

Cluster of
Excellence

**Matters
of Activity**



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DFG



Master Thesis Topic

Visuo-Haptic Exploration of Unknown Image Data



Your Profile

You are studying computer science and are interested in virtual or augmented reality, haptics, and medical image exploration. Ideally, you already have experience with VR, object-oriented programming languages (such as C++), and computer graphics.

Subject

The cluster of excellence *Matters of Activity* promotes interdisciplinary research. The *Virtual Dissection* project is fostering a collaboration between Humboldt-Universität zu Berlin, Zuse Institute Berlin, and Hochschule für Technik und Wirtschaft Berlin. Together we are investigating the potential benefits of virtual reality and haptics for the exploration of unknown image data (CT, MRI, etc). For that purpose, we are building prototypes that employ these novel technologies to ultimately test the potential for the gain of knowledge into form-function relationships in a case study of vertebrate paleontology. Paleontology researchers currently segment objects from image data using desktop-based two-dimensional tools. Our project aims to allow these professionals to interact with data in a novel and more intuitive three-dimensional way that would fully leverage their senses.

Our offering

Matters of Activity's »Virtual Dissection« is concerned with the potential utility of virtual reality technologies for anatomical and paleontological dissections and preparations. The proposed thesis topic allows an exciting introduction into virtual paleontology by creating novel interaction techniques. The thesis is supervised at our cluster in an interdisciplinary team of researchers. A powerful workstation, VR, and haptic hardware as well as a working place at our office in Berlin Mitte are provided. While you are expected to work in close cooperation with our team, the master thesis may be granted at a university of your choice – either in Berlin or any other city.

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