

Positions Available: Two Postgraduate Positions / Junior Researchers, Bremen Spatial Cognition Center, University of Bremen, Germany.

Two Postgraduate Positions / Junior Researchers
Bremen Spatial Cognition Center, Universitaet Bremen
Creative Unit – Intra-Operative Information: What Surgeons Need, When They Need It.

*** Position 1: Cognitive Psychology / Cognitive Science ***
-Under the condition of job release / reference number: A163/16

The position is limited on the basis of the "German part-time and temporary employment act" (TzBfG). An employment "without any objective reason" (ohne Sachgrund) based on TzBfG is only possible, if candidates have not been employed at the Free Hanseatic City of Bremen before. This does not apply to periods of training.

Project Description:

In this project, scientists from radiology, computer science, digital media, cognitive systems, and computer graphics cooperate and look for answers to the question how surgery-relevant information can be presented to surgeons during an operation without overtaxing the surgeons' information processing capacity? One central challenge is to provide a suitable interface for minimally invasive surgery. Such surgery is challenging, because it requires the coordination / integration of different spatial "views" that arise from the surgeon's bodily location and orientation, the patients bodily location and orientation, the location and orientation of the surgery tools, and the view afforded by the video monitor. Accordingly, the goal of this project is twofold: First, to obtain more accurate information about the nature of representations and processes underlying coordination of the different spatial views arising in minimally invasive surgery. Second, to utilize the gained information for developing efficient and robust solutions yielding less cognitively demanding, less error prone surgical setups, equipment, and procedures that work in the demanding environment of the operation room.

Qualifications:

Applicants should have expertise in cognitive psychology and should hold an excellent master or diploma degree in psychology, cognitive science, or a related field. They should have detailed knowledge of experimental methodology (including, in particular, statistical analysis), be committed to interdisciplinary, team-based research and be fluent in spoken and written English. Ideally, an applicant will also have good data handling skills, computer skills (e.g. MATLAB, SPSS, SAS, Stimulus Presentation Softwares), and knowledge about mental representations and processes involved in human spatial cognition as well as knowledge of / interest in applying psychological insights to improve human-computer interaction. Additional training will be provided on the job.

Main Tasks:

- * Planning / designing and conducting experiments
- * (Statistical) Analysis of experimental data
- * Help in devising cognitive models
- * Preparing manuscripts for publication in international journals and conferences

The position provides the opportunity for further scientific qualification of the successful applicant (e.g., extending the research profile of a postdoctoral researcher or as part of working towards a doctoral degree).

Conditions of Employment:

Salary is according to the German Federal pay scale (1/2 TV-L 13, approx. EUR 17,000 p.a.). The position is available from September 2016 until the end of 2017. Application deadline: July 31st, 2016 (or until a suitable candidate is found).

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.

Please address questions about the position and send your application under the reference number to:

Dr. Holger Schultheis <schulth@informatik.uni-bremen.de>
Bremen Spatial Cognition Center
Universitaet Bremen
P.O. Box 330 440
28334 Bremen / Germany

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.

*** Position 2: Artificial Intelligence / Cognitive Science ***

-Under the condition of job release / reference number: A162/16

The position is limited on the basis of the "German part-time and temporary employment act" (TzBfG). An employment "without any objective reason" (ohne Sachgrund) based on TzBfG is only possible, if candidates have not been employed at the Free Hanseatic City of Bremen before. This does not apply to periods of training.

Project Description:

In this project, scientists from radiology, computer science, digital media, cognitive systems, and computer graphics cooperate and look for answers to the question how surgery-relevant information can be presented to surgeons during an operation without overtaxing the surgeons' information processing capacity? One central challenge is to provide a suitable interface for minimally invasive surgery. Such surgery is challenging, because it requires the coordination / integration of different spatial "views" that arise from the surgeon's bodily location and orientation, the patients bodily location and orientation, the location and orientation of the surgery tools, and the view afforded by the video monitor. Accordingly, the goal of this project is twofold: First, to obtain more accurate information about the nature of representations and processes underlying coordination of the different spatial views arising in minimally invasive surgery. Second, to utilize the gained information for developing efficient and robust solutions yielding less cognitively demanding, less error prone surgical setups, equipment, and procedures that work in the demanding environment of the operation room.

Qualifications:

Applicants should have expertise in computer science / artificial intelligence and cognitive science and should hold a master or diploma degree in computer science, cognitive science, or a related field. They should be committed to interdisciplinary, team-based research and be fluent in spoken and written English.

Ideally, an applicant will also have knowledge of / interest in more than one of the following areas: computational cognitive modeling of human (spatial) cognition; theory and control of cognitive load; qualitative spatial reasoning; (model-based) human-computer interaction. Additional training will be provided on the job.

Main Tasks:

- * Contributing to conceptual and computational modeling of human information processing (in particular, in an operating room context).
- * Applying cognitive models to assess and mitigate cognitive load during surgery.
- * Preparing manuscripts for publication in international journals / at conferences.

The position provides the opportunity for further scientific qualification of the successful applicant (e.g., extending the research profile of a postdoctoral researcher or as part of working towards a doctoral degree).

Conditions of Employment:

Salary is according to the German Federal pay scale (TV-L 13, approx. EUR 34,000 p.a.). The position is available from September 2016 until the end of August 2017. Application deadline: July 31st, 2016 (or until a suitable candidate is found).

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.

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