Open Position with the Computer Graphics and Virtual Reality Group Bremen

PhD research position (full-time) (A137/14) with the Computer Graphics and Virtual Reality Group at the University of Bremen, Germany, to be filled as soon as possible

Project: Intra-Operative Information, What Surgeons Need When They Need it
Salary is according to the German Federal pay scale (TV-L 13, gross salary approx. EUR 40,000 p.a., supported in part by the DFG).

Project Description:
The tasks in this position involve development and implementation of novel methods and algorithms in the fields of computer graphics and virtual reality. The envisioned applications of the work will be in at least two exciting areas, namely in the operating room during surgery, and in CAD for assembly simulation, path planning, and virtual factories. In both areas (and many others), the real-time (or even more-than-realtime) simulation of the behaviour of geometries (e.g., organs or automotive parts) is paramount. In addition, the interaction with such objects in non-conventional settings (e.g., the operating room) requires novel, extremely efficient interaction metaphors.
More specifically, the research will focus on physically-based, mechanical simulation of deformable human organs (e.g., the brain or the liver), the simulation of rigid parts (e.g., automotive parts in an assembly line), and geometric algorithms and data structures for efficient proximity and intersection computations. This will require a good understanding of physically-based simulation algorithms, 3D computer graphics in general, and, possibly, interaction metaphors with 3D environments.

About us:
The position offers great opportunities for collaboration with other members of the project, such as the group for cognitive systems and the group for digital media, both at University of Bremen. In addition, collaborations will be done with the Fraunhofer Institute for Medical Visualization (Mevis) and several hospitals. Furthermore, the successful applicant will get the opportunity to collaborate with CAD software companies. This project provides a vibrant research environment where a broad range of activities related to medical IT systems, virtual reality, and CAD software are being pursued. The successful candidate will be working with a dynamic, friendly, and helpful team of computer graphics researchers. Our research group is part of the school of computer science at University of Bremen, which is a mid-sized university with about 20,000 students, a lot of them international ones, offering a broad range of fringe benefits such as sports facilities, cultural activities, and daycare.
**Qualifications:**
Candidates should have an excellent Master’s degree or equivalent in computer science or mathematics, or in a related discipline such as physics, etc. Ideally, you have specialized in real-time computer graphics or physically-based simulation, and you have good knowledge about applied mathematical methods and parallel programming. Required skills are solid experience in C++ software development, and a good command of English (reading/writing/speaking). In addition, the successful candidate will be highly self-motivated, passionate about their work, and have good ability to work both independently as well as in a team in a multidisciplinary environment.

**Conditions of employment:**
The position is available for a period of 3 years (under the condition of job release). The applicant will have the opportunity to work towards a doctoral degree.

As the University of Bremen intends to increase the proportion of female employees in science, women are particularly encouraged to apply. In case of equal personal aptitudes and qualification, disabled persons will be given priority. Applicants with a migration background are welcome.

**How to Apply & What to do in Case of Questions:**
Applications should comprise a cover letter, complete CV including any and all achievements, degree certificates (including list of courses and grades), names and contact details of at least two referees, and other credentials if any (e.g., recommendation letters, publications, etc.). Please address questions about the position and send your application (preferably by email) to:

Prof. Dr. Gabriel Zachmann, zach at cs.uni-bremen.de

Application deadline: 25th September 2014 (or until a suitable candidate is found).

G. Zachmann  
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For a paper-based application, please make sure to only send document copies as all received application material will be destroyed after the selection process.