Professor in Cyber Physical Systems

DTU Compute at the Technical University of Denmark invites applications for a position as professor in Cyber-Physical Systems.

DTU Compute represents a unique combination of mathematics and computer science, including competencies in information processing in the broadest sense, and in the development of modern computer based systems. Consequently, DTU Compute is in an ideal position to utilize the synergies arising at the crossroads between IT and mathematics, and we are therefore well positioned to address the challenges of the digital society.

The scientific areas of DTU Compute cover theory, technology and engineering applications and span from fundamental research to innovative products and public sector consultancy. We drive technology and abstract engineering challenges into mathematical models, enabling analysis, design, synthesis and simulations. We communicate mathematical and computational results to society at large and gain valuable insights from which new research questions emerge.

DTU Compute covers basic, strategic and applied research within and between a broad range of topics, organized in eleven sections: Software Engineering, Embedded Systems Engineering, Language-Based Technology, Algorithms, Logic and Graphs, Scientific Computing, Image Analysis and Computer Graphics, Cognitive Systems, Cryptology, Mathematics, Dynamical Systems, Statistics and Data Analysis.

DTU Compute has strong collaborations with other departments at DTU, and has extensive collaboration with national and international universities and industry – both concerning research projects, graduate theses, PhD projects, and research based consultancy.

The professor will be attached to one of the 11 sections comprising the Department employing 400 persons including presently a faculty of 90 and approximately 140 PhD students.

Responsibilities and tasks
The professor will play an active role in defining, developing and profiling the future research in Cyber-Physical Systems at DTU Compute. Cyber Physical System refers to the conjoining of and coordination between computation and physical resources. Cyber physical system exploits pervasive sensing, computation, communication, and actuation and deeply embeds computation intelligence into adaptive physical systems. Key challenges for these systems are that they often need to be networked (large-scale, distributed coordination), adaptable, autonomous, efficient, secure and reliable. This requires invoking one or more disciplines from the department's research areas. To ensure the basic foundation of the research area of Cyber-Physical Systems as well as its practical use for society, we welcome applicants oriented toward basic science as well as application oriented research. The teaching duties of the professor encompass development of study programmes within Cyber-Physical Systems at bachelor, master and Ph.D. level. The professor is expected to advance e-learning as an important pedagogical tool in higher education.

The professor will be responsible for initiating and developing the collaboration with other sections as well as with industry in order to fulfil the objectives of the subject area. Contribute to the development of the basic foundation of the research area as well as

development of computer aided teaching within subjects relevant for Cyber-Physical Systems.

The responsibilities and tasks include publication/scientific dissemination, knowledge-exchange with society at large, research-based teaching and educational guidance, and supervision of assistant professors.

The successful candidate is expected to take a lead position in teaching at the bachelor-, master- and PhD levels.

Qualifications
Applicants should demonstrate the ability to combine theoretical knowledge with the development of computational methods in order to address problems arising in Cyber-Physical Systems. Applicants must demonstrate leading-edge research in one or more disciplines directly relevant for Cyber-Physical Systems. The ability to obtain research funding and form industrial collaborations. Notable achievements will be expected within research/innovation and research-related leadership, and generally, high achievements are expected in extension to the qualifications stipulated for the position, which are:

- Extensive original scientific output at international level that has been instrumental in advancement of the field in question.
- Documented and successful teaching experience at different levels within the University's study programmes, including, notably at PhD level.
- Documented experience in research leadership, including attending to leadership tasks in national or international projects, research programmes, conferences, etc.

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

- the ability to teach
- scientific production at international level, research potential and ability to lead and develop a research team
- the ability to promote and utilize research results
- experience with innovation activities
- an all-round experience basis, including international experience
- the ability to contribute to the development of the Department's internal and external cooperation
- track record in attracting funding to the research area
- visions within the research area

Salary and terms of employment
The appointment will be based on the collective agreement with the Confederation of Professional Associations. The allowance will be agreed with the relevant union.

Further information
Further information may be obtained from Head of Department Helle Rootzen, tel.: +45 4525 3370.

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

Application procedure:

Please submit your online application no later than **XXX 2014**. 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
- List of publications indicating scientific highlights
- Documentation of teaching experience
- A plan for future research

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