Are you a researcher in science, technology, engineering or math with deep technical interest and love for AI? Then, it is time for you to go Exascale. Our Simulation and Data Lab for Applied Machine Learning in the Jülich Supercomputing Centre (JSC) applies Machine Learning on the largest scales. In exciting projects, we develop novel apply AI methods for science with other scientists and their data. In other projects, we scale up AI methods for images, text or other modalities. We are especially excited to expect JUPITER, Europe’s first Exascale computer, to be installed in Jülich in 2024. In the next years, we will develop algorithms to scale up ML workflows on this machine. We will train Large Language Models and powerful Diffusion models and will build to tools to create new breakthroughs.

We are looking to recruit a

**HPC Researcher - AI on Exascale**

**Your Job:**
In this position, you will be an active part of our Simulation and Data Lab Applied Machine learning. In national and European projects, you will develop new, innovative applications of Machine Learning on the Exascale computer JUPITER. In particular, your work will include:

- Developing, implementing and refining ML techniques suited for the largest scale
- Parallelizing model training and optimizing the execution
- Supporting the startup phase for JUPITER with benchmarking
- Diving deep into technical aspects of efficiency, parallelization and benchmarking
- Engaging in national and international ML/DL communities, most importantly helmholtz.ai, the Helmholtz Artificial Intelligence Cooperation Unit: [https://www.helmholtz.ai](https://www.helmholtz.ai)
- Presenting research results at scientific meetings, conferences, and as scientific papers
- Contributing to educational events, such as courses and hackathons

**Your Profile:**
• Excellent Master or PhD degree in Computer Science, Mathematics, Physics, or similar fields
• Good knowledge in AI and applied Machine Learning
• Hands-on experience with High Performance Computing Systems
• Elementary knowledge of System Architecture of Supercomputers and NVidia GPUs
• Practical experience with ML/DL workflows and common software libraries
• Your experience should be documented in research papers and Open Source code projects
• Self-motivated personality, curiosity of working in a multi-disciplinary team environment on scientifically challenging problems
• Very good command of written and spoken English

The PhD degree is not a prerequisite for application. It is possible to do a PhD in this subject area during employment.

Our Offer:
We work on the very latest issues that impact our society and are offering you the opportunity to actively help in shaping change. Here is what Forschungszentrum Jülich can offer you:
• An exciting and varied role at the forefront of research in an international and interdisciplinary working environment
• Work on frontiers of scientific and technological challenges with access to cutting-edge and unique supercomputing systems including Quantum Computers and JUPITER, the upcoming first Exascale computer in Europe
• Comprehensive training courses and individual opportunities for personal and professional further development
• Extensive company health management
• Ideal conditions for balancing work and private life, as well as a family-friendly corporate policy
• Flexible work (location) arrangements, e.g. remote work
• Flexible working hours in a full-time position (39 hours/week) with the option of slightly reduced working hours
• 30 days of annual leave and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)

In addition to exciting tasks and a collaborative working atmosphere at Jülich, we have a lot more to offer: https://go.fzj.de/benefits

You will be initially employed for a fixed term of 2 years but with the prospect of longer-term employment. Salary and social security benefits will conform to the provisions of the Collective Agreement for the Public Service (TVöD-Bund), pay group 13-14, depending on your current qualifications and the precise nature of the tasks assigned to you.

We particularly welcome applications from people from a diverse range of backgrounds (e.g. regardless of age, gender, disabilities, sexual orientation/identity, as well as social, ethnic, and religious background). We strive to offer a diverse and inclusive working environment in which people enjoy equal opportunities and are able to fulfill their potential.