

# PhD – Foundation models for lesion tracking

(m/f/d)

Klinik und Poliklinik für Strahlentherapie und Radioonkologie

The Hospital of the University of Munich, Germany, is one of the largest and most competitive university hospitals in Germany and Europe. 48 specialized hospitals, departments and institutions harbouring excellent research and education provide patient care at the highest medical level with around 11.000 employees.

Workplace	Campus Großhadern	Date of entry	Next Possible Date
Working hours	Part time	Application deadline	28.02.2025
Institution	Klinik und Poliklinik für Strahlentherapie und Radioonkologie	Reference Number	2025-K-0029
Department	Research group		

In the scope of a research project in the Bavarian Center for Cancer Research (BZKF) Lighthouse Image Guidance in Local Therapies, a PhD position investigating the use of foundation models for lesion tracking on multiple modalities in local therapies is open at the Department of Radiation Oncology at the LMU Munich University Hospital (Prof. Dr. Guillaume Landry).

The project will seek to make use of the latest developments in image processing with artificial intelligence, where pre-trained foundation models can be applied a wide variety of tasks such as segmentation and tracking. More specifically, such models will be adapted to various modalities used in the local treatment of cancer, such as MRI-guided radiotherapy, endoscopic videos, intra-operative ultrasound imaging and others. An example application from our lab can be found in this publication. The position will be integrated in the BZKF Lighthouse Image Guidance in Local Therapies, bringing together all 7 Bavarian University Hospitals and providing a wide array of imaging datasets where lesions require localization, segmentation and tracking.

## Scope of duties

The candidate is expected to:

- Implement of state-of-the-art foundation models like efficient Track Anything Model (eTAM) for multi-model lesion tracking
- Containerization of the tracking software for deployment at all Lighthouse centers
- Evaluation of lesion tracking on several modalities


## Our requirements

- You have a high level MSc degree in Physics (preferably Medical Physics), Biomedical Engineering or Computer Science.
- You have a good understanding of physical processes relevant to medical imaging.
- You have excellent programming skills in Python.
- You have experience in deep learning, preferably with PyTorch.
- You have the ability to independently implement and customize novel deep learning architectures.
- You are fluent in English (written and spoken).
- Your strengths include technical understanding, scientific creativity and the ability to work in a team.

## Our offer

- The workplace will be at the Klinikum Großhadern, which is well connected to the city of Munich by public transportation.
- You will work in a highly motivated and well-established research group (2 senior researchers, 2 postdocs, 10 PhD and MSc students) within a multidisciplinary and international network embedded in a stimulating scientific environment at LMU Munich, which has a long tradition of collaboration and excellence in biomedical research and has an excellent research infrastructure and clinical infrastructure.
- Applicants with severe disabilities will be given preference if equally qualified.
- Remuneration is based on the Collective Agreement for the Public Sector of the Länder (TV-L) including all allowances customary in the public sector, PhD position available for 36 months (75% Part-time Position).
- The position will be embedded in the BZKF Lighthouse featuring a network of 6 PhD students. Funding is secured for exchanges between the Bavarian institutions.

## Offers and services of the employer

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|  Further education and training |  Job ticket                         |
|  Company pension scheme         |  Discounts                          |
|  Childcare services             |  Staff accommodation (if available) |
|  Mobile work (if suitable)      |  |

Herr Prof. Dr. Landry, Guillaume



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## Application format

Please use the Online-Form for your application

<http://www.lmu-klinikum.de/38d7e2153bfa59cc>

Disabled persons will be preferentially considered in case of equal qualification. Presentation costs cannot be refunded.

Please note that we cannot reimburse travel expenses incurred through interviews.

We ask you for your understanding that postal applications will not be returned, but will be destroyed in accordance

with data protection regulations. The data usage information also applies to postal applications