

**Jobbnorge ID:** 255674  
**Deadline:** 1/26/2024  
**Website:** <http://www.ntnu.no>  
**Scope:** Part time  
**Duration:** Temporary

The Department of Information Security and Communication Technology has vacancies for

## Researchers in Critical Infrastructure Security and Resilience

### 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 can find more information about working at NTNU and the application process [here](#).

Video: <https://youtu.be/Xt-yHCN5QS0>

### About the Job

The Department of Information Security and Communication Technology (IIK) has a vacancy for several part-time positions as Researchers in Critical Infrastructure Security and Resilience.

The researchers will work on research and development within the context of the EDF-funded projects "Federated Advanced Cyber physical Test range (FACT)" and/or "Adapting cyber situational awareness for evolving computing environments (NEWSROOM)".

There are a number of cyber test ranges available (including in Europe) but the federated approach and advanced cyber physical test range capability are two elements of the FACT project which makes it disruptive and unique. The focus on Operational Technology (OT) is increasing when it comes to military systems, and the cyber physical aspect is thus of greatest importance for the FACT project. Military platforms are not easily transferable to a relevant location for test. However, the federated approach in the FACT project will allow the physical part to be implemented at more than one location, and still make use of the full capability of the partners capabilities during the testing. To ensure that the equipment is used and has a required level of protection, the FACT project will design, prototype and demonstrate a federated cyber physical test capability which can be maintained and become a sustained capability to the European nations after the project. Our approach is fully user-centric, with the end-user's needs as the starting point for the whole capability and every consideration. Examples of test scenario setups where the federated aspect of FACT is an advantage are numerous: larger partners wanting to cooperate in larger system deliveries, smaller companies cooperating with several partners within their complimentary field of expertise, sharing vulnerabilities and mitigating actions on equipment across partners and nations for shortening time to market.

The core objective of Cyber Situational Awareness (CSA) in cyber defence is to provide all stakeholders and personnel of all levels and forces in the chain of command (e.g., in headquarters, in security operation centres (SOCs) on battlefields, or governmental organizations) accurate information about the current threat landscape and threat level to support establishing an appropriate cyber defence strategy and allow timely adaptation according to changes in the current operational picture and the evolving threat landscape. CSA in cyber defence must collect all available data from the internal military network infrastructure, and devices used by military units in operation and on battlefield, which includes structured and unstructured data in the form of logs, sensor data, network traffic, internal intelligence (e.g., context information), and external information from both clear and dark net, such as cyber threat intelligence (CTI), vulnerability and malware reports, security bulletins, etc. To address all these challenges, NEWSROOM studies and designs technologies and processes related to all aspects of CSA in cyber defence, including data and CTI collection, attacker behaviour and capability classification, human computer interfaces (HCIs) and visualisations, and information sharing.

The positions create an opportunity for more collaboration with other research disciplines such as security management, safety engineering, and policymaking in addition to the focus areas mentioned above.

The positions' working place is NTNU campus in Gjøvik.

Your immediate leader is the Head of the Department of Information Security and Communication Technology.

### Duties of the position

The researchers will:

- Contribute to research and development on:
  - the definition of requirements and specifications for the development of the Federated Cyber Physical Range system.

- o the design and development of the FACT building blocks.
- o the integration of all FACT components into a single interoperable system.
- o collecting data and CTI to establish a profound base for better depicting and interpreting the current threat landscape. To enable monitoring of internal infrastructures, devices, and services.
- o collecting raw data (e.g., logs, monitoring, sensors, network traffic) from hosts on all levels, including clients used by deployed troops, assets such as IOMT, cloud servers and enterprise IT used in headquarters and governmental institutions.
- o collecting external data, e.g., from public networks, and higher-level information, such as CTI (indicators of compromise (IoCs), vulnerabilities, tactics, techniques, and procedures (TTPs), patches, mitigation actions, etc.).
- o depicting the current threat landscape and advising necessary changes in the cyber defence strategy to prepare for emerging future threats.
  - o CTI aggregation, supporting military personnel in correlating and consuming vast amounts of information.
- Contribute to the development of the communication and dissemination strategy of the FACT and/or the NEWSROOM projects.
- Contribute to the development of research and education in Critical Infrastructure Security and Resilience by leading and supporting new research and innovation.
- Work on initiating, organizing, writing proposals for, coordinating, and carrying out national and international R&I projects of high quality, to be funded by national and international sources e.g., the NFR (The Research Council of Norway), and the European Commission.
- Coordinate and manage the [Critical Infrastructure Security and Resilience \(CISaR\) group](#) teams working on R&I projects in critical infrastructure protection, cyber physical system risk management, and other areas of interest of the group.
- Participate as an active member in CISaR activities and in activities of the Department of Information Security and Communication Technology (IIK), including supervision and co-supervision of MSc and PhD students.

## Required selection criteria

- You must have completed a Norwegian doctoral degree or corresponding foreign doctoral degree recognized as equivalent to a Norwegian PhD in information security, computer science, or equivalent. If you can document that the PhD thesis has been submitted, your application can be assessed even if you have not yet defended your dissertation. Documentation of the obtained doctoral degree must be presented before you can take up the position.
- You must be a citizen of an EU or NATO member state.
- Track record with publications on relevant research areas in credible journals and conferences.
- Being able to attend and present at national and international forums.
- Good written and oral English language skills.

## Preferred selection criteria

- Knowledge and technical skills in any of the following areas:
  - o cyber ranges
  - o defining and verifying requirements and specifications for IT and OT systems
  - o designing and developing IT and OT systems
  - o verification of distributed systems
  - o integrating and testing IT and OT systems
  - o developing and operating laboratory facilities for security testing
  - o use case and scenario specification for cyber ranges
  - o elicitation of system requirements (functional, non-functional, operational etc)
  - o CTI modelling and sharing
  - o CTI security principles
  - o access control and data management for CTI
  - o trust management and modeling in CTI sharing
  - o data fusion and correlation
- Experience with participating in EU and/or nationally funded R&I projects related to cyber security for critical infrastructure and cyber-physical systems.
- Experience with having developed research project proposals for external funding bodies such as the European Commission, Research Council of Norway, etc.

## Personal characteristics

- Being able to travel frequently.
- Flexibility and willingness to work on a broad range of topics covered by the activities of the CISaR group.
- Initiative-taking and self-starter who works well with minimal supervision and shows excellent judgement about when to look to managers and teammates for guidance, and when and how to communicate with diverse stakeholders.
- Team player with a proven track record of building cross-functional relationships and ability to work in an international research team.
- Effective communication and negotiation skills, both written and verbal persuasiveness and strong influential skills.
- Eager to learn with a high desire to perform and disseminate high-quality research.

Emphasis will be placed on personal and interpersonal qualities.

## 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

The gross salary for the position of Researcher (code 1109) is normally remunerated from NOK 586 500 before tax per year, depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The salary in part-time positions is a percentage of the full salary commensurate with the percentage of employment.

The period of employment is 18 months with the possibility of one year extension.

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

The position is subject to external funding.

## About the application

The application and supporting documentation to be used as the basis for the assessment must be in English.

Please note that your application will be considered based solely on information submitted by the application deadline. You must therefore ensure that your application clearly demonstrates how your skills and experience fulfil the criteria specified above.

If, for any reason, you have taken a career break or have had an atypical career and wish to disclose this in your application, the selection committee will take this into account, recognizing that the quantity of your research may be reduced as a result.

The application must include:

- CV and certificates
- Transcripts and diplomas for bachelor's-, master's- and PhD degrees. If you have not yet completed your Ph.D, you must provide confirmation on your estimated date for the doctoral dissertation, or that your PhD thesis has been submitted.
- A copy of the doctoral thesis. If you are close to submitting, or have recently submitted your thesis, you can attach a draft of the thesis. Documentation of a completed doctoral degree must be presented before taking up the position.
- Academic works - published or unpublished - that you would like to be considered in the assessment (up to 5 items)
- Research plan focused explicitly on the suitability of the candidate for the position, and the proposed approach for addressing the described work
- Name and contact information of three 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. Description of the documentation required can be found [here](#). If you already have a statement from NOKUT, please attach this as well.

Joint work will also be considered. If it is difficult to identify your specific input to a joint project, you must include evidence of your contributions.

In the assessment of the best qualified applicant, we will emphasize education, experience and personal suitability as well as your motivation for the position.

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#). This means that we pay special attention to the quality and professional breadth of these works. We also consider experience from research management and participation in research projects. We place great emphasis on your scientific work from the last five years.

## General information

NTNU believes that inclusion and diversity is a strength. We want our faculty and staff to reflect Norway's culturally diverse population and we continuously seek to hire the best minds. This enables NTNU to increase productivity and innovation, improve decision making processes, raise employee satisfaction, compete academically with global top-ranking institutions and carry out our social responsibilities within education and research. NTNU emphasizes accessibility and encourages qualified candidates to apply regardless of gender identity, ability status, periods of unemployment or ethnic and cultural background.

NTNU is working actively to increase the number of women employed in scientific positions and has a number of [resources to promote equality](#).

The city of Gjøvik has a population of 30 000 and is a town known for its rich music and cultural life. The beautiful nature surrounding the city is ideal for an active outdoor life! The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world.

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.

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you want to reserve yourself 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 reservation is not accepted.

If you have any questions about the positions, please contact **Prof. Sokratis Katsikas**, email [sokratis.katsikas@ntnu.no](mailto:sokratis.katsikas@ntnu.no) or **Associate Prof. Vasileios Gkioulos**, email [vasileios.gkioulos@ntnu.no](mailto:vasileios.gkioulos@ntnu.no). If you have any questions about the recruitment process, please contact **Julie Lindland**, e-mail [julie.lindland@ntnu.no](mailto:julie.lindland@ntnu.no).

If you think this looks interesting and in line with your qualifications, please submit your application electronically via [jobbno.no](http://jobbno.no) with your CV, diplomas and certificates attached. Applications submitted elsewhere will not be considered. Upon request, you must be able to obtain certified copies of your documentation.

**Application deadline: 26.01.2024.**

## 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 Campus Gjøvik 2815 Gjøvik (Gjøvik Municipality)