# Open Position with the Computer Graphics and Virtual Reality Group Bremen

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

Project: *Camera-based tracking of articulated objects in real-time and in large volumes*
Salary is according to the German Federal pay scale (TV-L 13, gross salary approx.
EUR 40,000 p.a.).

*Project Description*:
The tasks in this position involve the development of novel algorithms and methods to track articulated and deformable objects (in particular, the human hand) with cameras only, such as RGBD cameras, that is, without any markers or other intrusions.
The goal of the work is to develop the algorithms and methods that are capable of tracking in large working volumes, in real-time, with high precision, and under uncontrolled lighting conditions.
This could involve, for instance, the fusion of multiple input modalities, such as HDR images with depth images, and the fusion of multiple camera streams. It is very likely that the work will also involve the application and adaptation of machine learning algorithms.
The successful candidate could build on previous work we have done in our group in this area, for instance, a 3D model of the human hand that exposes its large variability, and many other software components.

*About us*:
The project offers great opportunities for collaboration with other members of the school of computer science, such as the group for cognitive systems and the group for digital media, both at University of Bremen. In addition, we aim at a collaboration with the Fraunhofer Institute for Medical Visualization (Mevis).
This position provides a vibrant research environment where a broad range of activities related to virtual reality, computer vision, computer graphics algorithms, and medical IT systems 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. Recently, the University of Bremen has attained the status of a *University of Excellence,* which currently only 11 German universities hold.

*Qualifications*:
Candidates should have an excellent Master's degree (or equivalent) in computer science, or in a related discipline such as physics, mathematics, etc. Ideally, you have

specialized in real-time computer vision. You should have good knowledge about applied mathematical methods, parallel programming (CUDA), and machine learning methods. Required skills are solid experience in C++ software development, and a very good command of English (reading/writing/speaking). Some knowledge about OpenGL is a bonus. The successful candidate will be highly self-motivated, passionate about their work, creative, 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.
In case of excellent performance of the candidate, the position might get prolonged, provided there will be funding available.
The duties of the position will also comprise a small amount of help with teaching in the computer science program.

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: June 26, 2015 (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.