

Facilitating the packaging, sharing and learning of digital skills

Duration : 36 months
Team : [Loki](#) (Inria centre at the University of Lille & CRISTAL) and [SICAL](#) (Univ. Lyon & LIRIS)
Supervisors : Sylvain Malacria (sylvain.malacria@inria.fr), Aurelien Tabard (aurelien.tabard@univ-lyon1.fr)
Location : Inria centre at University of Lille (Villeneuve d'Ascq) and/or Université Lyon 1
Deadline : 30/04/2024

The Loki and SICAL research groups are looking for a PhD student starting fall 2024. This PhD will investigate how interactions could be more easily packaged and shared across users to facilitate the sharing of digital skills.

Context

Most digital skills are mastered through informal learning, often through peers, friend or co-worker, sharing knowledge about a given practice. For instance by listing steps to follow in a message, sending an annotated screenshot, or using a screen recording. Unfortunately, these approaches suffer from two main limitations. First, producing these instructions is often tedious and time costly. Second, it requires different levels of interpretation from the learner, that may vary depending on his or her own skills. Explanations must be interpreted because users' context may be different the software used may be slightly different because of languages, software or OS versions, customizations, or the assemblage of software may be different for more complex workflows. In the context of remote collaboration, it becomes crucial to facilitate the packaging and sharing of such digital skills, as co-located forms of learning leveraging tacit knowledge and over the shoulder discoveries are more challenging to develop.

Objectives

This PhD will be articulated around the following objectives.

Assist users in identifying relevant digital skills worth sharing. It is important for users to identify which operations they master on their system that could be useful to other users, such as friends or colleagues. This PhD will investigate what makes a relevant digital skill and more easily identify who it could be beneficial to.

Identify what it takes to "package" a digital skill. In order to facilitate sharing of digital skills, it is necessary to identify what makes a digital skills and what are the elementary components necessary to share these digital skills so they can be "compiled" and used on a remote computer that potentially runs a different version of the software the digital skill is useful in.

Design and evaluate interfaces that assist learners. Finally, it will investigate different designs of interfaces that can assist users in playing back these digital skills so they can be more easily understood and learnt.

Candidate

A successful candidate must be an excellent MSc student in computer science or equivalent, and show a great interest in performing high quality research in Human-Computer Interaction. He or she must demonstrate high skills in software development. Creativity, independence, team working and communication skills are valuable advantages.

The candidate will join a vibrant and multicultural group of young researchers at Loki. Our students typically come from different horizons (Germany, Colombia, Canada, China, France, ...). As such, it is not required to speak French to fit in our group.

If interested in this project, simply e-mail Sylvain Malacria (sylvain.malacria@inria.fr) and Aurelien Tabard (aurelien.tabard@univ-lyon1.fr) with the title of this PhD as subject. All applications are welcome, regardless of age, gender, social or ethnic origin, sexual orientation or disability.