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Søknadsfrist: 01.02.2026
Nettside: http://www.ntnu.no
Omfang: Heltid
Varighet: Prosjekt

The Department of Engineering Cybernetics has a vacancy for a PhD Candidate

PhD Candidate in Unified Autonomy across Robot Configurations

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

Robotic autonomy still lacks a universal architectural blueprint capable of operating across the wide diversity of robot configurations found in aerial, ground, and aquatic domains. Today's autonomy stacks remain highly specialized to each morphology, in sharp contrast to the conserved neural organization of the mammalian brain, which provides a common computational blueprint across species despite profound differences in body plan and ecological niche. Motivated by this analogy - and building on recent advances in foundation models, neural model predictive control, and robotic world models - this PhD project will investigate principles and mechanisms for a shared autonomy architecture that generalizes across embodiments. The overarching ambition is to advance the foundations of a universal science of embodied AI, where perception, action, and learning are co-designed to support intelligent behavior in robots of fundamentally different forms.

The PhD candidate will be supervised by Kostas Alexis, head of the Autonomous Robots Lab (ARL), and the position is part of the recently-funded Norwegian Centre for Embodied AI.

About the project

Join a nation-wide team: The Norwegian Centre for Embodied AI (NCEI), one of Norway's six national AI centers, is recruiting outstanding researchers to advance a universal science of embodied intelligence. NCEI brings together leading robotics and AI groups with key partners from industry and the public sector to study how intelligence emerges from the interaction between body, computation, and environment, across flying, ground, and aquatic robot configurations. Our mission is to chart a generalizable path for physical AI and transform how robot morphology and autonomy are co-designed, enabling new generations of systems tailored to their operational environments and missions. Successful candidates will join an international community with world-class facilities and strong collaborations across Norwegian universities, research institutes, industry, public agencies, and leading global institutions. We welcome motivated applicants in robotics, control, AI, machine learning, physics, and related fields, including early-stage researchers eager to contribute to this emerging scientific frontier.

Duties of the position

- Fundamental contributions in embodied AI - unified autonomy architectures, foundation models and robot world models.
- Focus on implementable methods for onboard robotic autonomy.
- Experimental deployments and field evaluation of the conducted research.
- Complete your doctoral education leading to the PhD degree.
- Conduct and publish research of high-quality within the framework described above.
- Participate in international activities such as conferences and/or research stays abroad.
- Collaborate with other researchers within the department, and across departments at NTNU.
- Supervise master's thesis students related to the project.

Be prepared for changes to your work duties after employment.

Required selection criteria

- You must have a Master's degree in cybernetics, control systems, or equivalent, with a strong training in robotics or computer vision or machine learning.

- Your education must correspond to a five-year Norwegian degree program, 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 (see: https://www.ntnu.edu/ie/research/phd).
- You must meet the requirements for admission to the IE Faculty.

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

- Solid theoretical background in robot perception and navigation.
- Deep foundation in modern machine learning.
- Solid programming skills in C++ and Python. Experience with ROS is a plus.
- Experience with simulators for robotic systems.
- Experience with implementation of real-life robotic systems.
- Strong skills in mathematics, excellent capacity for mathematical formalism, and ability to grasp new concepts quickly.

Personal characteristics

To complete a doctoral degree (PhD), it is important that you are able to:

- Be scientifically curious and open to new research challenges.
- Demonstrate independence and persistence in addressing technical problems.
- Be flexible and reliable, with ability to work effectively independently and as part of a team.

Emphasis will be placed on personal qualities.

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
- Working capital that can be used to implement the project
- Mentor programme as a new employee at NTNU
- 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 employment period is 3 years.

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the PhD program in Engineering Cybernetics within three months of your employment contract start date, and that you participate in an organized doctoral program throughout 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 bein 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. Documentation of a completed Master's degree must be presented before taking up the position.
- CV
- Short letter of motivation (400 words/1 page)
- Names and contact information of minimum 2 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 Professor Konstantinos Alexis, email: konstantinos.alexis@ntnu.no . If you have any questions about the recruitment process, please contact HR Consultant Berit Dahl, e-mail: berit.dahl@ntnu.no .

Application deadline: 01.02.2026.

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

NTNU - knowledge for a better world

The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

Department of Engineering Cybernetics (ITK)

Engineering cybernetics is the study of automatic control and monitoring of dynamic systems. We develop the technologies of tomorrow through close cooperation with industry and academia, both in Norway and internationally. The Department contributes to the digitalization, automation and robotization of society. The Department of Engineering Cybernetics is one of seven departments in the Faculty of Information Technology and Electrical Engineering.

Tilleggsinformasjon

Arbeidssted:

NTNU 7491 Trondheim (Trondheim Kommune)