The development of complex materials with tailored properties as well as the understanding of the underlying mechanisms require an integrative combination of data analytics and material characterization with theory, simulation, and research data management. In particular, for computer-aided analysis of (image) data from electron microscopy, artificial intelligence methods such as Deep Learning (DL) offer excellent potential. The multidisciplinary Institute for Advanced Simulations - Materials Data Science and Informatics (IAS-9) combines disciplines ranging from data analysis and materials simulation to research data management and software development under one roof (https://go.fzj.de/IAS-9). Together with the Ernst Ruska Center for Microscopy and Spectroscopy with Electrons (ER-C), IAS-9 is establishing a "Simulation and Data Science Lab for Electron Microscopy," where one focus is on data mining, image analysis and AI-based data science for electron microscopy. Here, the work at Forschungszentrum Jülich benefits from a unique infrastructure with a wide range of disciplines and from an interdisciplinary, data-intensive research environment. In particular, a close connection to the "Helmholtz Imaging Platform" (HIP), the "Helmholtz Metadata Collaboration Platform" (HMC) and the "Helmholtz Artificial Intelligence Cooperation Unit (HAICU)" as well as the close interaction with the Jülich Supercomputing Centre (JSC) offer unique opportunities for new synergies between characterization, data analytics and simulation.

We are looking to recruit a

Research Group Leader for Data Science and Machine Learning in Microscopy

Your Job:
You will strengthen the data science and machine learning activities of the IAS-9 and ER-C with exciting new topics. You will work in a multidisciplinary team of enthusiastic data scientists, programmers and scientists on:

- Development and application of generic methods, algorithms and software tools, e.g.
for multimodal or multi-/high-dimensional data analysis, time series analysis and prediction, inverse modelling, and coupling of simulation or DL models and experiment

- You will also work on the development and application of image- and microscopy-related methods and tools, such as reconstruction, denoising, inpainting or segmentation of 2D/3D/4D image data as well as high throughput data mining and adaptive sampling for microscopy
- Involvement in the establishment and coordination of a research group within the thematic spectrum of a “Data Science Lab for Electronmicroscopy”
- Identification and further development of exciting future research questions and scientific topics in the context of artificial intelligence methods
- Participation in cross-center, Helmholtz-wide activities in the field of data-driven research
- Supervision of student research projects and theses

Your Profile:
We are looking for a highly motivated colleague who is excited about new scientific endeavors with interdisciplinary approaches. For this you have:
- A completed university degree (Master) and a doctorate in data science, computer science, mathematics, materials science, physics, or a related subject
- Research experience in the area of data analysis, data mining and ML/DL demonstrated through, e.g., the dissertation, publications in peer-reviewed journals or open source projects
- Very good practical experience in data analysis and ML/DL
- Very good practical programming expertise (e.g., Python, Java, Julia, R, C/C++) and related libraries as well as solid experience in HPC/GPU environments and open source software development
- Leadership and organizational skills
- Ability to work in a committed and independent manner with flexibility and open-mindedness for new challenges

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:
- 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
- A creative working environment in a leading research institution on the attractive research campus of the Technology Center Aachen https://tza-aachen.de/
- Full-time position with the option of slightly reduced working hours and 30 days of annual leave
- Targeted services for international employees, e.g. through our International Advisory Service

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 in conformity with the provisions of the Collective Agreement for the Civil Service (TVöD). Depending on the applicant’s qualifications and the precise nature of the tasks, salary grade 13-14 TVöD-Bund.

Place of employment: Aachen
Forschungszentrum Jülich promotes equal opportunities and diversity in its employment relations.
We also welcome applications from disabled persons.