The Jülich Supercomputing Centre (JSC) is a research subinstitute that operates one of the most powerful supercomputer infrastructures for scientific and engineering applications in Europe, situated within Research Center Jülich (FZJ), member of Helmholtz Association.

To advance large-scale machine / deep learning (ML/DL) research with High Performance Computing (HPC), JSC sets up a High Level Support Team (HLST). Focused on software development and research support for ML/DL, HLST will become part of the recently launched Helmholtz Artificial Intelligence Cooperation Unit (HAICU). HAICU is a Helmholtz-wide platform consisting of 6 Helmholtz Research Centers across Germany, FZJ being among them. HAICU aims to reach an international leadership position in basic and applied AI research by combining advanced methods from ML/DL with Helmholtz’ unique scientific questions and data sets - bringing together scientists from all Helmholtz centers, scientific partner institutions and industrial partners and fostering open, transdisciplinary research. At JSC, HLST will work close together on implementing Helmholtz AI locally with the research-oriented Cross-Sectional Team Deep Learning (CST-DL). The research topics will include large-scale, self-organized continual learning for growing multi-task general AI models on modular supercomputers, and methods for establishing physics-aware adaptive simulation - learning loops transferable across various domains. Special focus will be on making use of highly scalable and distributed ML/DL methods on HPC facilities hosted directly at JSC. The activity will be strongly dedicated to principles of open science and open source software, making all the results transparent and all the tools available to scientific communities and public.

We are looking to recruit a member of HLST

2020-050 - Software Engineer and Researcher Large-Scale HPC Machine / Deep Learning

Your Job:
• Conduct research and open source software development, provide research support for Machine Learning / Deep Learning and related methods with focus on large-scale HPC applications
• Work close together with Cross-Sectional Team Deep Learning based at JSC to define and push forward common long-term research goals and open software libraries, platforms and data services with high usability and impact across domains and ML/DL community
• Engage in national and international ML/DL communities to spread Helmholtz AI impact
• Provide and coordinate support to HAICU research community for their scientific projects that involve ML/DL technologies and tools, including symposia, workshop and hackathon organization
• Assist HSLT in acquiring new research projects and funding, in publishing and presenting research outcomes of the projects supported by HLST, in making documentation for workflows and tools, releasing and maintaining open source software

Your Profile:
• Master or Doctorate degree in computer science, machine learning, mathematics, physics or a related subject
• Research experience in ML/DL field, documented in either your dissertation, peer-reviewed publications, project experience or participation in top conferences (NeurIPS, ICLR, ICML, etc)
• Practical experience with ML/DL toolchains and workflows documented in either your dissertation, peer-reviewed publications, or project experience
• Advanced experience with high level programming languages (C++, Python) and best software engineering practices, experience with deploying and maintaining open source software
• Experience with High Performance Computing (ideally ML/DL related, CPU and GPU-based)
• Very good knowledge of English in written or spoken form
• Good communication and presentation skills, ability to network within ML/DL community

Our Offer:
• Work on frontiers of scientific and technological challenges with access to cutting-edge and unique supercomputing systems (e.g. also quantum computers like D-WAVE)
• Become a foundational and fundamental member of one of the biggest AI initiatives in Germany
• Develop your academic career and engage in the supervision of students in the highly diverse fields
• If desired, option towards obtaining a PhD degree can be offered in frame of Helmholtz School for Data Science in Life, Earth and Energy (HDS-LEE) that provides an interdisciplinary environment for educating the next generation of data scientists in close contact to domain-specific knowledge and research. Application to HDS-LEE is possible after PhD topic is defined.
• Freedom to work on your own research questions for a substantial fraction of your working time
• Outstanding research and computing infrastructures in one of Europe’s largest supercomputing facilities
• Limited for 2 years with clear possible longer-term prospects (long-term HAICU funding already set and confirmed)
• Flexible working hours and various opportunities to reconcile work and private life
• Full-time position with the option of slightly reduced working hours
• Salary and social benefits in conformity with the provisions of the Collective Agreement for the Civil Service (TVöD)

Forschungszentrum Jülich promotes equal opportunities and diversity in its employment relations.

We also welcome applications from disabled persons.