



NTNU

Norwegian University of
Science and Technology

Jobbnorge ID: 183051
Deadline: 3/25/2020
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Project

We have a vacancy for a PhD position in Statistics at the Department of Mathematical Sciences

PhD candidate in Statistical Learning and Uncertainty Quantification for Risk Based Maintenance

This is NTNU

At NTNU, creating knowledge for a better world is the vision that unites our 7 000 employees and 40 000 students.

We are looking for dedicated employees to join us.

Video: <https://www.youtube.com/watch?v=clgKd1SwGLI>

About the position

The vision of Norwegian Public Roads Administration (NPRA, Norw.: Statens vegvesen) is to contribute to national goals for the transportation system. These goals are safety, promoting added value in society, and promoting change towards lower global emissions. The road system in Norway is large and complex, and the geography of Norway raises a range of challenges in this area with respect to maintenance which will be given priority compared to new large road investments in the coming years.

The Norwegian National Transport Plan is aimed towards promoting mobility, traffic safety, climatic and environmental conditions. To ensure a high-quality road infrastructure it is important to choose effective maintenance actions within the areas of operations, maintenance and rehabilitation. In particular, the development of new technology and new digital concepts is essential to enable more efficient monitoring and analysis of road traffic and road network conditions.

There is a technological shift taking place towards a more digitalized society. This technological shift has the potential to contribute to the overall goals of safety, low emissions and increased resource efficiency. The vision of NTNU is Knowledge for a Better World and is actively pursuing this goal across education, research and innovation. In the area of transportation, NTNU conducts extensive activity in several relevant engineering fields connected to infrastructure, maintenance and digitalization.

NPRA established a research and development project with the title "Smarter maintenance". This project on road maintenance and infrastructure will involve close cooperation between the areas of research expertise in civil, transport and structural engineering, technology, digitalization and maintenance, and economics. This cooperation is organized within three thematic areas: (1) Condition registration, data analysis and modelling; (2) Big data, artificial intelligence, strategic analysis and planning; and (3) Maintenance, social economics and innovation. There is both a substantial need and many opportunities for innovation in this research program which will bring together 7 PhD candidates across several engineering and cognate fields. Together, they will seek to solve specific challenges connected to the maintenance of transportation infrastructure.

These positions will be grouped into research clusters that will ensure close cooperation between PhD-candidates, supervisors, NPRA-experts and master/bachelor students.

We are seeking motivated candidates to work in a multidisciplinary and innovative setting of national and international importance.

We have a vacancy for a PhD position in statistics at [Department of Mathematical Sciences](#). The main focus for the research will be:

- Development and evaluation of statistical models for quantifying risks related to road maintenance based on available data.
- Development and evaluation of models for quantifying uncertainty related to risk based road maintenance strategies.

The PhD position is part of a cluster of three PhD positions within the overall objective to establish social economic and strategic analyses of risk based maintenance.

The position reports to Professor Ingelin Steinsland.

Main duties and responsibilities

- Comply with the PhD training programme of the Faculty

- Together with the supervisor team set up research plans and conduct them accordingly
- Take lead in writing research papers and generate research ideas
- Establish close cooperation with the other PhD candidates within the “Smart Maintenance program”, as well as the cross disciplinary supervisor team and NPRA.
- Participate actively in the statistics group at Department of Mathematical Sciences. The statistics group has almost 50 members of which 25 are PhD candidates.

Qualification requirements

Essential qualifications:

- Master’s Degree in statistics or comparable competence. Candidates completing their MSc-degree in the Spring 2020 are encouraged to apply. The position is also open for integrated PhD for NTNU students starting their final year of their Master’s Degree in Autumn 2020.
- Strong background in multivariate statistics.
- Experience with programming and scientific computing
- Fluent in English language, good written and oral communications skills
- Interest in working in a cross-disciplinary team.

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 statistics 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, post doctor and research assistant.

Desirable qualifications:

- Experience with cross-disciplinary work
- Experience with maintenance models, econometrics, and/or analysis of large complex datasets
- Basic Scandinavian language skills are considered an advantage, but not a requirement

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

Personal characteristics

- Dedicated to work both in a team and independently
- Creative - Creating new ideas and new technologies and methods
- Critical - Asking the right questions
- Constructive - Answering the right questions
- Respectful - Care about your colleagues

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

- 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

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

The period of employment is 3 years. The Department may offer a six to twelve months extension as a teaching assistant. Appointment to a PhD position requires admission to the PhD programme in [mathematical sciences](#). 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

[Working at NTNU](#)

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.

The national labour force must reflect the composition of the population to the greatest possible extent, NTNU wants to increase the proportion of women in its scientific posts. Women are encouraged to apply. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life (<http://trondheim.com/>). Having a population of 200 000, Trondheim is a small city by international standards with low crime rates and little pollution. It also has easy access to a beautiful countryside with mountains and a dramatic coastline.

Questions about the position can be directed to Professor Ingelin Steinsland, phone number +47 92663096, e-mail ingelin.steinsland@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.

Please submit your application electronically via jobb Norge.no with your CV, diplomas and certificates. Applications submitted elsewhere will not be considered. Diploma Supplement is required to attach for European Master Diplomas outside Norway. Chinese applicants are required to provide confirmation of Master Diploma from China Credentials Verification (CHSI): <http://www.chsi.com.cn/en/>.

Applicants invited for interview must include certified copies of transcripts and reference letters. Please refer to the application number 2020/5806 when applying.

Application deadline: 25.03.2020.

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 Mathematical Sciences

We are Norway's largest university environment in mathematical sciences. The Department has a particular responsibility for all basis education in mathematical sciences for engineering and natural science students at NTNU. We focus on long-term basic research and applied research at a high international level.

Our aim is to meet the society's needs for mathematical and statistical expertise in business and public administration as well as in the research and education sector. [The Department of Mathematical Sciences](#) is one of seven departments in the [Faculty of Information Technology and Electrical Engineering](#).

Additional information

Place of service:

Trondheim 7491 Trondheim (Trondheim Municipality)