Fully Funded PhD/PostDoc Position Motion Analysis & XR Rehabilitation for Bionic Prosthetics

Charité – Universitätsmedizin Berlin is one of Europe's leading academic medical centers, combining more than 300 years of excellence in patient care, research, and education. With four campuses, around 100 clinics and institutes, and 17 interdisciplinary centers, Charité is internationally recognized for its scientific impact and consistently ranks among the world's top hospitals.

BG Klinikum Unfallkrankenhaus Berlin (ukb) is one of Germany's largest specialized trauma hospitals and a leading center for acute care, rehabilitation, and translational research. With more than 730 beds, 17 operating theatres, a dedicated research center, a comprehensive rehabilitation facility, and the Center for Bionics, ukb provides a unique environment for developing and translating innovative technologies into clinical practice.

We offer the opportunity to work at a high scientific level in an experienced research team at the intersection of research and clinic in a joint PhD at the Charité and Unfallkrankenhaus Berlin. Our extensive interdisciplinary infrastructure enables local as well as international co-operations across life sciences, technology and medicine. We strongly support first-author publications, international conference participation, research stays abroad, grant writing, and independent project development. This fully funded position provides an excellent opportunity to contribute to innovative research and make a significant impact in the field of extremity reconstruction.

The successful candidate will contribute to their own research projects as well as ongoing projects including motion tracking after prosthetic fitting, XR-based rehabilitation, and biophysiological data recording for sensorimotor assessment in limb reconstruction. Available infrastructure includes a state-of-the-art motion analysis laboratory with a multi-camera Vicon motion capture system, pressure distribution analysis, HD-sEMG/iEMG, EEG, eye tracking, ultrasound, physiological monitoring systems, as well as XR technologies. **Candidates interested in translating digital technologies into real-world clinical applications are particularly encouraged to apply.**

Located in Berlin, Charité and UKB offer an inspiring environment for both professional and personal growth. Berlin's dynamic scientific community and diverse cultural landscape provide endless opportunities for enrichment and networking. Opportunities for long-term academic development and independent research leadership are available for outstanding candidates.

Key Responsibilities	Qualifications
• **Research**: Develop and conduct innovative research projects in motion analysis, sensorimotor assessments, virtual rehabilitation (XR/VR), and bionic prosthetics. This includes designing experimental studies, acquiring and analyzing kinematic, physiological, and clinical data, applying advanced data processing and machine learning approaches, and publishing findings in peer-reviewed journals. Postdoctoral candidates will be encouraged to take a leading role in project development, grant applications, and student supervision. • **Projects**: Develop and validate digital technologies for clinical rehabilitation, including motion tracking systems, extended reality	• Master's or PhD degree in biomedical engineering, medical informatics, computer science, cognitive science, or a related technical or scientific discipline. • Programming experience in Matlab, Python, C#, Unity 3D or comparable. • Experience with biomedical assessment, analysis, and data processing (EMG, motion tracking, eye tracking, etc.). • Experience with motion capture, biomechanics, machine learning or signal processing is highly desirable. • Strong analytical and problem-solving skills. • Previous research experience demonstrated through publications, conference

applications, and human-machine interfaces. Conduct studies in patients with upper or lower limb amputations, and neuromuscular disorders to investigate movement quality, functional recovery, prosthetic control, and pain-related outcomes. Translate research findings into clinically applicable assessment and rehabilitation tools. • **Collaboration**: Work collaboratively with a multidisciplinary team of researchers, clinicians, and on campus prosthetic technicians. Engage in international cooperations across medicine and technology.	presentations, software development, or project involvement is advantageous. • Excellent written and verbal communication skills in English. Due to patient interaction, German B2 and higher is required. • Ability to work both independently and collaboratively within interdisciplinary teams of clinicians, engineers, and researchers. • High level of motivation, scientific curiosity, and commitment to translational research. • Enthusiasm for learning new methods and technologies and for developing innovative solutions to clinical challenges.
We Offer	
• Full funding for 3 years as per the German public service pay scale according to DFG regulations (PhD, TV-L E13/65%). The contract will comply with section 2.1 of WissZeitVG regulations with possibility of extension and permanent position after 6 years (PostDoc, TV-L E13/E14 100% depending on experience). • Opportunity to work in a high-caliber research team within leading academic and research environment. • Access to extensive interdisciplinary infrastructure and resources for conducting collaborative, advanced research. • Open and pleasant working atmosphere. Options for flexible working hours to accommodate work-life balance.	
Application Procedure	
Prospective candidates are invited to submit the following application materials as a single PDF file via email to the contact address provided to the right. Please ensure that your application is marked with the Code PROS2026 and submit: • a detailed CV, academic transcripts, certificates, and contact information for two references, • a motivation letter (2 pages) outlining your motivation for applying, relevant project and research experience, technical expertise, and professional development goals, • a brief research statement (1 page) describing how you would utilize the available biomechanical and XR infrastructure to address clinically relevant research questions. • Application deadline: The review of applications will commence immediately and will continue until the position is filled. Early submission is highly encouraged to ensure full consideration.	**Application contact**: Dr. Cosima Prahm, PhD MSc BA Head of Center for Clinical Research Center for Bionics Department of Hand, Replantation and Microsurgery BG Klinikum Unfallkrankenhaus Berlin Charité – Universitätsmedizin Berlin Germany cosima.prahm@charite.de