Leibniz Supercomputing Centre
of the Bavarian Academy of Sciences and Humanities

The Leibniz Supercomputing Centre (Leibniz-Rechenzentrum, LRZ) stands at the forefront of its field as a leadership-class IT service and computing user facility serving Munich's top universities and colleges as well as research institutions in Bavaria, Germany, and Europe. As an institute of the Bavarian Academy of Sciences and Humanities, LRZ has provided a robust, holistic IT infrastructure for its users throughout the scientific community for nearly sixty years. It offers a complete range of resources, services, consulting, and support – from e-mail, web servers, and Internet access to virtual machines, cloud solutions, data storage, and the Munich ScientificNetwork (MWN).

Home to SuperMUC-NG, LRZ is part of Germany's Gauss Centre for Supercomputing (GCS) and serves as part of the nation's backbone for the advanced research and discovery possible through high-performance computing (HPC). In addition to current systems, LRZ plays a leading role in future-facing initiatives focusing on the evaluation of emerging Exascale-class architectures and technologies, development of highly scalable artificial intelligence and machine learning, and system integration of quantum acceleration with classical supercomputing.

We have an opening for:

Quantum Computing Software Engineer (f/m/d)

The LRZ Quantum Computing Group is a new group of specialists at LRZ dedicated to providing, researching, and advancing quantum computing technologies for the Bavarian and international quantum communities. The QC team provides users with a broad portfolio of resources and services, including quantum simulators, remote access to quantum hardware, scientific consultancy, and education/training. More experimentally, this team explores and develops integration pathways for quantum acceleration capabilities in next-generation high-performance computing (HPC) systems. As a member of this team, you will work at the very forefront of conceptualizing and providing new tools and methods; working with new innovative hardware technologies; evaluating and developing software stacks, programming models and abstraction layers; and building unique solutions to aid quantum computing end-users in the advancement of their research. Your work will be instrumental in shaping Bavaria's reputation as a global quantum hotspot and in pushing the boundaries of innovative scientific discoveries achievable with quantum computing.

Your Role

This position is part of a newly launched BMBF project on Digital-Analog Quantum Computers (DAQC). DAQC aims to establish a new paradigm in quantum technology by combining general-purpose quantum computing devices with analog specializations.

The creation, implementation and operation of a series of DAQC prototypes on-site as well as the development of the necessary system software and programming environments defines the project's mission. You will work as part of a project team with experts from both worlds, quantum physics and high-performance computing (HPC), with the explicit goal of forming a bridge between the two domains.

Your Responsibilities

- Develop approaches for programming of quantum computing device
- Develop software environments for novel quantum circuits
- Support development of concepts for the integration of quantum devices and high-performance computing
- Collaborate with internal and external project partners
- Publish papers and represent project results to the academic community

Basic Qualifications

- Master's degree in quantum physics, computer science, electrical engineering, mathematics or related
- Basic experience in quantum computer programming
- Extensive programming skills including low-level programming
- Proficient oral presentation and writing skills in English
- Strong desire to contribute your education, experience, energy and enthusiasm to help build a dynamic and progressive quantum computing team and share in its success

Preferred Qualifications

- Ph.D. in quantum physics, computer science, electrical engineering, mathematics or related, or interest in acquiring a Ph.D. in one of these areas
- Extensive experience in quantum computer programming and compiler design
- Good HPC programming (MPI/OpenMP) and scripting language skills
- Prior experience with quantum computing devices
- Knowledge of HPC environments and system software
- Proficiency with the German language, or intent to gain proficiency

What you can expect from LRZ

- Ample room for contributing and implementing your own ideas
- A smart, motivated, fun, and tightly coupled team with an important mission in which to join and of which to be part
- An organization that greatly values your contribution to our common success

We offer a multifaceted and intellectually stimulating position with flexible working hours and a family-friendly atmosphere in one of the largest and most innovative scientific data centres in Europe. You will work in a dynamic, collaborative and innovative team characterised by an excellent working atmosphere and creative leeway. Salary and benefits are compensated according to the collective employment agreement of the German Federal States (Tarifvertrag der Länder, TV-L). Classification is based upon qualifications and assigned duties. LRZ operates flexible work schemes. Handicapped persons will be given preference to other equally qualified applicants. As an Institute of the Bavarian Academy of Sciences, we are an equal opportunity, affirmative action employer and strongly encourage applications from women, men, and non-binary alike, regardless of social or cultural background.

This full-time position is limited to four years (with possibilities for extensions depending on funding) and is to be staffed immediately.

We are looking forward to receiving your complete application documents (including cover letter, CV and certificates) in a single PDF file via e-mail by latest **21.03.2021**:

E-Mail: jobs@lrz.de
Subject: **QC-SE (2021/16)**

If you have open questions regarding this position, our colleagues are happy to answer them at the above e-mail address. Please follow www.lrz.de/wir/stellen for information regarding the EU General Data Protection Regulation and our application procedure.

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Leibniz Supercomputing Centre
Boltzmannstr. 1
85748 Garching near Munich
www.lrz.de