



Paderborn University is a high-performance and internationally oriented university with approximately 20,000 students. Within interdisciplinary teams, we undertake forward-looking research, design innovative teaching concepts and actively transfer knowledge into society. As an important research and cooperation partner, the university also shapes regional development strategies. We offer our more than 2,600 employees in research, teaching, technology and administration a lively, family-friendly, equal opportunity environment, a lean management structure and diverse opportunities.

Join us to invent the future!

In the **Department of Computer Science**, which is part of the **Faculty of Computer Science, Electrical Engineering and Mathematics**, the following position is to be filled as soon as possible:

Professor – W 3 (f/m/d) “Algorithms and Software Development for Quantum Computers“

(Heinz Nixdorf Endowed Professorship)

This position is intended to create a link between the research areas of High Performance Computing and Quantum Systems with the associated interdisciplinary scientific institutions Paderborn Center for Parallel Computing (PC2), Institute for Photonic Quantum Systems (PhoQS) and Heinz Nixdorf Institute (HNI) as well as the participating faculties of Electrical Engineering, Computer Science and Mathematics and Natural Sciences. The establishment of this new professorship is supported by the Heinz Nixdorf Foundation.

The search is for an internationally outstanding scientist with a research focus on the development of algorithms and software for quantum computers, for example in the following methodological areas:

- Algorithms for quantum computers or hybrid methods combining classical HPC with quantum computing
- Software engineering methods for effective programming and use of quantum computers
- Efficient simulation of quantum computers

Exceptionally well-qualified candidates with other areas of focus in the field of quantum computing with application relevance may also be considered.

In particular, the area of work should include the practical use of quantum computers for application areas that are connectable to research topics at the above institutions, for example:

- Quantum mechanical simulation of solids or molecular systems
- Quantum machine learning, especially for applications in the natural sciences and engineering
- Optimization problems especially with applications in economics

In teaching, we expect an expansion of the course offerings for basic and advanced courses in quantum computing especially for computer science and computer engineering majors, as well as a commitment to the required courses of the aforementioned majors. The ability and willingness to participate in academic self-administration, as well as to teach in German and English and to develop digital teaching formats are required.

Success in obtaining competitive external funding commensurate with the academic age and previous environment is expected for a successful application. Furthermore, we expect participation in the design and application of major projects and the willingness to actively participate in existing research institutions (PC2, PhoQS, HNI).

With its participation in 3 DFG research groups, 9 Collaborative Research Centers, 13 interdisciplinary research institutions, 9 Research Training Groups and 14 Priority Programs, the University of Paderborn is the ideal environment for the implementation of bold research ideas. As the site of one of eight national of Germany-wide high-performance computing centers in the NHR network, the university offers outstanding computing resources and technology for implementing these ideas. Due to the funding through the Heinz Nixdorf Foundation, the professorship has attractive staffing, ongoing funding, and initial equipment funding.

Hiring requirements: § 36 Abs. 1 Ziff. 1-4 HG NW – University law of the State of NRW – (completed university degree, pedagogical aptitude, Ph.D. degree and additional research achievements).

Since Paderborn University seeks to increase the number of female professors, applications of women are especially welcome. In case of equal qualification and scientific achievements, they will receive preferential treatment according to the North Rhine-Westphalian Equal Opportunities Policy (LGG), unless there are cogent reasons to give preference to another applicant. Likewise, applications of disabled people with appropriate qualification are explicitly requested. This also applies to people with equal status according to the German social law SGB IX.

For further information, please contact the Head of the Department of Computer Science at Paderborn University, Prof. Dr. Christian Scheideler (eim-i-prodekan@uni-paderborn.de).

Applications with the common material, including a research and teaching plan, must be received by **31st March 2023 (Ref. No. 5680)** via the application portal of the University of Paderborn:
<https://bewerbung.uni-paderborn.de/stellen/5680>.

Information regarding the processing of your person data: <https://www.uni-paderborn.de/zv/personaldatenschutz>.

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