



The Brandenburg University of Technology Cottbus-Senftenberg (BTU) is a young, up-and-coming university and the only technical university in the state of Brandenburg. With more than 1,500 employees, the BTU is one of the largest employers in Lusatia and is particularly impressive in terms of its work-life balance.

In the Faculty of **STEM - Mathematics, Computer Science, Physics, Electrical Engineering and Information Technology**, the following position is to be filled in the **Department of Computer Engineering** in Cottbus as part of a third-party funded research project at the earliest possible date:

Academic Staff (m/f/d)
limited until 30.04.2026, full-time, E 13 TV-L

Reference number: 08/24

The Department of Computer Engineering at the Brandenburg University of Technology Cottbus-Senftenberg is engaged in research and teaching on the conception, architecture and realization of energy-efficient computing systems. The main areas of research are:

- Development of new methods and techniques for the conception and realization of heterogeneous computer architectures, in particular using reconfigurable logic components and microcontrollers.
- Measurement and design of energy efficient video communication solutions.
- Accurate and fast simulation of embedded systems.
- Development of modern methods and frameworks for the design of energy-efficient embedded computing systems and their programming.

Our research approaches are used in diverse applications such as modern industrial processes (including predictive maintenance), video communications, fast data transmission (5G), health applications (wearable sensors for diagnostics) and for fast signal processing (optical, radar) using artificial intelligence. The research topics are ideally suited to the preparation of a doctorate.

In the event of a project extension, the aim is to continue employment beyond the end of the above-mentioned fixed-term contract.

These are your responsibilities:

Carrying out scientific research work in one of the projects funded by DFG called “Cross-Layer Adaptive Hardening Strategies for Next-Generation General-Purpose Graphics-Processing Units (GPGPUs)”:

- Development of a testbench for the simulation of GPGPU architectures,
- Development of methods for compressing and improving the energy efficiency of GPGPUs,
- Improvement of fault-tolerance

Further activities include:

- Lecturing and publishing on the research topic
- Preparation of contributions for reports and presentations
- Other research-related administrative tasks

Your Skills

You have successfully completed a scientific university degree (Master's degree, university diploma or equivalent) within the meaning of the TV-L pay scale (accredited Master's degree/university diploma/equivalent) in a field relevant to the position (computer science or comparable).

Further knowledge and/or experience:

- Circuit design with hardware description languages (VHDL, Verilog, SystemVerilog, SystemsC) and their implementation as demonstrators,
- very good knowledge of fault tolerance and hardware reliability,
- very good knowledge of GPGPU architecture and GPGPU programming.

You also bring with you the ability to work scientifically, independence, flexibility and good communication skills. With the ability to think analytically and to work diligently and conscientiously, you are an ideal addition to our interdisciplinary team.

For further information about the vacant position, please contact Dr.-Ing. Christian Herglotz (e-mail: christian.herglotz@b-tu.de, Tel.: +49 (0)355 69-2026).

Our Offer

You can expect exciting and varied tasks in a highly innovative research project with several partners. You will participate in international conferences with corresponding publications. In the case of a prospective qualification, opportunities for further employment will be sought after the project has ended.

Extensive opportunities for flexible working hours await you, such as home office, in order to enable a better compatibility of family and career and to achieve higher work and result satisfaction through more self-responsibility in the design and execution of your work.

Become a part of the BTU family. We look forward to getting to know you.

The BTU Cottbus-Senftenberg is committed to equal opportunities and diversity and strives for a balanced gender ratio in all employee groups. Persons with a severe disability and their equals are given priority in the case of equal suitability.

The BTU aims to increase the proportion of women in research and teaching and therefore strongly encourages qualified female applicants to apply.

Application photos are not required.

Please note the more detailed information on the selection procedure on the BTU Cottbus-Senftenberg website.

Please send your application documents in a **PDF document**, stating the reference number, **exclusively by e-mail** by **08.02.2024** to the **Head of the Department of Computer Engineering, Dr.-Ing. Christian Herglotz, Brandenburg University of Technology Cottbus-Senftenberg**, e-mail: christian.herglotz@b-tu.de



Publication date: 18.01.2024

Valid until: 08.02.2024