

Jacobs University is a private, state-recognized, English-language research university in Bremen. It offers bachelor, master and PhD programs in the focus areas health, mobility and diversity and is involved in the professional development of specialists and managers and in the transfer of knowledge. The guiding principles include the highest standards in research and teaching, interculturality and systematic cross-disciplinary cooperation. The aim is to optimally prepare talents from all over the world for responsible tasks in a globalized world of work. More than 1,500 people from over 120 nations currently live and learn on campus.

The Large-Scale Scientific Information Systems group at Jacobs University Bremen in the Focus Area Mobility, Computer Sciences & Electrical Engineering, invites applications for several fulltime, fully funded positions available for bright, enthusiastic minds willing to deliver; currently open:

### **PhD Position - Computer Science (m/f/d)**

(Full-time, limited for 3 years)

Main research focus is on Array Databases. This NewSQL class of systems extends (relational) database models with query and storage support for large multi-dimensional arrays. In the Earth sciences these occur, e.g., as 1-D sensor time series, 2-D satellite maps, 3-D x/y/t image time series and x/y/z seismic data, and 4-D x/y/z/t climate / ocean modeling data. Likewise, Life Sciences need array support, e.g., for 3-D/4-D brain images and gene expression data. "Large" in this context means Terabyte, Petabyte, and in future Exabyte sizes per single object. Queries range from simple data extraction to complex ad-hoc processing.

Jacobs University has a strong reputation and leading position in array databases. Topics addressed in our research group encompass all aspects of array databases, encompassing conceptual modeling, query languages, optimization, architectures, parallelism, distribution, benchmarking, and applications in Earth, Space, Life, and further sciences; recently, we are transcending the array paradigm towards further scientific data types. Our research platform is open-source rasdaman ("raster data manager", see EarthLook demo), the first operationally used and "most comprehensive" [Rona Machlin, ACM PoDS] implementation of an array DBMS. Tight project collaborations exist with earth, space, and life science researchers worldwide, such as with NASA and ESA in the EarthServer project. In the Open Geospatial Consortium we are shaping interoperable geo service standards. In 2011, we have established the Array Databases Workshop to establish a community platform.

Salaries are highly competitive. Ph.D. students will be funded for three years, in which they are expected to complete their Ph.D.; an internship at some partner institutes are foreseen. Research programmer and Postdoc positions will be for two years initially, with an option to prolong depending on performance. Additional funding - e.g., for conference trips - is available for team members who achieve and maintain excellent performance. The work will be roughly split between basic research and application development.

Requirements: You, the successful candidate, will have a degree in Computer Science, a solid background in databases, demonstrated programming skills in C++ and/or Java, enthusiasm to deliver spearhead contributions, and interest (postdoc: experience) in highly interdisciplinary research. You are strong in team work and both written and oral communication. Excellent command of English is a must, no knowledge of German language is required.

Jacobs University Bremen is an international research university. The university has been recognized as "elite university" by the New York Times. The Computer Science Department has

been ranked in top positions by karriere.de and CHE. In this all-english environment students from 110 nations experience an optimal teacher/student ratio of about 1:10. Jacobs offers a spectrum of services, such as career planning, language training courses, as well as general counseling. Not the least, there is a vibrant social life with manifold student clubs and activities on and off campus. Living costs are below German average, finding housing not a problem.

**We offer:**

- Working on a modern campus
- Flexible working hours
- Choice of 4 dining halls on campus
- Easy accessibility by public transport and plenty of parking on the premises
- Various health and sports offer

**Ihre Bewerbung:**

Ihre aussagekräftige Bewerbung senden Sie bitte unter Angabe der Job ID, Ihrer Verfügbarkeit und Gehaltsvorstellungen als pdf-Dokument per Email an Herr Bakhtiar, Human Resources, an [job-application@jacobs-university.de](mailto:job-application@jacobs-university.de).

Die Sichtung der eingehenden Bewerbungen beginnt unmittelbar und endet mit der Besetzung der Vakanz.

Die Jacobs University bietet allen qualifizierten Bewerbungen volle Chancengleichheit.