



The LMU University Hospital Munich is one of the largest and most efficient university hospitals in Germany and Europe. 48 specialized clinics, departments and institutes provide excellent research and teaching and enable interprofessional and interdisciplinary patient care at the highest level. Our employees come from more than 100 countries.

The Klinik und Poliklinik für Strahlentherapie und Radioonkologie on the Campus Großhadern invites applications on the next possible date, in part time, for a

## PhD student (m/f/d)

### Klinik und Poliklinik für Strahlentherapie und Radioonkologie

#### Scope of duties

- In a research project based at the Department of Radiation Oncology of the University Hospital of the Ludwig-Maximilians-University (LMU) Munich, a PhD position (TV-L, 65-75%) in medical physics (Dr. rer. nat) investigating dose accumulation supported by deep learning-based auto segmentation in MR-guided radiotherapy is open
- The project will make use of data acquired with an MR-Linac (ViewRay MRIdian) that has recently begun clinical operation at the Department of Radiation Oncology of the LMU Munich. Our research group is focusing on the use of imaging data for adaptive radiotherapy and provides expertise in MR imaging, deformable image registration and deep learning
- The goals of the PhD project are: (1) Implementation of deep learning-based auto-segmentation in order to support (2) dose accumulation over the course of fractionated MR-guided treatment; (3) Investigation of the feasibility to improve treatment efficiency by accounting for the accumulated dose during plan optimization
- The research project will offer a broad spectrum of topics in the scope of MR-guided radiotherapy, including deep learning-based image processing, deformable image registration, as well as dose calculation, accumulation and optimization; the project duration will be 36 months

#### Our requirements

- Highly ranked MSc in Physics, preferably in Medical Physics or Biomedical Engineering
- Good understanding of physical processes relevant to radiotherapy and medical imaging
- Experience in applications of MRI, radiotherapy and image data processing
- Experience in programming with either Python or MATLAB, and Linux
- Experience in deep learning, preferably with TensorFlow, PyTorch or Keras
- Fluency in spoken and written English
- Technical proficiency, scientific creativity and team working skills

#### Our offer

- The working place will be at the Klinikum Großhadern, which is well connected with public transportation to the city of Munich
- The successful candidate will work in a highly motivated and well-established team within a multidisciplinary and international network embedded in a stimulating scientific environment with a long tradition of collaboration and excellence in biomedical research, with outstanding research and clinical infrastructures

Disabled persons will be preferentially considered in case of equal qualification. Applications from women are encouraged. Presentation costs cannot be refunded. For further information please contact Dr. Christopher Kurz, e-mail: [Christopher.Kurz@med.uni-muenchen.de](mailto:Christopher.Kurz@med.uni-muenchen.de).

Apply now