - Incident response and threat detection
 - Digital sovereignty

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

- Research experience in cybersecurity, AI systems, human-computer interaction, or related fields (demonstrated through publications, thesis work, or research projects)
- Experience with qualitative research methods (e.g., interviews, ethnographic studies, case studies)
- Knowledge of critical infrastructure domains (e.g., energy systems, manufacturing, industrial control systems)
- Familiarity with ethical frameworks, governance, or policy related to AI systems
- Experience in agile research environments or cross-disciplinary collaboration
- Previous participation in EU-funded or large research consortia
- Publications in peer-reviewed journals or conferences demonstrating research capability

Personal characteristics

To successfully complete a doctoral degree, it is important that you demonstrate:

- Independent, structured, and resilient working style
- Strong analytical and critical thinking skills
- Motivation, curiosity, and openness to learning
- Communication and collaboration skills

We place emphasis on personal qualities and motivation for the research topic when assessing candidates.

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
- Norwegian language training at a basic level ([A2](#))
- 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. (delete if not applicable)

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 [Information Security and Communication Technology](#) 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 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 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.
- 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 Prof. Vasileios Gkioulos, e-mail: vasileios.gkioulos@ntnu.no

If you have any questions about the recruitment process, please contact Senior Executive Officer HR Julie Lindland, e-mail: julie.lindland@ntnu.no

Application deadline: 10.02.2026.

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

Gjøvik, a charming town by the shores of Lake Mjøsa, is known for its beautiful nature and rich cultural offerings. The town boasts a vibrant community with excellent schools, modern healthcare services, and a variety of recreational activities. With its strategic location, just a short drive from Oslo, Gjøvik combines the best of urban life and natural experiences. Here, you'll find a dynamic business environment and exciting career opportunities in a setting that values work-life balance.

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 Gjøvik 2815 Gjøvik (Gjøvik Municipality)