

Professor in Model-based Control Theory

DTU Compute at Technical University of Denmark (DTU) invites applications for an appointment as Professor in Model-based Control Theory.

DTU Compute is an internationally unique academic environment spanning the science disciplines mathematics, statistics and computer science. At the same time DTU Compute is an engineering department covering informatics and communication technologies (ICT) in their broadest sense. Finally, DTU Compute plays a major role in addressing the societal challenges of the digital society where ICT is a part of every industry, service, and human endeavour.

DTU Compute strives to achieve research excellence in its basic science disciplines, to achieve technological leadership in research and innovation, and to address societal challenges in collaboration with partners at DTU and other academic institutions, nationally and internationally, and, equally important, with industry and organizations. DTU Compute interacts with leading centres and strategic partners in order to increase participation in major consortia.

DTU Compute plays a central role in education at all levels of the engineering programmes at DTU - both in terms of our scientific disciplines and our didactic innovation.

The aim of the new position is to strengthen the Department's teaching and research activities in model-based control theory. There is focus on mathematical and statistical modelling, control engineering, system identification, optimization, algorithms for solution of differential equations, and methods for analysis and application of stochastic difference and differential equations. These activities are strongly coupled to various applications and collaborations with industry, the health sector, and national research centres.

The professor position is affiliated with the Section for Dynamical Systems or the Section for Scientific Computing.

Responsibilities and tasks

The professorship is associated with the department's strategic research topics: 'computational methods for simulation, predictive control and optimization of dynamical systems' and 'methods for stochastic adaptive control and optimization of stochastic dynamical systems'. In addition, you will be responsible for working within:

- Oil and gas exploration, e.g., in collaboration with Center for Energy Resources Engineering (CERE) and Danish Hydrocarbon Research and Technology Centre (DHRTC).
- Process control related to unit operations such as biotechnical processes, in collaboration with DTU Electrical Engineering, DTU Chemical Engineering, as well as other research departments and industry.
- Smart energy systems based on green energy sources, control of energy sources (e.g., windmills and windmill parks) in collaboration with DTU Electrical Engineering, DTU Environment and DTU Civil Engineering.
- Health care such as artificial pancreas, prediction of diseases via deviational behaviour, and optimal feeding of animals and livestock.
- Optimal real-time control of critical and limited resources, such as urban drainage systems and fresh-water supply.
- Modelling and control of vehicles such as ships, robots, drones and similar.

The emphasis is on methods and computational aspects of modelling, optimization and model-based control – and the goal is to enable DTU to be at the leading edge within these and related fields.

At DTU Compute, we value knowledge sharing and cross functionality. Therefore, you are expected to cooperate and be eager to build relations with colleagues in the department and with other departments of DTU.

You must participate in departmental teaching at all levels, so you should value visionary and meaningful communication. Bachelor courses are taught in Danish, other courses in English. For international candidates, DTU offers Danish language courses, with the purpose of being able to teach in Danish within the first two-three years.

The successful candidate is expected to take a lead position in teaching at the BSc, MSc, and PhD levels.

Qualifications

You are expected to make a special effort in regard to research/innovation and research management, and—generally speaking—your effort is expected in continuation of the following qualification requirements:

- A high level of original scientific production at international level that has contributed to the further development of the subject area in question.
- Documented and successful teaching experience at different levels within the University's study programmes, including and, in particular, at PhD level.
- Documented experience in at least one of the following two fields:
- Research management, including handling management tasks in national or international projects, research programmes, congresses, etc.
- Innovation, including building up patent areas, applying research results in a commercial context, etc.

Assessment

In the assessment of the candidates, consideration will be given to

- Experience and quality of teaching and curriculum development
- Research impact and experience, funding track record, and research vision
- Societal impact
- Documented innovation activities, including commercialization and collaboration with industry
- International impact and experience
- Leadership and collaboration
- Communication skills

For the specific position we will consider your ability to collaborate and lead projects transcending topical boundaries, and to motivate colleagues to be at their best and achieve ambitious goals. You must be motivated by both personal and team accomplishments and thrive with collaboration and team work

We offer

DTU is a leading technical university globally recognized for the excellence of its research, education, innovation, and scientific advice. We offer a rewarding and challenging job in an international environment. We strive for academic excellence in an environment characterized by collegial respect and academic freedom tempered by responsibility.

Salary and terms of employment

The appointment will be based on the collective agreement with the Danish Confederation of Professional Associations. The allowance will be agreed with the relevant union.

Further information

Further information may be obtained from Head of Department Per B. Brokhoff, tel.: +45 4525 3365.

You can read more about DTU Compute on www.compute.dtu.dk/english

Application procedure

Please submit your online application no later than **XXX 2018 (local time)**. Apply online at www.career.dtu.dk.

Applications must be submitted as **one PDF file** containing all materials to be given consideration. To apply, please open the link 'Apply online', fill in the online application form, and attach **all your materials in English in one PDF file**. The file must include:

- Application (cover letter) addressed to the President
- CV
- A vision for future research
- Views regarding teaching and research based on the 'Assessment' bullets
- Documentation of previous teaching and research based on the "Assessment" bullets
- List of publications indicating scientific highlights
- H-index, and ORCID (see e.g. <http://orcid.org/>)
- Diploma (MSc/PhD)

Applications and enclosures received after the deadline will not be considered.

All interested candidates irrespective of age, gender, disability, race, religion or ethnic background are encouraged to apply.