

Research profile for applicants

Name of DKFZ research division/group:	<i>Division of Intelligent Medical Systems (IMSY) / E130</i>
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RESEARCH PROFILE AND PROJECT TOPICS

Artificial intelligence (AI) is set to revolutionize various areas of everyday life. In healthcare, however, its integration into routine procedures and impact on patients are still limited. The mission of the Division of Intelligent Medical Systems (IMSY) is to tackle the unique challenges of medical imaging AI to generate lasting patient benefit. A particular focus of our research lies in the surgical application domain.

As a postdoctoral researcher in our division, you will take on a leading role in developing vision and vision-language foundation models for surgery. The goal is to learn general and transferable representations from large-scale surgical image and video data that can support a broad range of downstream applications. The project will place particular emphasis on novel self-supervised learning strategies, enabling effective use of unlabeled surgical data. Large-scale pre-training and downstream validation data are available within the division to achieve these goals.

We are looking for a highly motivated researcher with a strong background in the general field of AI and preferably prior work in self-supervised learning. Prior knowledge of surgery or the clinical domain is explicitly not required: you will acquire the necessary domain understanding throughout the project through close interaction with clinical experts and within an interdisciplinary research environment. Previous experience with video data or video understanding is desirable.

We offer an excellent environment for ambitious and computationally intensive research. You will have access to high-performance workstations, the DKFZ internal high-performance compute cluster (190 nodes with different architectures, totaling almost 10k CPU cores, 140 TB of RAM, and 400 NVIDIA GPUs spanning different architectures), as well as the JUPITER supercomputer.



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