

**Jobbnorge ID:** 288797  
**Deadline:** 1/12/2026  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Temporary

The Department of Computer Science has a vacancy for a

## PhD Candidate in Mutli-Agent Communication to Enhance Human Learning

### 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

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.

This PhD fellowship is part of the newly established [AI Centre for the Empowerment of Human Learning \(AI LEARN\)](#). Six national research centers for Artificial Intelligence are set to launch in the fall of 2025. These centers will foster interdisciplinary collaboration among researchers to address societal challenges, understand the impact of AI, develop new technologies, and drive innovation across both the business and public sectors. This initiative is established and financed through [the government's significant investment in artificial intelligence over the next five years](#) ([regjeringen.no](#)) (in Norwegian).

Your immediate leader will be the leader of the [Software Engineering unit](#).

### About the project

**This PhD fellowship is part of the national AI Centre for the Empowerment of Human Learning (AI LEARN).**

AI LEARN is a new Centre dedicated to the empowerment of human learning through responsible, human-centred artificial intelligence. In a world where AI systems are reshaping how we learn, work and participate in democracy, our centre tackles the promise and peril of hybrid intelligence—human and machine working and learning together. AI LEARN's mission is to establish an internationally leading interdisciplinary hub that advances foundational research, responsible innovation, robust governance and broad capacity building.

This fellowship is associated with the third cluster of the centre, that focuses on Technological Advancement. The goal is to investigate how to evolve advanced, human-centered AI technology to empower human learning, including designing, developing and evaluating systems and models to enhance learning through AI technology.

The PhD fellow will engage with developing and evaluating models and agents, as well as, multi-agent networks that support the human learning and improving the learning outcomes. The AI agent development will focus on semi-autonomous interaction using single-shot/multi-turn interaction. This includes training the models on pre-existing/collected data using Supervised/unsupervised fine tuning of the existing models (e.g., Retrieval-Augmented Generation, Low-Rank Adaptation, Direct Preference Optimization, Reinforcement Learning from Human/AI Feedback). Moreover, they will employ extensive experiments in collaborating partners (schools, public and private sectors) and engage with the analysis of the collected data. This main goal of this particular PhD fellowship is to develop state-of-the-art multi-agent communication protocols and innovative educational technologies based on it. Further, in collaboration with a postdoc, the candidate should establish models, frameworks, and technologies to create interactive, and adaptive learning experiences, and evaluate these.

### Duties of the position

The candidate will be a member of the Software Engineering research group.

The goal of this project is described above. We are seeking a highly motivated individual who wants to excel in a research environment. Part of the main duties and responsibilities include conducting the following tasks:

- Conduct a literature review
- Implement participatory activities with end-users and stakeholders (co-creation and participatory design workshops),
- Implement the necessary services and interfaces,
- Plan and conduct case studies,
- Collect and analyze empirical data,
- Write up reports and research articles,
- Attend international conferences,
- Organize dissemination and communication activities within the AI LEARN centre,
- Participate in the collaborative activities within the AI LEARN centre.

Be prepared for changes to your work duties after employment.

## Required selection criteria

- You must have an academically relevant background within Machine learning, Artificial Intelligence, Learning Technology, or alike.
- You must have a Master's degree in Computer Science or equivalent (with a focus on Machine learning, Artificial Intelligence, Learning Technology or alike). Your course of study must correspond to a five-year Norwegian course, 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, and no later than the end of Dec. 2025.
- 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 IE's [faculty Doctoral Programme in Computer Science](#).
- Good written and oral English skills. Applicants must provide evidence of good English language skills, written and spoken. The following tests can be used as such documentation: TOEFL, IELTS, or Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE). Minimum scores are:
  - TOEFL: 600 (paper-based test), 92 (Internet-based test)
  - IELTS: 6.5, with no section lower than 5.5 (only Academic IELTS test accepted)
  - CAE/CPE: grade B or A.
- In extraordinary circumstances, formal documentation of language skills can be relinquished. In such cases, the candidate's language skills will be assessed in a personal interview.
- A solid knowledge of quantitative and qualitative research methods.

**PLEASE NOTE: For detailed information about what the application must contain, see paragraph "About the application".**

If you cannot document skills in Norwegian, Swedish or Danish at level A2 upon employment, you must complete Norwegian courses corresponding to at least 15 credits before the end of the employment period. NTNU will facilitate this.

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

The following qualifications will be considered as an advantage:

- Relevant experience as a research assistant in research projects
- Published or submitted relevant research work
- Good oral and written presentation skills in Norwegian/Scandinavian.

Emphasis will be put on personal qualities and potential as a researcher. High importance will also be attached to personal communication and cooperation skills.

## Personal characteristics

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

- Ability to work independently as well as in teams
- Work in a structured way, set goals and make plans to achieve them, result-oriented
- Excellent analytical skills, analyze data, assess different perspectives and draw well-founded conclusions
- Strong motivation to contribute to a good working and social environment

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience, and personal suitability, in terms of the qualification requirements 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

- [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, with potential extension to a 4th year in case the candidate engages with duty work (career promotion work. A minimum of three work years of the total term period must be dedicated to doctoral work.)

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the [PhD programme in Computer Science](#) within three months of your employment contract start date, and that you participate in an organized doctoral programme 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 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 [Jobb Norge.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.
- Information about education and relevant experience (academic 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.
- A short essay (ca. 1000 words) describing their view of the main research challenges in utilizing AI technologies to support design and development of game-based learning.
- Short cover/motivation letter (400 words/1 page).
- Publications and any other work that the applicant wishes to be taken into account should clearly indicate the applicant's contribution.
- Names and contact information of at least three references.

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 Kshitij Sharma, email [Kshitij.sharma@ntnu.no](mailto:Kshitij.sharma@ntnu.no) . If you have any questions about the recruitment process, please contact HR, e-mail: [hr@idi.ntnu.no](mailto:hr@idi.ntnu.no)

**Application deadline: 12.01.2026**

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 216,000. 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 Computer Science

We are the leading academic IT environment in Norway, and offer a wide range of theoretical and applied IT programmes of study at all levels. Our subject areas include hardware, algorithms, visual computing, AI, databases, software engineering, information systems, learning technology, HCI, CSCW, IT operations and applied data processing. The Department has groups in both Trondheim and Gjøvik. The [Department of Computer Science](#) is one of seven departments in the [Faculty of Information Technology and Electrical Engineering](#).

## Additional information

### Contact person:

Kshitij Sharma, Professor

Phone: | E-mail: [Kshitij.sharma@ntnu.no](mailto:Kshitij.sharma@ntnu.no)

### Place of service:

Høgskoleringen 1 7491 Trondheim (Trondheim Municipality)