ALICE LOIZEAU

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DBLP
Scholar
ORCiD

EDUCATION

Summary: PhD in Computer Science and Human-Computer Interaction defended before an international jury, master's degree in computer engineering, master's degree in UX Design

2021-2025 — **PhD in Computer Science and Human-Computer Interaction** at the Inria Center of the University of Lille, University of Lille, France, on the topic "Understanding and designing around error in interactive systems" HAL. Thesis defended on December 9, 2025.
Supervision: **Stéphane Huot** (Inria, thesis director) and **Mathieu Nancel** (Inria, co-supervisor).
Jury: **Carl Gutwin** (University of Saskatchewan, reviewer), **Catherine Letondal** (ENAC, reviewer), **Duncan Brumby** (UCL, examiner), **Anne Etien** (University of Lille, examiner, jury president), **Philippe Palanque** (University of Toulouse, examiner)

2018-2021 — **Master's degree in Computer Engineering** from the **University of Technology of Compiègne** (France), specializing in Real-Time Systems and Embedded Computing.
Final year project: "Detection and mitigation of interaction interferences" at the Inria center of the University of Lille, supervised by Mathieu Nancel and Sylvain Malacria.
Semester abroad at the National University of Science and Technology MISiS (Moscow) in 2020.

2018-2021 — **Master's degree in User Experience Design** in parallel with the engineering degree, UTC
Thesis combined with the final year project report for the engineering degree

2015-2018 — Bachelor's degree in Humanities and Technology, UTC: program combining technical engineering courses and humanities applied to the social, human, historical, and philosophical challenges of technology.
Internship as an engineer assistant: "Integration of services on an artificial creature and project management for the development of a prototype" (6 months) at SPooN AI, Paris, supervised by Jérôme Monceaux.
Erasmus semester at Politecnico di Torino (Turin, Italy) in 2018.

PROFESSIONAL EXPERIENCE

Summary: Total of 172.5 hours of teaching time in computer sciences bachelor degree

2024-2025 — **Permanent teaching assistant** (*ATER*), Faculty of Science and Technology (FST) at the University of Lille, France – 97.5 hours in total
Javascript practicals, Web Technologies exercise class, Shell and scripting language exercise class, Encoding exercise class, HCI practicals

2022-2024 — **Teaching assistant** (*Doctorante vacataire*) at the FST of the University of Lille – 75 hours in total
Programming practicals, Encoding exercise class, HCI practicals

LIST OF PUBLICATIONS

Summary: A publication as first author in a Q1-ranked international journal + an individual article published in a French-speaking conference as part of doctoral consortium.

2024 — **Alice Loizeau**, Sylvain Malacria, and Mathieu Nancel. "GUI Behaviors to Minimize Pointing-Based Interaction Interferences". In: ACM Transactions on Computer-Human Interaction 31 (2024), pp. 1–34. HAL, DOI
This journal article presents a study on solutions to mitigate interaction interferences. We present a design space of the advantages and technical requirements of these solutions, and demonstrate in a controlled study how simple designs can reduce the occurrence of so-called "pop-up" interferences and user frustration. As the main contributor, I participated in the creation of the design space, implemented the study platform, conducted the experiment with volunteer participants, and produced a large part of the necessary statistical tests.

2023 — **Alice Loizeau**. Comprendre et concevoir avec l'erreur dans les systèmes interactifs (Understanding and designing around error in interative systems). IHM'23 - 34e Conférence Internationale Francophone sur l'Interaction Humain-Machine, AFIHM; Université de Technologie de Troyes, Apr 2023, Troyes, France. HAL
The article provides a concise overview of my thesis work, its motivations, and its current and expected contributions. It was selected to be featured at the conference's Doctoral Meetings. I gave an oral presentation of my work in front of the other selected doctoral students and discussed our presentations with the jury. I also presented a poster outlining my thesis project during the Demo Night and until the end of the conference.

SKILLS

Programming

Python, C, C++, C#, Assembly ARM, SHELL,

- Web: HTML, JavaScript,
- AI: Lisp, Prolog,
- Databases: SQL
- Statistics: R, Matlab

Research in HCI

- Conducting controlled experiments
- Qualitative methods
- UX design
- Project management
- Cognitive sciences
- Value analysis
- Philosophy of tecnics
- History of tecnics

Languages

- English: C1
- French: Mother tongue
- Italian: B2/C1 (2018: Erasmus semester at PoliTo)
- German: B1
- Russian: A1 (2020: Semester abroad at NUST MISiS)

SCIENTIFIC MEDIATION

Summary: Co-creation and co-organization, on two occasions, of an educational event to promote computer science, human-computer interaction, and research to high school girls. Interview in an episode of L'Esprit Sorcier. Participation in several scientific educational events aimed at students and high school girls.

2025 — **Interview in an episode of L'Esprit Sorcier** presenting research on interaction interference conducted with Mathieu Nancel. Broadcasted on French television and available on YouTube.

2024+2025 — **Participation in RJMI (Meetings of Young Female Mathematicians and Computer Scientists)** at the Inria center at the University of Lille. Discussion with high school girls to present my academic and professional background.

2023 + 2024 — **Co-creation and co-organization of the event "Les Innovantes"** with Bruno Fruchard (Inria) on two occasions (December 5, 2023, and December 6, 2024), in partnership with AFIHM (French Association for Human-Computer Interaction), the Inria center of the University of Lille, and the CRIStAL laboratory. Mediation days for high school girls to promote women's work in computer science and HCI.

2023 — **Participation in the event "Girls, Math, and Computer Science: A Brilliant Equation"**, organized by the association Femmes et Mathématiques, in partnership with Animath. Discussion with high school girls to present my academic and professional background.

2023 — **Participation in a round table discussion during the "Research, Innovation, and Creation"** day at PolyTech Lille. Answering questions from students alongside three other research professionals.

2023 — **Participation in the "Doctoral Student-High School Student"** event at the Inria center at the University of Lille. Presentation of my research to a high school student, who then presented it at the event.

Study of the concept of error in safety sciences and HCI

This work provides a state-of-the-art of the concept of error, which had not yet been done in Human-Computer Interaction. In HCI, the concept has been little studied for itself, although it is widely used in practice in studies and controlled experiments. However, the domain has been greatly influenced by other fields such as safety sciences and resilience engineering. These are the fields that have focused most on the issue, because errors in a critical system can have serious consequences [1]. The few studies on error in general in HCI have inherited this view of error that prioritizes system functions over user experience [2]. At the same time, the field is also interested in user problems that fall outside the system specifications or even contradict them.

This study demonstrates the limitations of the traditional approach to error in HCI and suggests that refocusing the concept around user experience would resolve the current blind spots.

For this work, I conducted a state-of-the-art of the concept of error in safety sciences, engineering, and human-computer interaction. I included in my analysis the main works directly related to the concept, as well as examples of research that applies it in practice – in HCI, error is an important parameter for measuring performance in controlled experiments.

[1] G. J. M. Read, S. Shorrock, G. H. Walker, and P. M. Salmon. 2021. State of science: evolving perspectives on 'human error'. Ergonomics 1091–1114.

[2] P. Palanque, A. Cockburn, and C. Gutwin. 2020. A Classification of Faults Covering the Human-Computer Interaction Loop. In Computer Safety, Reliability, and Security. Springer 434–448.

The costs of error from the user's perspective

Based on the observation that the study of the concept of error in Human-Computer Interaction could benefit from a new approach that is more user-centered (see previous work), we propose a definition and taxonomy of negative incidents for users in HCI. We have refined and deepened this taxonomy through two user studies, combining qualitative and quantitative methods:

- *Validating the accuracy and completeness of the taxonomy*

In order to verify that the taxonomy corresponded to users' experiences and covered all their negative incidents, I designed and conducted workshops on the subject. Four groups of four people participated: two groups of experts in HCI or IT, and two groups of regular users with no expertise in these areas. Analysis of the workshops made it possible to clarify certain categories and add new ones, as well as to collect real examples of incidents on the interfaces. I also conducted a thematic analysis of the transcripts of the discussions, identifying contextual descriptions, emotions, concrete consequences of the incidents, different perceptions of the system, and attributions of blame (to the user or the system).

- *In-depth profiling of each category based on user experience*

Based on the results of the workshops, we designed an online survey asking users about specific negative incidents. The questions focused on the context of the incident, its implications, its presumed causes, its immediate and long-term consequences in material and emotional terms, and confidence in the system. More than a hundred people completed the questionnaire. Based on statistical analysis of the results, I was able to identify major trends in the experience of error, as well as associate each category of the taxonomy with a user experience profile: certain types of errors are more often perceived as the user's fault, others as the system's fault, and some are more frequent, frustrating, or predictable than others.

These two studies confirm the relevance of a new approach to error in HCI, by verifying and refining the associated taxonomy.

Mathieu Nancel and I plan to submit an article describing these studies and their results to a journal on Human-Computer Interaction.

Study of solutions to the problem of interaction interference

Interaction interference is a little-studied problem that occurs when the interface changes during the psychomotor process of a user action, preventing the user from interrupting or modifying their gesture before it happens [2]. This distorts the system's interpretation of the user's intention. As things stand, for the machine, a user action will always be interpreted with the same degree of reliability, regardless of whether the interface has changed in the immediate past. To create and test solutions to interaction interference, we first developed a designspace of solutions to the problem. These fall into three main categories: "prevent," "avoid," and "correct", from which I defined four generic behaviors designed to avoid interference. I then evaluated these behaviors in a controlled experiment with 20 participants. In this study, they had to click on targets to place them in the center of the screen. Pop-up windows (a common cause of interference) appeared to disrupt this primary task. The purpose of these pop-ups was to cause interferences in order to gather participants' feedback on the event itself and on the behavioral solutions being tested.

The measures taken during the experiment reinforce the characterization of the phenomenon; interferences seemed to prevent participants from reacting to the appearance of pop-ups. The results also revealed a preference for the new pop-up behaviors over the default behavior.

This work, carried out with Sylvain Malacria and Mathieu Nancel, was the subject of a journal article published in ToCHI in 2024 [1].

[1] A. Loizeau, S. Malacria, M. Nancel. GUI Behaviors to Minimize Pointing-based Interaction Interferences. ACM Transactions on Computer-Human Interaction, In press. hal-04460441

[2] P. Schmid, S. Malacria, A. Cockburn, and M. Nancel. 2020. Interaction Interferences: Implications of Last-Instant System State Changes. ACM UIST 516–528.

RESEARCH ACTIVITIES: REVIEWING

2025 — ACM International Conference on Mobile Human-Computer Interaction (MobileHCI): 1 Late-Breaking Work

RESEARCH ACTIVITIES: VOLUNTEERING

2026 — **Registration chair for IHM2026** (International French-speaking conference on Human-Computer Interaction)

2023-2025 — **Weekly meetings organization for the Loki research team** with Bruno Fruchard (Inria). Organization of scientific discussions (on team-internal or external publications, or work in progress), round tables, presentations by guest researchers.

SCIENTIFIC TALKS

2025 — **Presentation of the journal article** "GUI Behaviors to Minimize Pointing-Based Interaction Interferences" at the CHI2025 conference in Yokohama

2023 — Presentation of PhD thesis work on "Understanding and designing around error in interactive systems" during a **visit to the Ex-Situ team** in Inria Saclay (France)

2023 — Presentation of PhD thesis work on "Understanding and designing around error in interactive systems" as part of the **doctoral consortium** of the IHM2023 conference

TEACHING: RECAP

Year	Location	Students	Level	Nom de la matière	Number of hours	Type of teaching	Responsabilities and involvement
2024-2025	FST de l'Université de Lille	Computer science bachelor	2nd y.	Javascript	18 hours	Practicals, Projects	Running practicals, supervising and correcting projects
2024-2025	FST de l'Université de Lille	Computer science bachelor	1st y.	Web Technologies	31,5 hours	Exercice classes, Projects	Running exercice classes, grading of exercices throughout the semester, supervision and correction of projects
2024-2025	FST de l'Université de Lille	Computer science bachelor	2nd y.	Shell and script language	12 hours	Practicals	Running practicals
2024-2025	FST de l'Université de Lille	Computer science bachelor	1st y.	Encoding	18 hours	Exercice classes	Running exercice classes, grading tests
2024-2025	FST de l'Université de Lille	Computer science bachelor	3rd y.	HCI	18 hours	Practicals, Projects	Running practicals, grading practicals throughout the semester, supervising and correcting projects
2023-2024	FST de l'Université de Lille	Computer science bachelor	3rd y.	HCI	18 hours	Practicals, Projects	Running practicals, grading practicals throughout the semester, supervising and correcting projects
2022-2023	FST de l'Université de Lille	Computer science bachelor	1st y.	Encoding	21 hours	Exercice classes	Running exercice classes, grading tests
2022-2023	FST de l'Université de Lille	Computer science bachelor	1st y.	Programming	36 hours	Exercice classes	Running exercice classes, grading of exercices throughout the semester, creating English vocabulary sheets, grading tests

TEACHING: DETAILS

Summary: Total of 172.5 hours of teaching in the computer science bachelor's degree program

2024-2025

JavaScript course, Faculty of Science and Technology (FST) at the University of Lille
18 hours total (in French)
Main lecturer: Jean-Christophe Routier
Supervision of a group of 25 students for individual practical sessions. Grading of practical assignments.
This course covers the dynamic features of JavaScript, including React.

2024-2025

Web Technologies Course, FST, University of Lille
31.5 hours total (in French)
Main lecturer: Patrice Thibaud
Supervision of a group of 27 students for practical work and projects in pairs. Continuous assessment, project evaluation including an oral assessment.
This course covers the basics of creating client-side web documents: page creation (HTML and CSS), client-side programming (JavaScript).

2024-2025

Shell and script language course, FST, University of Lille
12 hours total (in French)
Main lecturer: Alexandre Sedoglavic
Supervision of a group of around twenty students for individual practical work.
This course covers the features of the bash command interpreter and the Git version management system.

2024-2025
2022-2023

Encoding Course, FST, University of Lille
39 hours total (in French)
Main lecturer: Léopold Weinberg
Supervision of a group of around thirty students for tutorial sessions. Grading of midterm and final exams for this group.
This course is an introduction to the manipulation of numerical bases for data encoding.

2024-2025
2023-2024

Human-Computer Interaction Course, FST, University of Lille
36 hours total (in French)
Main lecturer: Thomas Pietrzak
Supervision of a group of about ten students for individual practical work sessions and group projects.
Grading of individual practical work and of each stage of the project until the end-of-semester defense for this group.
This course is an introduction to human-computer interaction. The program includes learning PyQt to create interfaces and discovering the HCI design process, from researching user needs to storyboarding.

TEACHING: DETAILS

2022-2023

Programming Course, FST, University of Lille
36 hours total (in English)
Main lecturer: Maude Pupin
Supervision of a group of 21 students for practical sessions in pairs.
Creation of two English vocabulary sheets to help French students prepare for their written exams.
Grading of mid-term and final exams for this group.
This course teaches the basics of algorithms and programming in Python.