

## **Helmholtz-Zentrum Dresden-Rossendorf e.V.**



With cutting-edge research in the fields of ENERGY, HEALTH and MATTER, around 1,500 employees from more than 70 nations at Helmholtz-Zentrum Dresden-Rossendorf (HZDR) are committed to mastering the great challenges facing society today. The Center for Advanced Systems Understanding (CASUS) is a German-Polish research center for data-intensive digital systems research. The Department of Scientific Computing Core is looking for a PhD Student (f/m/d) GPU-Computing for HPC und AI.

### **PhD Student (f/m/d) GPU-Computing for HPC und AI**

City: Dresden; Starting Date: 01/04/25; Duration: 36 months; Remuneration: TVöD-Bund; Reference number: 2025/015; Closing date: 28/02/25

#### **Working field**

- Research in GPU programming and (highly) parallel programming for HPC applications and DNN models
- Own research focus related to GPU programming such as:
  - parallel programming models or programming abstractions,
  - parallel GPU algorithms for HPC simulations,
  - parallelization of DNNs, or
  - performance analysis and optimization
- Working with application field scientists from various fields and different levels of IT background and their ambitious HPC codes or DNN models
- Work on data-intensive HPC workflows and integration with Research Data Management for HPC / DNNs
- Publishing results in academic and peer-reviewed journals with own research focus topics and in collaboration with application field scientists, presenting results at scientific meetings

#### **Requirements**

- Completed university studies (Master/Diploma) in the field of Computer Science or Computational Science, Physics, Chemistry, Mathematics or related field with a strong Computational Science Focus
- Excellent programming skills in at least one of C/C++, Fortran, or Julia (more are a plus)
- Experience with parallel programming with at least one of CUDA/HIP, Alpaka or Kokkos, MPI, OpenMP, HPX, or similar
- Experience with software development tools and build systems, git and collaborative development, as well as debugging
- Experience with Linux, working on command line and with shell scripts. Knowledge of HPC environments is a plus
- Strong motivation to work in a collaborative environment within interdisciplinary teams

- Excellent communication skills in English and in a professional context, German or Polish language skills are a plus

### **What We Offer**

- A vibrant research community in an open, diverse and international work environment
- Scientific excellence and extensive professional networking opportunities
- A structured PhD program with a comprehensive range of continuing education and networking opportunities - more information about the PhD program at the HZDR can be found here
- Salary and social benefits in accordance with the collective agreement for the public sector (TVöD-Bund) including 30 days of paid holiday leave, company pension scheme (VBL)
- We support a good work-life balance with the possibility of part-time employment, mobile working and flexible working hours
- Numerous company health management offerings
- Employee discounts with well-known providers via the platform Corporate Benefits
- An employer subsidy for the "Deutschland-Ticket Jobticket"

### **Application**

We look forward to receiving your application documents (including cover letter, CV, diplomas/transcripts, etc.), which you can submit via our online-application-system: <https://www.hzdr.de/db/Cms?pNid=490&pLang=en&pOid=73689>

More information at <https://stellenticket.de/190917/>

Offer visible until 13/02/25

