Norges miljø- og biovitenskapelige universitet

NMBU

SMARTForest

Norwegian University of Life Sciences (NMBU)
NMBU og SmartForest

Jobbnorge ID: 212302
Deadline: 10/20/2021
Website: http://www.nmbu.no
Scope: Fulltime
Duration: Fixed Term

We are looking for a highly motivated PhD student who will contribute to triggering a digital revolution in the forestry sector. If you are interested in developing novel machine learning approaches for automated prediction of timber quantity and quality, we would love to hear from you.

PhD position within machine learning for the forestry industry

About the position

The Faculty of Science and Technology at the Norwegian University of Life Sciences (NMBU) has a vacant PhD-position related to machine learning in the forestry sector. The PhD position is for a period of 3 years, or up to 4 years if teaching and other work duties are agreed upon.

SmartForest (www.smartforest.no) is a center for research-based innovation aiming at increasing environmental and production efficiency in the forestry-based value chain through digitalization. A key aspect of SmartForest is converting data to actionable insights through the application of novel machine learning approaches in the forestry domain.

We seek a PhD candidate who will apply machine learning techniques to images and 3D lidar and photogrammetric point clouds for automation of timber measurement. In SmartForest, we will collect images and point clouds of individual harvested logs and log piles along the production chain (in the forest, on trucks, and at the mill). The candidate will explore how we can apply machine learning approaches to the collected data to automate the measurement of amounts and quality of the harvested wood. In addition, the candidate will explore if it is possible to track individual logs through the production chain by recognizing the individual in images and point clouds captured at different points along the production chain.

Main tasks

- Develop machine learning models for measuring timber volume and quality from image data
- Develop machine learning models for measuring timber volume and quality from 3D point clouds (photogrammetric and lidar)
- Develop and test approaches for creating individual log traceability along the production chain by recognizing individual logs in images and point clouds captured at different points along the production chain (forest to mill)

The successful candidate is expected to enter a plan for the progress of the work towards a PhD degree during the first months of the appointment, with a view to completing a doctorate within the PhD scholarship period.

Competence

In order to be appointed, the candidate must meet the requirements for admission to one of the PhD programs at NMBU. A master's degree of at least 120 credits (ECTS) is required, which is based on a bachelor's degree of at least 180 credits (ECTS), or an integrated master's degree of at least 300 credits (ECTS). MSc thesis completed by 30. September may be considered. The applicant must have a documented strong academic background from previous studies, and be able to document good English skills, both written and oral. For more detailed information on admission criteria, see the PhD Regulations and the "supplementary provisions for the PhD programmes".

The applicant must document expertise and interest in the research subject.

Required Academic qualifications, MSc degree in one of the following disciplines or similar:

- Data science
- Computer science
- Statistics
- Mathematics

Desired qualifications:

- Experience with computer vision and computer vision applications
- Experience with handling stored and streaming data

- Experience with building and validating prediction models

Required personal skills:

- High degree of motivation
- Ability to work and co-operate in an interdisciplinary group
- Ability to work independently
- Good communication skills
- Fluent in English (written and oral)

Remuneration and further information

The PhD position is placed in government pay scale position code 1017. PhD fellows are normally placed in pay grade 54 (NOK 491.200,-) on the Norwegian Government salary scale upon employment and follow ordinary meriting regulations.

Terms of employment are governed by Norwegian guidelines for PhD fellowships at Universities and University Colleges.

For further information, please contact:

- Dr. Oliver Tomic, associate professor of Data Science at NMBU, E-mail: oliver.tomic@nmbu.no; phone +47 6723 1607 or
- SmartForest Centre Director Dr. Rasmus Astrup at NIBIO, E-mail: rasmus.astrup@nibio.no; pone +47 9415 1660

Information for PhD applicants and general Information to applicants

Application

To apply online for this vacancy, please click on the 'Apply for this job' button above. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

Application deadline: 20. October 2021

If it is difficult to judge the applicant's contribution for publications with multiple authors, a short description of the applicant's contribution must be included.

Applications should include (electronically):

- A letter of intent
- Curriculum vitae
- Full publication list
- Copies of degree certificates and transcripts of academic records (all certified)
- A list of two persons who may act as references (with phone numbers and e-mail addresses)
- Proof of English proficiency must be attached in accordance with NMBU PhD regulation section 5-2 (3).

Publications should be included electronically within the application deadline. Printed material which cannot be sent electronically should be sent by surface mail to the Norwegian University of Life Sciences, Faculty of Science and Technology, P.O. Box 5003, NO-1432 Ås, within 20. October 2021. Please quote reference number 21/04579.

About The Faculty of Science and Technology

The Faculty of Science and Technology (REALTEK) develops research-based knowledge and educates civil engineers and lecturers needed to reach the UN's sustainability goals. We have approximately 150 employees, 70 PhD students and soon 1500 students. The education and research at REALTEK cover a broad spectrum of disciplines.

This includes data science, mechanics and process engineering, robotics, construction and architecture, industrial economics, environmental physics and renewable energy, geomatics, water and environmental engineering, applied mathematics as well as secondary school teacher education in natural sciences and use of natural resources such as in agriculture, forestry and aquaculture. The workplace is in Ås, 30 km from Oslo.

The Norwegian University of Life Sciences (NMBU)

NMBU has a particular responsibility for research and education that secures the basis for the life of future generations. Sustainability is rooted in everything we do and we deliver knowledge for life. NMBU has 1,800 employees of which about 250 phd scholarships and 6,000 students. The university is divided into seven faculties.

NMBU believes that a good working environment is characterised by diversity.

We encourage qualified candidates to apply regardless of gender, functional ability, cultural background or whether you have been outside the labour market for a period. If necessary, workplace adaptations will be made for persons with disabilities. More information about NMBU is available at www.nmbu.no.

Additional information

Place of service:
Universitetstunet 3 1430 Ås (Ås Municipality)