



Post-Doctoral Position in Surgical Planning



Interactive Graphics and Simulation Group Computer Science University of Innsbruck, Austria

The Interactive Graphics and Simulation Group, established in 2014 at the University of Innsbruck, Austria, invites applications for the position of a full-time post-doctoral researcher with focus on surgical planning and biomechanical simulation.

Description

We are seeking a qualified post-doctoral researcher with interest and skill in surgical planning applications. A main focus will be on numerical solvers and Finite Element simulations for biomechanical tissue deformation. The work will be carried out in the context of improving planning for forearm surgery, in the scope of a D-A-CH collaborative research project, funded through the FWF and SNSF, respectively, jointly with the University Hospital Balgrist in Zurich and the Institute for Surgical Technology, University of Bern, Switzerland. The responsibilities also denote working in a team of two other PostDocs, and with clinical partners.

The project targets the development of a reliable model for forearm motion, specifically for the distal radioulnar joint (DRUJ). Work tasks center on the geometric and biomechanical modelling of rigid and soft tissue of the anatomical structures of interest. This will entail an advanced forearm kinematic model of pro-/supination, handling related processes such as (self-)collision detection, the physical behavior of soft tissue, and the inclusion of biomechanical parameters.

Candidates should have earned a doctoral degree in a relevant field, possess a publication record commensurate with experience, and have demonstrated strengths in the areas outlined further below. A candidate showing enthusiasm for leading-edge research, team spirit, and capability for independent problem-solving is sought.

The position is open immediately until filled. It is offered for the duration of one year and three months, with a potential for extension, on the level of non-permanent university research staff. Salaries are internationally competitive and commensurate with qualification and experience.

Candidate Profile

- PhD degree in Computer Science, Applied Mathematics, Mechanical Engineering, or related fields
- Good knowledge in numerical solvers and Finite Element modelling for biomechanical simulation in surgical planning
- Experience in the medical domain and with clinical partners is an advantage
- Basic knowledge in interactive simulation and computer graphics is also a plus
- Good publication record in relevant fields
- Knowledge and experience in programming in C/C++
- Good level in English, both written and spoken
- Some experience in teaching and project management

Environment

The position is available within the Interactive Graphics and Simulation Group at University of Innsbruck, Austria. The applicant will join a modern and well-equipped research lab, which was initiated at ETH Zurich, Switzerland, and in 2014 moved to Innsbruck. The group has many years of experience in research related to surgical simulation, surgical planning, and interactive medical applications.

Innsbruck University, founded in 1669, is a public academic institution, located in the capital of the Austrian federal state of Tyrol, beautifully situated within the Alps. It offers a complete set of academic curricula, with currently about 28'000 students. The Institute of Computer Science has been founded in 2001, offers degrees at Bachelor, Master, and PhD level, and covers a broad range of focal research areas. The city of Innsbruck provides an outstanding quality of life and recreational opportunities all around the year. A large student population imprints a distinctive, international atmosphere upon this lively mountain city.

How to apply

Candidates should send electronically a statement of motivation, their curriculum vitae with a publication list, URLs to 2-3 selected publications (online only), contact information of at least two references, and scans of relevant transcripts and diplomas. The compiled material should be sent in PDF format to:

matthias.harders@uibk.ac.at

Please feel free to get in contact in case of questions.

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