JÜLICH Forschungszentrum

Materials Data Science & Informatics IAS 9

Thesis (Bachelor, Master) - Deep Learning

Starting Date: winter semester 2023/2024

Our profile

The multidisciplinary Institute for Materials Data Science and Informatics (IAS-9) brings together disciplines ranging from data analysis and machine learning to materials theory, materials simulation, research data management and software development under one roof. In doing so, it addresses the issue of "information" and research data as a way to extract valuable knowledge from simulations, experiments, and microscopy in a highly interdisciplinary and multidisciplinary approach. Methods from the field of computational engineering science are used together with approaches and concepts from computer science, data science and information science.

Your tasks

- As part of your thesis, you will develop solutions for learning the relationship between material structures and material properties.
- You investigate image data based on Convolutional Neural Networks and current Deep Learning methods.
- You implement and evaluate your solution approaches prototypically in Python (PyTorch / TensorFlow)

Your profile

- You study data science, computer science, mathematics, materials science, physics, engineering or a related subject.
- You have good practical experience in Python or Julia or C/C++.
- You have good structured and analytical skills as well as a systematic, careful, independent, and reliable working method. You enjoy to solve complex problems.

Our Offer

- Intensive supervision of your thesis by an research employee
- An exciting work with personal responsibility in the research field of machine learning for material sciences

Our Contact

The institute is located in **Aachen** (TZA, Dennewartstr. 25 52068 Aachen)

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Your application should include a cover letter, CV, certificates of your academic degree(s) (including subjects taken and grades)