Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,400 employees in one of Europe’s biggest research centres and help us to shape change!

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our Online-Recruitment-System!

Questions about the vacancy?
Get in touch with us by using our contact form.
Please note that for technical reasons we cannot accept applications via email.
www.fz-juelich.de

Do you hold a doctoral degree in science, technology, engineering, or math? Have you applied AI techniques, preferably using self-supervised learning? If so, it’s time to expand your horizons! Our Simulation and Data Lab, ‘AI and ML for Remote Sensing’ at the Jülich Supercomputing Centre (JSC) is looking to recruit a postdoctoral researcher interested in advancing self-supervised learning for applications in Earth observation. We tackle challenging datasets, generate innovative research questions, train large-scale deep learning models, and push the boundaries of what’s possible with AI and supercomputing. In our work, we utilize major HPC systems and focus on how vast amounts of unlabeled data, when paired with significant computational resources, can be harnessed for impactful real-world applications, including satellite data and various other modalities.

We are looking to recruit a

**Postdoc in AI with HPC - Advancing Earth Observation through Foundation Models**

**Your Job:**
You will join the Simulation and Data Lab ‘AI and ML for Remote Sensing,’ which aims to enhance visibility in interdisciplinary research between applications from remote sensing and large-scale AI with high-performance and innovative computing. You will conduct independent research on self-supervised learning, focusing on applications in satellite remote sensing, but also considering the potential to apply these methods to different domains. Specifically, you will:

- Develop, implement, and refine Machine Learning (ML) techniques for self-supervised Deep Learning (DL) for scientific and large-scale datasets
- Implement parallel ML training on the High Performance Computers, including JUPITER, Europe’s first exascale computer
- Prepare, process and publish datasets and benchmarks for self-supervised learning in science
• Engage in national and international ML/DL communities, most importantly the Helmholtz Foundation Model Initiative
• Present research results at scientific meetings, conferences, and as scientific papers
• Contribute to educational events, such as hackathons, data challenges and courses

Your Profile:
• Completed university studies (masters degree) and a doctoral degree in computer science, applied mathematics, computational science and engineering or a related subject
• Strong capabilities in software engineering and programming are essential. You should have very good knowledge of and practical experience with machine learning (ML) and deep learning (DL) workflows, including familiarity with common software libraries used in these fields
• Experience with high-performance computing (HPC) systems is highly desirable, reflecting your ability to manage and analyze large datasets effectively
• Very good knowledge and experience in applied ML
• A broad interest in scientific topics is essential
• Very good command of written and spoken English is required to facilitate clear and effective communication within our global research environment
• Your expertise should be well-documented through research papers and contributions to open-source code projects, demonstrating your experience in applying machine learning techniques to large-scale data science problems
• Self-motivated personality, with the ability to work within a multidisciplinary team environment to tackle challenging problems

Our Offer:
We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We support you in your work with:
• Work on frontiers of scientific and technological challenges with access to cutting-edge and unique supercomputing systems including the upcoming first Exascale computer in Europe (JUPITER)
• The opportunity to attend national and international conferences
• Close support and mentoring from your team leader on a weekly basis
• 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 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 collegial working environment, we offer you much more: https://go.fzj.de/Benefits

We offer you an exciting and varied role in an international and interdisciplinary working environment. The position is initially for a fixed term of 2 years, with possible long-term prospects. Salary and social benefits will conform to the provisions of the Collective Agreement for the Public Service (TVöD-Bund), pay group 13-14, depending on the applicant’s qualifications and the precise nature of the tasks assigned to them.
We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.