



Post Doctor/PhD position in Risk Analysis

About the position

This Post Doctor/PhD position is at the Department of Information Security and Communication Technology (IIK), NTNU Gjøvik. For more information about the department, see <https://www.ntnu.edu/iik>. The Post Doctor/PhD candidate will work closely with the eHealth and Welfare Security group of the Center for Cyber and Information Security (CCIS) at the department, with a specific research interest in health data management infrastructure and enabling technologies. The position will be under the main supervision of Professor Einar Snekkenes, with Professor Staal Vinterbo as a co-supervisor.

The position will be funded by the Norwegian Research Council through the IKTPLUSS project Reinforcing the Health Data Infrastructure in Mobility and Assurance through Data Democratization (HealthDemocratization) and serves the project by offering health data management scenario modelling and enabling technology development.

This research position will closely cooperate with other PhD candidates and Postdoctoral researchers in the HealthDemocratization project towards project goal of establishing a trustworthiness incentive layer in the future national health data infrastructure.

The position reports to the Head of Department.

Main duties and responsibilities

An increasing amount of health data is created on and by citizens and patients. These health data resources provide a cornerstone of the vision of Precision/P4 medicine. Sharing health data creates values for clinical care as well as healthcare research. Health data likewise has great value for commercial parties such as the pharmaceutical industry, data analytics providers, and insurance companies. In this development, it is vital to protect and promote the interests of individuals. Individuals should be able to control and share their health data according to their own interests, including monitoring of health status, research participation, and clinical use. On the other hand, a democratic data management system must also allow various other parties (health care service providers, researchers, Internet companies, insurance companies, etc.) to negotiate their benefits, rights and obligations to the health data, and facilitate data provenance and rights management across parties in a trusted way.

This Post Doctor/PhD position will focus on obtaining new knowledge relating to the modelling of risks and incentives for data mobility in an open environment with multiple parties of conflicting interests in rights negotiations. As a starting point, the candidate will explore the augmentation of existing models with variables such as individuals' risk tolerance and discounting rates, competition and cooperation models, short-term and long-term risk models, token economy based incentives, etc., in order to better approximate the complexity of health data mobility in a negotiable environment. In support of this, the candidate will explore data collection by both subjective description and objective observation to create risk and incentive profiles for each party based on which statistical tools can be used to abstract the party-specific models. The actual sharing decisions and right negotiation results will be used to verify the accuracy of theoretical models, and potentially discover new risk-based decision-making patterns beyond the existing knowledge. The researcher is expected to investigate the data subject and other parties' behaviours in the democratic data ecosystem which allows more dynamic rights and duties configuration and data sharing practices, tailor or construct new risk and incentive models, and verify their performance. The researcher needs also to consider the risk and incentive models and metrics for different privacy enhancing methods such as differential privacy methods when they are used to facilitate the data outsourcing. The researcher is expected to have basic knowledge in privacy and security technologies, risk management, human behaviour and incentives, etc. Furthermore, the candidate will be responsible for documenting the research in terms of suitable deliverables for Work Package 1, Task 2 - Risk and incentive modelling in a democratic data ecosystem, as specified above and in accordance with the project plan.

Qualification requirements

Postdoctoral fellow:

We are primarily interested in a Post Doctor candidate, but may consider applications from exceptional PhD candidates. Primary evaluation criteria will be "relevance of methodological skills relative to the research problem (s) found in the Job description. A postdoctoral research fellowship is a qualification position in which the main objective is qualification for work in academic positions. Completion of a Norwegian doctoral degree closely related to the research problem (s), a foreign doctoral degree recognized as equivalent to a Norwegian doctoral degree is required.

PhD candidate: The PhD-position's main objective is to qualify for work in research positions. The qualification requirement is completion of a master's degree or second degree (equivalent to 120 credits) with a strong academic background in computer science, information security, management science, economics, behavioural economics, statistics or a related topic or equivalent education with a grade of B or better in terms of NTNU's grading scale. Applicants with no letter grades from previous studies must have an equally good academic foundation. Applicants who are unable to meet these criteria may be considered only if they can document that they are particularly suitable candidates for education leading to a PhD degree.

The appointment is to be made in accordance with the regulations in force concerning State Employees and Civil Servants and [national guidelines for appointment as PhD, postdoctor and research assistant](#)

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#).

Other qualifications:

- Knowledge and skills in risk analysis or risk management
- Documented high motivation and skills in research training and project-based cooperation
- Documented research experience and publication record
- Experience in healthcare informatics / management is considered as an advantage.

Emphasis will also be placed on:

- Prior academic output
- Prior relevant job experience
- Level of competence in digital technologies

Candidates from non-English speaking countries outside the Nordic countries must provide official documentation of their English competence. Approved tests and results are:

- TOEFL: 600 / writing 4.5 (paper-based test), 92 / writing 22 (internet- based test)
- IELTS: 6.5, with no section lower than 5.5 (only Academic IELTS tests accepted)
- Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE): grade A or B

Personal characteristics

- Communication abilities
- Motivation and personal aptitude

In the evaluation of which candidate is best qualified, emphasis will be placed on relevance on education, experience and personal suitability, as well as motivation, in terms of the qualification requirements specified in the advertisement.

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

Post Doctor:

Postdoctoral candidates are remunerated in code 1352, and are normally remunerated at gross from NOK 563 700 per year. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

This period of employment is for 3 years.

PhD candidate:

PhD candidates are remunerated in code 1017, and are normally remunerated at gross from NOK 479 600 per year. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

This period of employment is for 3 years without teaching assistance or for 4 years including 25% teaching assistance.

Appointment to a PhD position requires admission to the PhD programme in Information Security.

As a PhD candidate, you undertake to participate in an organized PhD programme during the employment period. A condition of appointment is that you are in fact qualified for admission to the PhD programme within three months.

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 criterias in the latter law will be prohibited from recruitment to NTNU. After the appointment you must assume that there may be changes in the area of work.

General information

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background. Under the Freedom of Information Act (offentleglova), information about the applicant may be made public even if the applicant has requested not to have their name entered on the list of applicants.

Questions about the position can be directed to: **Associate Professor Bian Yang, bian.yang@ntnu.no**

About the application:

Publications and other academic works that the applicant would like to be considered in the evaluation must accompany the application. Joint works will be considered. If it is difficult to identify the individual applicant's contribution to joint works, the applicant must include a brief description of his or her contribution.

Candidates from universities outside Norway are requested to send a Diploma Supplement or similar official document, which describes in detail the study and grade system and the rights for further studies associated with the obtained degree:

<https://europass.cedefop.europa.eu/documents/european-skills-passport/diploma-supplement>.

Please submit your application electronically via jobbno.no with your CV, diplomas and certificates. Applicants invited for interview must include certified copies of transcripts and reference letters.

In addition, the following pdf's must be attached:

- A 1-page cover letter explaining your motivation for this position, and how your skills and experience relate to the research project.
- A 2-page summary explaining the relevance of your methodological knowledge to the research problem and research questions, i.e. which methods do you propose to select for the research, how will these methods be applied and what are your knowledge, skills and experience in applying these methods.
- A 2-page description of your previous work and academic interests
- A 2-page draft research proposal outlining a possible approach
- English language test scores, and other supporting documents (like proof of the candidates' study and language abilities)
- Contact information of 1-2 persons of reference, preferably academic supervisor(s)

Application deadline: 19th August 2019

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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](#) .

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