

Industrimaster i computer science

Simula: solving problems, making a difference.

Simula's mission is to solve important and fundamental problems of science and engineering, with the main goal of benefiting and advancing society. We do this by concentrating on [five select research areas](#) in ICT and performing excellent research, by developing our people, and by spinning out applicable results into profitable startups.

Learn more about working at Simula: [Careers at Simula](#)

Job description

We currently have available up to two positions as Industry Master students at Simula's main office location in downtown Oslo. Depending on the potential candidates' qualifications, these positions will be connected to one of our three software engineering departments or to our department for research on high performance computing (HPC). The main research topics in these departments are listed below:

Software engineering

- Cyber-physical systems and Internet of Things
- Digital twins of software-based systems
- Testing of intelligent / autonomous systems (robotics, self-driving vehicles, etc.)
- Automated identification and repair of software security vulnerabilities
- Autonomously self-healing systems
- Intelligent data analytics and recommendation systems
- Software aspects of quantum computing

All the listed research topics in *software engineering* make use of artificial intelligence (AI) and machine learning (ML) techniques. For several topics there is also substantial use of heuristical methods for search and discrete optimization.

High Performance Computing

- Methodologies for parallel programming
- Hardware-compatible and/or inspired numerical strategies for physics-based and data-driven modelling
- Software tools for user-friendly deployment and optimization of scientific codes
- Performance optimization of real-world applications from various branches of computational science

Simula is hosting eX3 (ex3.simula.no), which is the national research infrastructure for experimental *HPC research*. Through eX3, the students will have access to a variety of different state-of-the-art processors, including GPUs, FPGAs, and domain-specific processors designed bottom up for high-volume AI/ML workloads.

Candidate Profile

For all the listed research topics, we are looking for candidates that have excellent programming skills and a basic understanding of data science techniques and/or numerical simulations. The actual master thesis topic will be worked out in collaboration with the research team that hosts the relevant position. When applying, please be specific about in which

directions you would do go.

Simula Offers

- Excellent opportunities for performing high quality research, as part of a highly competent and motivated team of international researchers and engineers.
- An informal and inclusive international working environment.
- Modern office facilities located at Kristian Augusts gate 23 in downtown Oslo.
- Numerous benefits: access to company cabin, sponsored social events, etc

Application Requirements

Interested applicants are requested to submit the following:

- Curriculum vitae
- Cover letter
- Transcripts

Contact

Additional enquiries regarding the position can be addressed to Prof. Are Magnus Bruaset (arem@simula.no).

About Simula

Simula Research Laboratory AS is a publicly owned research lab located in downtown Oslo, Norway. Simula conducts Information and Communication Technology (ICT) research in the fields of scientific computing, software engineering, communication systems, machine learning and cryptography.

Simula's main objective is to create knowledge about fundamental scientific challenges that are of genuine value for society. This is achieved through high-quality research, education of graduate students, industry collaboration, technology transfer, and commercialization. Since 2001, scientific evaluations conducted by the Research Council of Norway has repeatedly placed Simula at the forefront of international research in ICT. The most recent in-depth evaluation was published in 2017, grading the full range of research at Simula as "excellent".

Simula appreciates diversity. We currently employ approximately 196 individuals from over 40 countries and strive to create a family-friendly working environment.

Simula has a close collaboration with leading universities in Norway and abroad, both in terms of research and education, and facilitates extended research stays abroad. Our Master's and PhD students conduct their research at Simula, and attend courses and receive their degrees from university partners.