

## **Research Assistant in neural computation for robotics systems**

A nine-months research assistantship is available at the Department of Electrical Engineering at the Technical University of Denmark. The research assistant position is in the research field of neuro-robotics, where neuroscience and robotics intersect. The candidate will be part of a team that is already involved in the framework of the EU Flagship Project “Human Brain Project” (HBP). The position addresses research in neural computation for robotics systems.

### **Responsibilities and tasks**

The purpose of the research assistant position is to explore new algorithms for real-time motor control and motor learning of compliant robotic systems, mimicking brain computations and connections. The focus will be on the design, programming and validation of different types of bio-inspired architectures for adaptive control. The main objective is to implement an architecture, which is capable to adapt to different robot system dynamics.

The successful candidate will explore the use of spiking neural networks on dedicated neuromorphic hardware (e.g., SpiNNaker board) to control real or virtual robots in the Neuro-robotics Platform (NRP, <https://neurorobotics.net>) built within the Human Brain Project subproject 10 “Neuro-robotics.” In the position, there will be a focus on creating such real-time demonstrators.

### **Qualifications**

Candidates should hold a MSc in electrical engineering or related field. The candidate is required to have expertise about artificial intelligence methods, computational neuroscience, and in robotic applications (hw and/or sw). Candidates without such experience will not be considered for the position. Experience on programming the Neuromorphic chip SpiNNaker, the Neuro-robotic Platform of the Human Brain Project, and knowledge about modular robotics, spiking neural networks is advantageous.

### **We offer**

DTU is a leading technical university globally recognised 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 characterised by collegial respect and an academic freedom tempered by responsibility.

### **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. The period of employment is nine months with the possibility of extension.

### **Further information**

Further information may be obtained from Assistant Professor Silvia Tolu, [stolu@elektro.dtu.dk](mailto:stolu@elektro.dtu.dk).

You can read more about DTU Electrical Engineering on [www.elektro.dtu.dk](http://www.elektro.dtu.dk).

### **Application procedure**

Please e-mail your application no later than 20<sup>th</sup> April 2019. Applications must be submitted as one PDF file containing all materials to be given consideration. The file must include:

- Application (cover letter)

- CV
- Diploma (MSc)

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

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

The Automation and Control group performs research and teaching in automation technology, control theory and robotics at DTU. The group has about 35 affiliated researchers and other employees. Please read more about the Automation and Control group on [www.aut.elektro.dtu.dk](http://www.aut.elektro.dtu.dk).

The Department of Electrical Engineering is the central department at the Technical University of Denmark within electrical and biomedical engineering. Including PhD students we have a total of 270 staff members. It is our goal to ensure research and engineering training at the highest international level. The department is organised into seven sections and a number of cross professional centres. Please read more about the Department of Electrical Engineering on [www.elektro.dtu.dk](http://www.elektro.dtu.dk).

DTU is a technical university providing internationally leading research, education, innovation and scientific advice. Our staff of 5,800 advance science and technology to create innovative solutions that meet the demands of society; and our 11,000 students are being educated to address the technological challenges of the future. DTU is an independent academic university collaborating globally with business, industry, government, and public agencies.