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ASSOCIATION FRANÇAISE
DE RÉALITÉ VIRTUELLE AUGMENTÉE,
MIXTE ET D'INTERACTION 3D

Rêveries

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POSTE [Postdoctoral position at Inria \(Hybrid research group, Rennes, France\)](#)

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POSTE [Postdoctoral Position at UC Berkeley](#)

POSTE [A product manager and a software developer for our vehicle traffic and pedestrian simulation chez PTV Group \(Attention : lien vers annonce en Allemand\)](#)

POSTE Postdoctoral position at Inria (Hybrid research group, Rennes, France)

Topic : "Interaction and Perception of Touch Surfaces with Haptic/Tactile Feedback"

Context

This postdoctoral offer is in the frame of European Project H2020-funded "HAPPINESS: Haptic Printed and Patterned Interfaces for Sensitive Surfaces" which concerns the design of the next

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generation of touch surfaces and which involves several European academic laboratories (Inria, Glasgow University, CEA) and industrial partners (ARKEMA, BOSCH, WALTER PACK).

Postdoctoral position is hosted at Inria, Rennes, France, in Hybrid research group. Inria (www.inria.fr) is the French National Institute for Research on Computer Science and Control, enclosing around 3,500 researchers within 8 research centers in France. Hybrid (<https://team.inria.fr/hybrid/>) is an Inria research team located in Rennes, France. The scientific field of Hybrid is **3D interaction** with virtual environments. Hybrid research focuses on multiple user inputs, and intends to exploit both motor activity (gesture and motion-tracking) and mental activity (brain-computer interfaces). Hybrid applications are in the field of industry (virtual prototyping), medicine (surgical simulation, rehabilitation), design (architectural mock-ups), digital art, or videogames.

Mission

The postdoctoral program aims at designing and testing innovative interaction techniques for touch surfaces based on tactile or haptic feedback. We will rely on a new generation of tactile actuators that can be embedded in future touch surfaces which are developed in the frame of the HAPPINESS project.

Main objective of the postdoctoral candidate will therefore be to assess the potential of haptic/tactile feedback in the perception of 2D/3D content as displayed over a touch surface. We will focus on the perception of elementary shapes or elementary haptic properties that can be displayed by haptic actuators, such as the elasticity or rugosity of a virtual target. Our intention will be to quantify the potential of haptic technology, and to provide design guidelines for future touch surfaces. We will also consider cross-modal effects and the combination of haptic stimulations together with visual cues in order to distort or augment the final percept of the virtual content. One interesting path that could be followed in this line of research is “pseudo-haptic feedback”, which borders on haptic illusions and exploits visual effects in order to generate tactile sensations.

Therefore, the postdoctoral work will potentially involve the design of stimulation/interaction techniques based on tactile feedback and/or touch input, the design of experimental protocols for evaluating such techniques, the analysis of experimental human data, and the writing of both scientific papers and deliverables-reports of the project HAPPINESS. The successful candidate will also be directly involved deliverables-reports for the HAPPINESS project. Working in the HAPPINESS project will imply a team-working activity, and the participation to multiple meetings and to several work-packages of the project with other European partners.

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Profile

The candidate must have a PhD and excellent background in either: Human-Computer Interaction, 3D User Interfaces, Tactile/Haptic Interaction, Virtual Reality, Smart Graphics. Knowledge in designing and conducting experimental studies is a prerequisite.

Information

Duration: 18 months

Position open/start : now

Salary: around 2 620€ gross/month.

Monthly salary after taxes : around 2130€ (note: medical insurance is fully included).

Location: Rennes, France

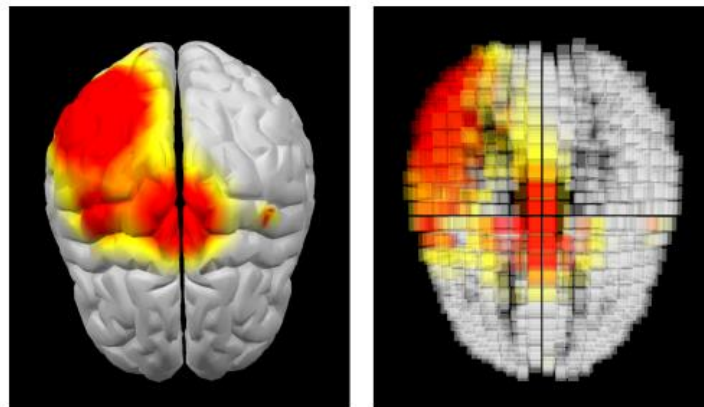
Contact

Interested candidates should send CV, motivation letter, and 3 references directly to:

Dr. Anatole Lécuyer, INRIA/IRISA, Email: anatole.lecuyer@inria.fr

POSTE Postdoctoral position at Inria (Hybrid research group, Rennes, France)

Title : "Real-time 3D visualization of brain activity (EEG)"



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Context

This postdoctoral offer is in the frame of the collaborative research project “SABRE” funded by the French “laboratoire d’excellence” CominLabs. The SABRE project involves three partners (Hybrid team at Inria Rennes, electronics and microwaves groups at Telecom-Bretagne Brest). The goal of SABRE is to improve computational power of current real-time processing pipelines of cerebral data (electroencephalography, EEG). The SABRE project investigates innovative, real-time EEG source imaging methods empowered and speeded-up by novel algorithms as well as the ad-hoc, transistor-level implementations of the key algorithmic operations. A completely new family of fully-hardware-integrated, computational EEG imaging methods will be developed that are expected to speed up the imaging process of an EEG device by several orders of magnitude in actual use. Illustrative applications and use cases of the project are Brain-Computer Interfaces, Neurofeedback applications, and Medical/Scientific visualization.

The postdoctoral position is hosted at Inria, Rennes, France, in Hybrid research group under the supervision of Dr Anatole Lécuyer (head of Hybrid) and Dr Jussi Lindgren (lead software engineer of the OpenViBE platform for real-time EEG processing – <http://openvibe.inria.fr>). Inria (www.inria.fr) is the French National Institute for Research on Computer Science and Control, with around 3,500 researchers in 8 research centers in France. Hybrid (<https://team.inria.fr/hybrid/>) is an Inria research team located in Rennes, France. The scientific field of Hybrid is **3D interaction** and virtual Reality. The research of the team focuses on multiple user inputs, and intends to exploit both motor activity (gesture and motion-tracking) and mental activity (brain-computer interfaces). Applications of this research are in the field of industry (virtual prototyping), medicine (surgical simulation, rehabilitation), design (architectural mock-ups), digital art, and videogames.

Mission

The postdoctoral program aims at designing and testing innovative 3D visualization techniques for representing brain activity as measured with EEG (electroencephalography). Partners of the project have access to various kinds of EEG acquisition systems, ranging from low-cost mobile systems with 8 electrodes to highly elaborated devices of 256 electrodes. The SABRE project focuses on brain activity related to motor functions, such as when imagining a motion of the hands or feet. Such brain activity can be particularly relevant in Brain-Computer Interfaces (BCI) applications that can provide assistance to disabled people (eg control of prostheses or wheelchair) or for re-education applications (eg neurofeedback and stroke re-education).

The novel visualization techniques that we envision in this postdoctoral work would leverage on the real-time source localization methods that will be designed and made available in SABRE project. These methods will allow a significant increase in the spatial resolution of such visualizations, enabling to precisely identify and locate the regions of interest in the cerebral volume in real-time.

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The recruited postdoctoral fellow will therefore design and propose various novel visualization methods for representing, in real-time, the processed cerebral activity and the identified brain regions. Various representations could be proposed and tested such as anthropomorphic or anatomic 3D models, or more symbolic approaches relying on classical gauges or other visual metaphors. The candidate could also exploit the various virtual reality facilities of the Inria Rennes research center, including head-mounted displays, multi-sensory devices (audio/haptic/tactile interfaces), and our high-end Immersia room - a 10-meter wide CAVE-like highly immersive stereoscopic configuration. The postdoctoral developments could also benefit from our open-source OpenViBE software platform (<http://openvibe.inria.fr>) that can potentially be an established platform and context for public dissemination of the proposed tools.

Several applications are targeted for the visualization techniques, including: education, diagnosis, and neurofeedback/re-education. A strong link is envisioned with other on-going projects and collaborations with medical partners at Rennes University Hospital (CHU) in either re-education or psychiatric domains. Clinical evaluations of the designed approaches could therefore be envisioned in the frame of the postdoctoral stay with real patients and/or healthy participants.

Profile

The candidate must have a PhD and excellent background in either: 3D Visualization, Scientific Visualization, Human-Computer Interaction, 3D User Interfaces, or Virtual Reality.

Information

Duration: 18 months

Position open/start : end 2015

Salary: around 2 620€ gross/month.

Monthly salary after taxes : around 2130€ (note: medical insurance fully included).

Location: Rennes, France

Contact

Interested candidates should send a CV, a motivation letter, and 3 references directly to:

Dr. Anatole Lécuyer, INRIA/IRISA, Email: anatole.lecuyer@inria.fr

Dr. Jussi Lindgren, INRIA/IRISA, Email: jussi-tapio.lindgren@inria.fr

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POSTE Postdoctoral Position at UC Berkeley

An NSF-funded postdoctoral position to study human visual perception is available at the University of California, Berkeley. There are two main goals: a) better understanding of perceptual effects due to reflections, scattering, and occlusions (e.g., determining surface material, depth ordering) and b) using that better understanding to develop techniques for distinguishing fake from real imagery. Candidates should have programming experience with Matlab and/or Python, with graphics libraries, and be able to assist in conducting experiments with human subjects. The project is supervised by Martin Banks, Professor of Vision Science at Berkeley and Hany Farid, Professor of Computer Science at Dartmouth. Much of the work will be conducted on a unique volumetric display that allows the presentation of correct focus cues (i.e., blur and accommodation) along with the conventional cues of perspective, binocular disparity, shading, etc. The position is funded for two years with possible extension beyond that.

Please contact Martin Banks (martybanks@berkeley.edu) or Hany Farid (farid@cs.dartmouth.edu).

POSTE A product manager and a software developer for our vehicle traffic and pedestrian simulation chez PTV Group (Attention : lien vers annonce en Allemand)

My company is looking for a product manager as well as a software developer for our vehicle traffic and pedestrian simulation. Especially the latter one might be interesting for your students if they finish their studies now or soon and want to leave the university (after completion of Master or PhD thesis).
<http://ds6.rexx-server.com/portal-ptv/stellenangebot.html?yid=291>
<http://ds6.rexx-server.com/portal-ptv/stellenangebot.html?yid=338>

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