



The German Cancer Research Center is the largest biomedical research institution in Germany. With more than 3,000 employees, we operate an extensive scientific program in the field of cancer research.

The Division of **Medical Physics in Radiology** is seeking a

## PhD Candidate for AI-based MRI Acquisition Optimization

(Ref-No. 2022-0420)

### Job description:

Within the recently established Carl Zeiss Foundation Center "Model-Based AI: Physical Models and Deep Learning for Imaging and Cancer Treatment", a subproject will develop AI-based systems for patient-specific MRI acquisition optimization.

Your research work will encompass:

- Signal modelling for optimal experimental design, i.e. optimal choice of MRI sequence parameters for separation of specific tissue properties
- Automated adaptation of MRI protocols (e.g. inclusion or omission of specific sequences, optimization of certain parameters) based on integration of automated lesion and artifact detection algorithms during the MRI acquisition
- Magnetic resonance fingerprinting for simultaneous acquisition of MRI parameters such as T1, T2, diffusion, and kurtosis with optimization based on partially acquired data

### Requirements:

Successful candidates will become members of a multidisciplinary international team and should:

- hold a graduate degree (master's / diploma) in physics, engineering, or a related scientific or technical field,
- possess keen interest in scientific research and be able to work independently,
- have good oral and written communication skills in both German (ideal) and English (mandatory).

Experience in MR physics including pulse sequence programming (preferred: C/C++, IDEA, MATLAB / Python) and AI-based image processing would be beneficial but is not a prerequisite.

### We offer:

- Interesting, versatile workplace
- International, attractive working environment
- Campus with modern state-of-the-art infrastructure
- Access to international research networks
- Doctoral student payment including social benefits
- Flexible working hours
- Comprehensive training and mentoring program through the Helmholtz International Graduate School

The position is limited to 3 years.

### Important notice:

The DKFZ is subject to the regulations of the Infection Protection Act (IfSG). As a consequence, only persons who present proof of immunity against measles as well as against COVID-19 may work at the DKFZ.

**For further information** please contact  
Prof. Dr. Mark Ladd, phone +49 (0)6221/42-2550.

The DKFZ is committed to increase the proportion of women in all areas and positions in which women are underrepresented. Qualified female applicants are therefore particularly encouraged to apply.

Among candidates of equal aptitude and qualifications, a person with disabilities will be given preference.

To apply for a position please use our online application portal ([www.dkfz.de](http://www.dkfz.de)).

We ask for your understanding that we cannot return application documents that are sent to us by post (Deutsches Krebsforschungszentrum, Personalabteilung, Im Neuenheimer Feld 280, 69120 Heidelberg) and that we do not accept applications submitted via email. We apologize for any inconvenience this may cause.

