

2019-01615 - PhD Position F/M Visualization for Smartwatches, Fitness Trackers, and other Small Portable Devices

Type de contrat : CDD de la fonction publique
Niveau de diplôme exigé : Bac + 5 ou équivalent
Fonction : Doctorant

A propos du centre ou de la direction fonctionnelle

Located at the heart of the main national research and higher education cluster, member of the Université Paris Saclay, a major actor in the French Investments for the Future Programme (Idex, LabEx, IRT, Equipex) and partner of the main establishments present on the plateau, the centre is particularly active in three major areas: data and knowledge; safety, security and reliability; modelling, simulation and optimisation (with priority given to energy).

The 450 researchers and engineers from Inria and its partners who work in the research centre's 28 teams, the 60 research support staff members, the high-level equipment at their disposal (image walls, high-performance computing clusters, sensor networks), and the privileged relationships with prestigious industrial partners, all make Inria Saclay Île-de-France a key research centre in the local landscape and one that is oriented towards Europe and the world.

Contexte et atouts du poste



This PhD position is part of a joint Franco-German project between the Aviz team at Inria and the Visualization research group at the University of Stuttgart. The work will take place in the Aviz team about 20km south of Paris, France but regular travel to Stuttgart is part of the position.

You can find more information on the Aviz team as well as the position on our website: <https://www.aviz.fr/Research/JobsMicroVis>

Mission confiée

The PhD student will study very small data visualizations, micro visualizations, in display contexts that can only dedicate minimal rendering space for data representations. The increasing demand for data visualizations on small mobile devices such as fitness tracking armbands, smart watches, or mobile phones drives this research direction. Given this usage context, the goal is to focus on situations in which visualizations are used "on the go," while walking, riding a vehicle, or running.

Research Goals

It is still unclear to which extent our knowledge of desktop-sized visualizations transfers to contexts that involve minimal display space, diverse viewing angles, and moving displays. We want to understand how visualizations can be read when they are worn on a person. Do certain types of visualization support better reading when people just briefly glance at them - or when their hands or arms are shaking (e.g. while jogging or moving in a vehicle)?

Impact

Our focus on small or moving displays is novel and timely while supporting realistic usage scenarios. Ultimately, this research direction aims to empower people to use visualizations outside a typical work environment furthering the research agenda of "beyond-the-desktop" visualizations. Example usage scenarios include fitness tracking armbands showing step counts or heart rates, hand-held GPS trackers showing elevation profiles, or mobile phone visualizations used in emergency response scenarios.

In summary, we aim at paving the way for a pervasive use of visualizations and thus a better and broader understanding of the complex world around us.

Principales activités

Main activities (5 maximum) :

- Designing and implementing small visualizations for smartwatches or fitness trackers
- Running human subject experiments to analyze the effectiveness of these visualizations
- Writing research papers on the results
- Literature analysis

Additional activities (3 maximum) :

- we expect students to take part in team meetings and help occasionally with tasks associated with running a team (e.g. organization of activities)
- there are no teaching requirements associated with this position

Informations générales

- **Thème/Domaine** : Interaction et visualisation
Production, traitement et analyse des données (BAP D)
- **Ville** : GIF SUR YVETTE
- **Centre Inria** : CRI Saclay - Île-de-France
- **Date de prise de fonction souhaitée** : 2019-09-01
- **Durée de contrat** : 3 ans
- **Date limite pour postuler** : 2019-07-31

Contacts

- **Equipe Inria** : AVIZ
- **Directeur de thèse** :
Isenberg Petra /
petra.isenberg@inria.fr

A propos d'Inria

Inria, l'institut national de recherche dédié aux sciences du numérique, promeut l'excellence scientifique et le transfert pour avoir le plus grand impact. Il emploie 2400 personnes. Ses 200 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 1000 scientifiques pour relever les défis des sciences informatiques, des mathématiques, souvent à l'interface d'autres disciplines. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 150 start-up. L'institut s'efforce aussi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

L'essentiel pour réussir

Read up on why or why not you should be doing a PhD and decide if you are here for the right reasons. Here is an interesting article on doing a PhD in visualization:

<https://medium.com/multiple-views-visualization-research-explained/so-you-want-a-visualization-ph-d-6e233122dcd7>

Generally, we consider keys to success:

- Curiosity to answer unknown questions
- Creativity in problem solving
- A drive to learn new things

Consignes pour postuler

Sécurité défense :

Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :

Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.

Attention: Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Compétences

We are in particular looking for students with the following expertise (or a significant subset):

- a highly motivated student with past experience in visualization, HCI, or related computer science areas,
- experience running user studies with human participants,
- experience with Android/Wear OS software development,
- experience with graphic design,
- ability to communicate on a regular basis with and receive and incorporate feedback from research advisors,
- ability to clearly and concisely communicate in English in written and spoken form.

If you are interested in this PhD position, please send your application to Petra Isenberg (petra.isenberg@inria.fr) and Jean-Daniel Fekete (jean-daniel.fekete@inria.fr). To apply for the position provide a CV detailing your past experience as well as a motivation letter that described why you are interested in this position in particular.

Avantages

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (after 6 months of employment) and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

Rémunération

Monthly gross salary : 1.982 euros (1st and 2nd year), 2.085 euros (3rd year)