

## Professor in Medical Image Analysis

DTU Compute at Technical University of Denmark (DTU) invites applications for an appointment as Professor in Medical Image Analysis for the Section for Image Analysis and Computer Graphics.

The Image Analysis and Computer Graphics section consists of 11 faculty members and around 35 postdocs and PhD students working in the general area of image analysis and image synthesis. Medical image analysis is one of the core topics of the section.

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 endeavor.

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 centers 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 program 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 medical image analysis. A specific focus in the position is on the computational modelling and analysis methods for brain imaging. This should be based on a strong collaboration involving researchers both within medical imaging technology and research related to clinical practice. A central element is the development of new research, teaching, innovation, and campus-wide collaboration based on strong connections with (university) hospitals and national and international research institutions and with industry

### Responsibilities and tasks

In this position, you should advance the research field of medical image analysis and be a driver in developing medical image analysis education at all levels, and engage in broad research collaborations including clinical and industrial partners.

The tasks include research, teaching, and innovation within analysis of medical image data focusing upon 3D data from different modalities aiming at as well diagnosis as treatment. A crucial problem in health care is early diagnosis enabling the most effective treatment, and subsequently tracking disease progression so that treatment efficacy can be assessed. In developing solutions to this, translational activities are fundamental, and therefore such activities are a crucial part of the responsibilities of the position. This requires cooperation with clinical researchers rooted in hospital environments as well as with partners from the biomedical industry.

The position is seen as an important element in promoting bioimaging activities at DTU Compute. At the Department there are several sections that are involved in related activities: Scientific Computing, Cognitive Systems, Statistics, Dynamic Systems, and CACHET, the Copenhagen Center for Health Technology. At DTU there are notable activities within MR imaging and Ultrasound imaging at the Department of Electrical Engineering, X-ray and CT imaging at the Department of Physics and more specialized

activities within health technology at e.g. the departments of Nanotechnology, Photonics, Bioengineering, and Bioinformatics. It is envisaged that the position will strengthen the cooperation also with these groups

In the research activities, special emphasis is put on the development of tools aimed at facilitating automatic analysis of images of different organs. In such tools, the computational models of the data acquisition should include prior knowledge on properties of the items that are imaged, e.g. geometric models describing the expected location and shape of the various structures under investigation, or e.g. models describing physical properties of different types of tissue.

Securing the further funding of the activities within medical imaging is obviously important. Possible sources will be usual funding agencies as well as industrial and institutional partners. Similarly, the successful candidate is expected to offer scientific advice, including consultancy at a national and an international level.

You are expected to take a leading position in departmental teaching at all levels, so you should value visionary and meaningful communication. For international candidates, DTU offers Danish language courses for the purpose of being able to teach in Danish within the first two-three years.

### **Qualifications**

The general qualification requirements for the position are a high level of original scientific production at an international level with documented contributions to the development of medical image analysis. Further qualifications are teaching experience at the BSc and MSc levels and, in particular, at the PhD level.

The candidate should have documented experience in several of the following fields:

- A track record in attracting funds
- A track record in cooperating with clinical partners.
- Dissemination of research results
- Experience in coordinating international collaborative efforts

In assessing your personal competencies, we will consider your ability to collaborate 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.

### **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, the following qualifications are also considered very important

- a strong background in mathematical modelling with theoretical contributions and computational implementations.

- a strong background in medical image analysis with methodological contributions.

### **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, Professor Per B.Brockhoff, tel.: +45 4525 3365.

You can read more about DTU Compute on [www.compute.dtu.dk](http://www.compute.dtu.dk).

### **Application procedure**

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