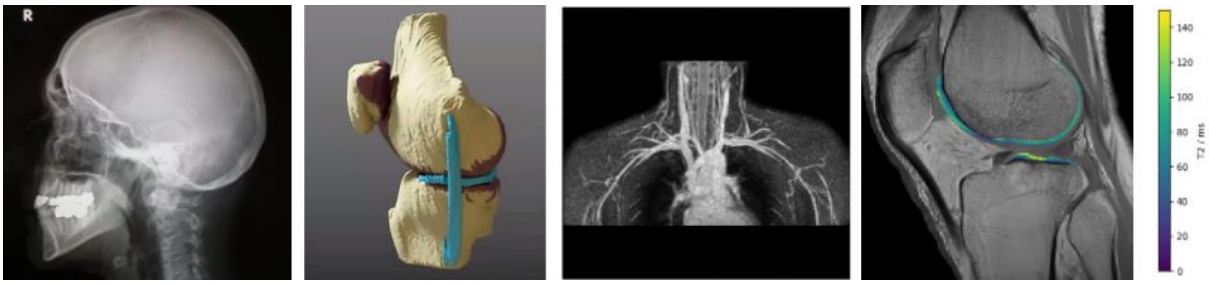


Master's Thesis

Diagnose like a Clinician – Developing AI Algorithms for the Automated Analysis of Chest X-Rays

Description

The Department of Diagnostic and Interventional Radiology (University Hospital Aachen) has a large dataset of approximately 200,000 chest X-rays with dedicated machine-readable labels that indicate the presence and severity of all relevant pathologies in the intensive care setting. Your task is the training and evaluation of dedicated AI algorithms for the automated diagnosis. You will make use of state-of-the-art machine learning methods (such as convolutional neural networks and transformer architectures) and use sophisticated data augmentation and algorithmic approaches to avoid potential biases. You will also use non-imaging data to further enhance the diagnostic capabilities of the AI algorithms.

Your Profile

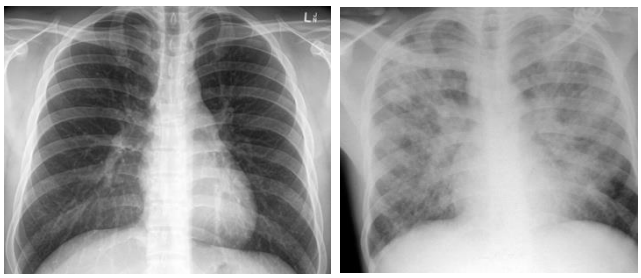
- Physics or engineering student with good grades;
- Familiarity with programming in Python (ideally PyTorch);
- A strong interest in and excellent general understanding of AI methods.

What we Offer

An interdisciplinary environment with medical doctors, post-docs in physics, and PhD candidates in engineering and physics. The machine learning group is led by PD Dr. med. Dipl.-Phys. Daniel Truhn (Radiologist and Physicist) and PD Dr. med. Sven Nebelung (Radiologist). Our research group is characterized by mutual support, close supervision, and regular scientific meetings.

Whom to Contact

Interested? Please get in touch via e-mail at snebelung@ukaachen.de or dtruhn@ukaachen.de. We are looking forward to hearing from you.



Example of a healthy (left) and pathologic (right) chest X-ray

UNIKLINIK RWTH AACHEN