

Chair Data Science and Artificial Intelligence for Digitalized Industry and Services

Internship project

Subject

Designing Collaborative Spreadsheets

Possibility to continue as a PhD candidate

YES (Funding to be confirmed)

About the chair

The Chair Data Science and Artificial Intelligence for Digitalized Industry and Services (DSAIDIS), lead by Florence d'Alché-Buc, a Professor in the department Image, Data, Signal of Telecom Paris, unites five industrial partners: Airbus Defence & Space, Engie, Idemia, Safran et Valeo. It's general objective is to develop, in collaboration with the partners, teaching and research of the international level.

Its four principal research directions are:

1. Building predictive analytics on time series and data streams.
2. Exploiting large scale, heterogeneous, partially labeled data.
3. Machine Learning for trusted and robust decision.
4. Learning through interactions with environment.

Description of the internship

Supervision

Fabian Suchanek email: suchanek@telecom-paris.fr web: <https://suchanek.name>

Gilles Bailly email: gilles.bailly@isir.upmc.fr web: www.gillesbailly.fr

Location and dates of the internship

Address : Télécom Paris, 19 Place Marguerite Perey, 91120 Palaiseau

Date of the beginning of the internship : beginning 2024

Team where the thesis will be written

Department INFRES, Team DIG (Data, Intelligence, and Graphs) of TelecomParis

Multi-Scale Interaction team of Sorbonne Université

Keywords

Data-driven collaboration, Human-Computer Interaction, Document Analysis

Detailed subject

Online spreadsheets such as Google Spreadsheets are very popular for collaborative information collection. These systems give each user the same permissions on all the cells of the document (a *global* permission). However, imagine a use case where we collect course grades for students from professors: we want that every student can see only their own grades (and not the grades of the other students), and we want every professor modify only the grades of their own courses (and not the grades of other courses). That is: we want *local* permissions, where some users can read some cells and modify some cells, but not all cells.

The goal of this internship is to explore how to interact with a collaborative spreadsheet supporting these local permissions: e.g., some cells can be edited, some rows can only be viewed, some columns are masked, etc.

The student will design, implement, and evaluate novel interaction and visualization techniques to deal with different local permissions in collaborative spreadsheets. The mechanisms should scale from a dozen to hundreds of users (e.g., a same spreadsheet is used by students, professors and administrative persons).

The internship may last from 4 to 6 months and could serve as the foundation for a PhD thesis.

Candidate profile

Student having master 2 research

- Interest in data-driven collaboration and Web-based solutions
- Programming skills (e.g. Javascript)
- Good command of English

Application

To send on the advisors

- Curriculum Vitae
- Personalized motivation letter that explains interest of the candidate in the subject (can be directly in the body of the email)
- Grade reports for recent years

Incomplete applications will not be considered.

References

[Perelman, G., Serrano, M., Bortolaso, C., Picard, C., Derras, M., Dubois, E. \(2019\). Combining Tablets with Smartphones for Data Analytics. In: Lamas, D., Loizides, F., Nacke, L., Petrie, H., Winckler, M., Zaphiris, P. \(eds\) Human-Computer Interaction – INTERACT 2019. INTERACT 2019. Lecture Notes in Computer Science\(\), vol 11749.](#)

[V. Cavez, C. Appert, E. Pietriga, Spreadsheets on Interactive Surfaces: Breaking through the Grid with the Pen, ACM Transactions on Computer-Human Interactions \(ToCHI\), 33 pages.](#)

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