UNIVERSITETET I OSLO

Jobbnorge ID: 309937
Deadline: 30.11.2026
Website: http://www.uio.no/
Scope: Fulltime
Duration: Engagement

PhD Research Fellow position in Knowledge-Grounded LLM Agents for Defensive Cyber Operations

About the position

We invite applications for a PhD Research Fellow position in Knowledge-Grounded LLM Agents for Defensive Cyber Operations, available at the Digital Security Research Group within the Department of Informatics at the University of Oslo.

Starting date as soon as possible and no later than 01.05.2027. The fellowship period is three years.

A fourth year may be considered, which would involve 25% other career-promoting work. Other career-promoting work may consist of teaching, supervision, and/or research assistance. This depends on the applicant's qualifications and the department's current needs.

No one can be appointed for more than one PhD Research Fellowship period at the University of Oslo.

Project description

The position will investigate knowledge-grounded and neuro-symbolic approaches to large language models and agentic AI for defensive cyber operations. The PhD project will be carried out in close collaboration with the Norwegian Defence Research Establishment (FFI), including co-supervision from FFI with potential to connect the research to relevant cybersecurity and cyber-defence challenges.

The research will explore how heterogeneous cybersecurity intelligence and evidence sources, including telemetry and observations, can be transformed into structured cybersecurity knowledge, represented through semantic knowledge graphs, and combined with symbolic reasoning, modern language models, and autonomous agents to support security analysis, situational awareness, decision-making, and response. Particular emphasis will be placed on developing trustworthy, reliable, interpretable, and secure AI systems, including methods for grounding, reasoning, validation, and the control of agentic behaviour in security-critical environments.

The security and robustness of LLM-based and agentic systems, including adversarial manipulation, uncertainty, provenance, and the validation of AI-generated decisions and actions, may also be explored as part of this position.

What skills are important in this role?

The Faculty of Mathematics and Natural Sciences has a strategic ambition to be among Europe’s leading communities for research, education and innovation. Candidates for these fellowships will be selected in accordance with this, and expected to be in the upper segment of their class with respect to academic credentials.

Required qualifications:

- Master’s degree or equivalent in cybersecurity, computer science (informatics), artificial intelligence, or a closely related field. Foreign completed degree (M.Sc.-level) corresponding to a minimum of four years in the Norwegian educational system
- Strong foundation in computer science or artificial intelligence/machine learning, with knowledge of cybersecurity or a demonstrated motivation to apply AI/ML in cybersecurity
- Strong programming and software development skills, demonstrated through relevant projects, research, or equivalent experience
- Fluent oral and written communication skills in English

Candidates who have not yet completed their master’s degree must have completed all requirements for the degree by 31.12.2026.

The position will involve cooperation with stakeholders related to Norwegian national security, and candidates' suitability for this will also be taken into account.

Desired qualifications:

- Knowledge of or experience with large language models (LLMs), agentic AI, and related AI/ML methods
- Knowledge of or experience with semantic technologies, including knowledge graphs, ontologies, knowledge representation, and/or symbolic reasoning
- Knowledge of or experience with cybersecurity, particularly cybersecurity operations, security analysis, threat detection and response, cyber threat intelligence, or security automation
- Knowledge of or interest in trustworthy and secure AI, including robustness, interpretability, validation, uncertainty, or the security of LLM-based and agentic systems
- Previous research experience, for example, through a master’s thesis, scientific publication, research project, or equivalent work, is considered an advantage

Language requirement:

- Good oral and written communication skills in English
- English requirements for applicants from outside of EU/ EEA countries and exemptions from the requirements: https://www.mn.uio.no/english/research/phd/regulations/regulations.html#toc8

Grade requirements:
The norm is as follows:

- The average grade point for courses included in the Bachelor's degree must be C or better in the Norwegian educational system
- The average grade point for courses included in the Master's degree must be B or better in the Norwegian educational system
- The Master's thesis must have the grade B or better in the Norwegian educational system

For more information see:

The purpose of the fellowship is research training leading to the successful completion of a PhD degree.

UiO is subject to the Security Act, which governs the organisation's protection of security-sensitive objects and knowledge, in addition to other relevant legislation concerning access to and handling of sensitive information. Based on this, it is a requirement that successful applicants are security-eligible. We may use background checks as part of our recruitment process.

What are we looking for in you?

Personal skills:

- Ability to work independently and take initiative, while also contributing effectively to collaborative research
- Analytical, critical, and structured approach to research and problem-solving
- Curiosity and willingness to learn, with the ability to adapt to new research questions, methods, and technologies
- Good communication and collaboration skills, and the ability to engage constructively in interdisciplinary research
- Positive attitude and the ability to handle hectic periods

Employment in the position is based on a comprehensive assessment of all qualification requirements applicable to the position, including personal qualifications.

We can offer you

- Exciting and meaningful tasks in an organisation with an important societal mission, contributing to knowledge development, education, and enlightenment that promote sustainable, fair, and knowledge-based societal development
- Committed colleagues in a good working environment
- Good welfare schemes
- Opportunity of up to 1.5 hours a week of exercise during working hours
- A workplace with good development and career opportunities
- Career development programmes
- Membership in the Statens Pensjonskasse, which is one of Norway's best pension schemes with beneficial mortgages and good insurance schemes
- Oslo's family-friendly surroundings with their rich opportunities for culture and outdoor activities
- Salary in position as PhD Research Fellow, position code 1017 in salary range NOK from 550 800 - 595 000, depending on competence and experience. From the salary, 2 percent is deducted in statutory contributions to the State Pension Fund

We need different perspectives in our work

UiO is an open and internationally oriented comprehensive university that strives to be an inclusive and diverse workplace and academic environment. You can read more about UiO's work on equality, inclusion, and diversity at uio.no.

We fulfill our mission most effectively when we draw upon our variety of experiences, backgrounds, and perspectives. We are looking for great colleagues, could you be the next one?

We will do our best to accommodate your needs. Relevant adjustments may include modifications to working hours, task adaptations, digital, technical, or physical adjustments, or other practical measures.

If you have an immigrant background, a disability, or CV gaps (Norwegian), we encourage you to indicate this in the job application portal. We always invite at least one qualified candidate from each group for an interview. In this context, disability is defined as an applicant who identifies as having a disability that requires workplace or employment-related accommodations. For more details about the requirements, please refer to the Employer portal (Norwegian).

The selections made in the job application portal are used for anonymized statistics that all state employers include in their annual reports. More information about gender equality initiatives at UiO can be found here.

We hope you will apply for the position with us.

How to apply

The application must include:

- Cover letter (statement of motivation, summarising scientific work and research interest)
- CV (summarising education, positions, pedagogical experience, administrative experience and other qualifying activity)
- Transcripts of records, copies of the original Bachelor's and Master's degree diplomas (see below)
- Documentation of English Language requirements. The appointed candidate cannot start in the position until approved documentation of English language proficiency has been submitted.

- A complete list of publications and related academic or research works, including software artefacts that the applicant wishes to be considered by the evaluation committee
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number)

Application with attachments must be submitted via our recruitment system Jobbnorge, click "Apply for this job".
Foreign applicants should attach an official explanation of their University's grading system.

When applying for the position, we ask you to retrieve your education results from Vitnemålsportalen.no. If your education results are not available through Vitnemålsportalen, we ask you to upload copies of your transcripts or grades. Please note that all documentation must be in English or a Scandinavian language.

General information

The best qualified candidates will be invited for interviews.

Applicant lists can be published in accordance with Norwegian Freedom of Information Act § 25. When you apply for a position with us, your name will appear on the public applicant list. It is possible to request to be excluded from this list. You must justify why you want an exemption from publication and we will then decide whether we can grant your request. If we can't, you will hear from us.

Please refer to Regulations for the Act on universities and colleges chapter 3 (Norwegian), Guidelines concerning appointment to post doctoral and research posts at UiO (Norwegian) and Regulations for the degree of Philosophiae Doctor (PhD) at the University of Oslo.

The University of Oslo has a transfer agreement with all employees that is intended to secure the rights to all research results etc.

About the University of Oslo

The University of Oslo is Norway's oldest and highest rated institution of research and education with 26 500 students and 7 200 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

The Department of Informatics (IFI) is one of nine departments belonging to the Faculty of Mathematics and Natural Sciences. IFI is Norway's largest university department for general education and research in Computer Science and related topics.

The Department has more than 1800 students on bachelor level, 600 master students, and over 240 PhDs and postdocs. The overall staff of the Department is close to 370 employees, about 280 of these in full time positions. The full time tenured academic staff is 75, mostly Full/Associate Professors.

Additional information

Contact persons:

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Place of service:

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