



# Postdoctoral Researcher in Computer Science with Emphasis on Game Technology

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## Area: Computer Science

## to BTH, Blekinge Institute of Technology

with placement at the **Department of Creative Technologies in Karlskona**

### **Work description:**

The position is primarily aimed towards research (100%) in the main field with focus on game technology and measurement tools for biofeedback (EEG, GSR, eye tracking, etc.) in games and game behavior. The project aims to study and develop deeper knowledge in the field of game technology / game behavior relative to the risk of game addiction among young adults. Responsibilities include conducting and publishing research of high international quality and to apply for external funding. A prerequisite for the implementation of the project is a close interdisciplinary collaboration with Lund University and Malmö Addiction Centre.

### **About the research project:**

The research project is in an area spanning several disciplines, which currently has significant research gaps and lack of communication between game technology research and medical addiction research. The ambition is to develop a research collaboration in which we can connect the clinical aspects of game addiction mechanisms and correlates with measurement of game immersion, game behavior and addiction mechanisms in an experimental environment and relate the results of the research to development of entertaining games without game addiction. An important objective of the project is also to develop an international interdisciplinary collaboration with researchers in game behavior and game addiction. The project is implemented in interdisciplinary collaboration between the Department of Creative Technologies (DIKR) at the Blekinge Institute of Technology (BTH) and a research team in game addiction in Skåne where the position represents a node in the collaboration. A group will be created to support the post-doc. In this group are Dr., Dipl. doctor, Associate Professor Anders C. Håkansson, Lecturer in Addiction Medicine, specializing in game addiction, Lund University and Region Skåne's Addiction Centre, Associate Professor Veronica Sundstedt, researcher in Computer Science / Computer Graphics, BTH and Professor Sara Eriksen, researcher in Computer Science / Interaction Design and Applied Health Technology, BTH.

The research questions are processed within five work packages where the first work package (AP0) is dedicated to project planning and project monitoring. Initially AP1 focus on the publication of the results of the planning grants DIKR received from Svenska Spel in 2015. The other work packages AP2-AP5 also include literature studies, experimental design in DIKR's research laboratory, statistical analysis and dissemination of results.

Work Package 0 (AP0): Project planning and startup (planned years 1 and 2)

Work Package 1 (AP1): Publication of the planning grant results

Work Package 2 (AP2): Analysis of measurement tools and game behavior

Work Package 3 (AP3): Analysis of eye tracking and game behavior

Work Package 4 (AP4): Analysis of immersion and game addiction (research planned partially year 1 with a potential continuation year 2)

Work Package 5 (AP5): Analysis of game technology / game genres & game behavior (potential planned research year 2)

The research is in line with the University's vision of being a globally attractive knowledge environment within applied IT and innovation for sustainable growth.

## Evaluation criteria:

### Eligibility:

A person is qualified for employment as a post doc if he or she has obtained a doctoral degree, or a corresponding foreign exam. The following is required for this position:

- A doctoral degree in computer science or a related area.
- Periodic publication in high-quality scientific conferences and journals in computer science.
- Ability to work independently as well as in teams.

### Other evaluation criteria:

Documented experience and knowledge within one or several of the following areas:

- game development,
- experience of biofeedback (EEG, GSR, eye tracking, etc.)
- experimental design and statistical analysis

### Basis for assessment:

Research skills in computer science with a focus on game technology and biofeedback. Experience of game addiction/behavior research and industrial collaboration is considered as a merit. Thereafter administrative and other skills related to the position are weighted, along with the ability to interact with society and inform about research and development work.

**Employment:** 100%

**Commencement:** To be agreed upon.

**Duration:** 1 year with the possibility of extension (max 2 years in total)

**Contact person:** Veronica Sundstedt, tel. 0455-385850, veronica.sundstedt@bth.se

**Union Representatives:** Mikael Åsman (SACO) +46 (0)455 385720, e-mail: mikael.asman@bth.se and Monika Nilsson (TCO) +46 (0)455 385440, e-mail: monika.nilsson@bth.se.

Application procedure description is available at [www.bth.se/jobb](http://www.bth.se/jobb) or contact the Human Resources Department, +46(0)455 38 50 68.

In its work, BTH needs the experience of both women and men and applications are welcomed from both genders for all positions.

### About the department:

The Department of Creative Technologies (DIKR) is one of five departments at the Faculty of Computing. DIKR has a focus on Visual and Interactive Computing which includes computer science disciplines such as computer graphics, visualisation, game technologies, and human-centered computing. A rapidly growing challenge is in the acquisition, processing, analysis and rendering of visual information and how to communicate this information to be understood by people. Other important challenges include how people interact with computers in an efficient way and how this knowledge can be effectively incorporated in the design and development of new technological solutions. Application areas of Visual and Interactive Computing include science, engineering, entertainment, healthcare, public service, etc. In particular our research activities are focused on the following areas:

- **Computer Graphics and Visualisation**, including modelling, animation, rendering, virtual reality, image processing, and effective visualisation and communication of 2D/3D data.
- **Digital Game Development**, including the game development process, novel interaction techniques (biofeedback) in games, and serious and entertainment game applications.
- **Human-Centered Computing**, including human-computer interaction, interaction design, user studies, and eye tracking methodologies.

DIKR currently has 18 staff consisting of professors, senior lecturers/researchers, lecturers, and administrative staff. <http://www.bth.se/dikr>