

Understanding and modelling the discovery of hidden controls in GUIs

Duration : 4-6 months
Level : Master
Team : [Loki](#) (Inria Lille – Nord Europe & CRISAL)
Supervisors : Sylvain Malacria (sylvain.malacria@inria.fr)
Location : Inria Lille - Nord Europe (Villeneuve d'Ascq)
Note : can be followed by a funded PhD

This project in Human-Computer Interaction (HCI) consists in understanding and modelling the discovery of hidden controls in Graphical User Interfaces (GUIs). This internship is part of the ANR-funded project *Discovery*. If successful, the candidate may have the opportunity to further explore this research with a funded PhD.

Context

The design of user interfaces in modern systems has evolved toward interfaces providing the minimal required amount of features and decoration. As a result, many features end-up hidden by default or located off-screen with the often false assumption that users are aware of their presence. This case, where users are confronted with a GUI that does not inform of all interaction possibilities is a fundamental HCI problem, extremely frequent on modern touch-based computers. A typical example of this are Swhidgets [1], widgets that by default are entirely hidden under another interface element or the screen bezels.

Objectives

This master internship will investigate how users discover the existence of off-screen widgets in touch-based interfaces.

The candidate work will consist in:

- Understand how users build a mental model of touch-based interfaces
- Investigate the mediums used to become aware of off-screen widgets
- Build a conceptual model of how people infer the existence of such hidden controls in GUIs (based on familiarity with the interface, awareness of similar controls in different applications, etc.)
- Design and implement an experimental platform that replicate the basic components of a touch-based GUI
- Validate the proposed model in a controlled experiment conducted on the experimental platform

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 solid experience 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) with the title of this internship as subject. All applications are welcome, regardless of age, gender, social or ethnic origin, sexual orientation or disability.

Reference

[1]-Nicole Ke Cheng Pong, Sylvain Malacria. *Awareness, Usage and Discovery of Swipe-revealed Hidden Widgets in iOS*. ISS 2019 - Proceedings of the ACM Conference on Interactive Surfaces and Spaces, Nov 2019, Daejeon, South Korea.