



The University of Lübeck is known for its excellent research and excellent teaching. We are a modern foundation university with thematically focused courses. Under the motto "Focus on life", we as a life science university offer a spectrum from medicine, health sciences and psychology to mathematics, computer science, natural sciences and technology.

There is a position at the Institute of Information Systems (Director: Prof. Dr. R. Möller; Research group of Prof. Dr. S. Groppe) of the University of Lübeck as soon as possible to be filled as

PhD Student(m/f/d)

for a limited period until 31.12.2024 in full time (38,7 hours per week). The position is funded by the Federal Ministry of Education and Research (BMBF).

The widely used relational database management systems (RDBMS) translate queries into expressions of the relational algebra. In many RDBMS, the best estimated query execution plan is exhaustively searched for among all possible. Optimizing transaction schedules determines the optimal order of parallel execution of transactions for the best performance. Both optimizations, the optimization of queries as well as of transaction plans, can be reduced to the application of basic mathematical optimization approaches and accelerated by quantum computers.

Main areas of activity:

- Research in the area of database optimization (of queries and transaction schedules) with and without quantum computers
- Integration of the developed approaches into an existing, widely used open source database management system and experimental comparison of the developed approaches
- Publication of the research results

Requirements:

- PhD student: Very good degree (master's degree or comparable) in computer science or a comparable course of study
- Postdoc: Very good doctorate with a focus on quantum information theory / quantum computing
- Good knowledge of English, communicative and reliable
- Experience in software development
- Knowledge of databases and their optimization, and quantum computing are an advantage

The salary will be in accordance with the automatic tariff if the tariff requirements are fulfilled up to pay group 13 TV-L.

The University of Lübeck sees itself as a modern and cosmopolitan employer. We welcome your application regardless of your age, gender, cultural and social origin, religion, worldview, disability or sexual identity. We promote gender equality. Women will be given priority if they have equal suitability, ability and professional performance. As an applicant with severe disabilities, we will give you priority if you are suitable.

If you have any further questions about the job position, please contact Prof. Dr. Sven Groppe (groppe@ifis.uni-luebeck.de, phone +49 451 3101 5706), who will be happy to help.

Please send written applications with the usual documents (cover letter with research interests, curriculum vitae, certificates) stating the **reference number 1078/22** in a PDF document by **October 16, 2022** (date of receipt) at the latest to bewerbung@uni-luebeck.de or by post to:

Universität zu Lübeck – Die Präsidentin – Referat Personal
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