

Application for 2022 Minerva Informatics Equality Award

Gender-equality and anti-harassment committee

LIS (Computer Science Lab) – Aix Marseille University

Website of the committee: <https://parite.lis-lab.fr/>

Applicants

The gender-equality and anti-harassment committee of the LIS research lab in Computer Science of Aix Marseille University, France.

Members of the committee

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Composition of the committee

We would like to emphasize the constitution of our committee, composed of both women and men. We are 15 members: 8 women and 7 men. Moreover, we have members with different functions representing different professional categories and seniority degrees in the lab (PhD candidates, post-docs, associate professors, full professors, logistics and administrative managers).

Abstract

The gender-equality and anti-harassment committee of the Computer Science lab of Aix Marseille University was founded in 2018. To date, women in the lab are largely under-represented. Starting from a gender-oriented analysis of a large survey coordinated by our committee on the well-being and career obstacles of the lab members, we initiated numerous concrete actions to raise awareness on the stereotypes, to prevent harassment and accompany victims, to boost career of women and to encourage high-school girls to consider science among their possible higher education and career choices. Moreover, the committee conducts research projects to develop tools to promote gender equality.

Description of the initiatives

LIS (Laboratoire d'Informatique et des Systèmes) is a computer science research laboratory gathering 355 persons including 175 researchers and lecturers in computer science and 131 PhD candidates. The women are significantly under-represented, with 26% of women among the lab members, and only 15% among the research staff (associate professors, professors, researchers). Moreover, the laboratory seems to suffer from a glass ceiling: the professor positions and the coordination positions are mainly held by men.

The gender-equality and anti-harassment committee has been created in 2018. The committee carries out different types of actions that are grouped into 5 themes:

- 1/ **The equality observatory**, performing qualitative and quantitative gendered analyses;
- 2/ Actions to encourage **young girls to pursue scientific careers**;
- 3/ **Awareness on gender discrimination** through communication and training;
- 4/ **Listening and support** for victims of discrimination via the creation of a specific unit within the committee;
- 5/ **Research work** on gender stereotypes and discrimination, and participation in international research initiatives for gender equality.

We detail the actions corresponding to each theme below.

1/ The equality observatory

In order to better understand the situation of women and men in the laboratory, we have conducted several gendered analyses, both *quantitative* and *qualitative*.

Quantitative gendered analyses. From the exports of the lab's HR databases, we perform each year statistical analyses on several gendered indicators, e.g. the proportion of women in different positions in the lab, as well as the research grants and contracts per PI (duration, amount, etc.), the number of PhD supervisions, publications, and career promotions (e.g. *habilitation*). The results are presented at the lab's general meetings and published on the committee's website.

Qualitative gendered analysis. The databases of the lab are not sufficient to perform gendered analyses of its members' well-being and career obstacles. We have created a specific survey to collect several indicators on the well-being at work and on potential career obstacles. The survey has been constructed in collaboration with a sociologist hired for this purpose, and covers different aspects of the members' work and career (satisfaction with working conditions, work-life balance, interpersonal relations at the workplace, opinion on professional equality, situations of ordinary sexism, harassment and violence, bonuses, dependents, and socio-demographic profile). This qualitative analysis has been conducted in 2020 and the results were also shared with the lab members in the form of a presentation at the lab's general meeting, a report available on the committee's website, and a set of posters which summarise its main results. The plan is to repeat the questionnaire every 4 years to assess the situation's evolution.

Dissemination of the resources. In order to help other labs to conduct such analyses, we have created an open git repository with all the resources, from the entire survey that can be integrated directly in LimeSurvey, to the lists of indicators and the methods to compute them, including also useful documents such as a template email to send to the lab to introduce the survey, and a job offer for an internship if the lab would like to recruit a person to help on this task. In sum, the repository contains all the elements that a lab needs to conduct qualitative and quantitative gendered analyses like those carried out at LIS. [Link to the github.](#)

2/ Actions to encourage young girls to pursue a career in science

Promotion of sciences to high school girls. Twice a year, our committee co-organises together with the mathematics lab (I2M) and the Centre International de Rencontres Mathématiques (CIRM) the 1-week school Les Cigales (The Cicadas). Les Cigales school *is an event only for high-school girls*. The school aims at developing the attractiveness of mathematics and informatics for the girls in order to achieve better gender balance in technical and scientific professions. The school lasts 1 week during the autumn and spring school vacations in France. Full-board accommodation at CIRM is funded by the event, creating a stimulating atmosphere for the participants. The organisation of the school is carefully designed, with informatics and mathematics open problems in the morning, sport activities in the afternoon, and friendly and varied evening events (conferences, films and games). We promote conferences of women researchers in mathematics and informatics in order to provide role models to the participants. Every edition, around 26 participants are selected by the organisers (around 52/year) based on their motivation and recommendation letters by high-school teachers. We favour participants from less privileged high schools and zones, trying to balance those from the Marseille region and those from other regions in France. Specific advocacy actions are performed, reaching out to teachers in less privileged schools in Marseille, so that they encourage their students to apply, and via partnerships with actions such as *Cordées de la réussite* and *Genius (École Polytechnique)*. The number of applications has been increasing from year to year: from around 60 applications in 2022 to 103 applications in 2023. LIS is currently developing a web interface to manage the application and registration process. In autumn 2021 and spring 2022, sociologists carried out a study with the school's participants. The results are being analysed and will be published in the form of a book, providing valuable insights on the impact of the action on the participants' perception of scientific careers and on their future professional choices. Details can be found on our promotional [video](#) and on the event's [website](#).

Promoting female role models in sciences. Knowing the importance of female role models in sciences to fight stereotypes, women of the committee are frequently involved in primary and secondary schools to present their research. They have also animated workshops in informatics in primary and secondary schools in France (e.g. "[Filles et Maths : Une équation Lumineuse](#)"). Moreover, they participated in different events of "portraits of women in Sciences" (e.g. Comic "[les décodeuses du numérique](#)", "[La science taille XXL](#)").

3/ Awareness on gender discrimination

Poster campaign. To raise awareness on discrimination, and more particularly on ordinary sexism (a problem in our lab revealed by the survey described above), we have created several posters that highlight ordinary sexism situations. Examples are presented on our [website](#).

Training. In our lab, thanks to our committee, a training on gender equality in the workplace and on the effects of gender stereotypes is mandatory for all persons in a position of leadership (team leader, department manager, laboratory director, etc.). The training is provided by instructors from Aix Marseille University's vice-president for gender equality and fight against discriminations, coordinated by a researcher in cognitive psychology who is an expert in the domain of stereotypes and unconscious bias.

Awareness events. Several events are organized each year at the annual LIS days, a 2-days event gathering all lab members to share their research activities and foster/strengthen local collaboration links. The goal of our actions at the lab days is to raise awareness on gender discrimination. Recent actions include an interactive theatre play (*forum theatre*) in 2022, and a scientific conference on research work on stereotypes in 2023.

4/ The listening and support unit

The survey conducted in our lab has highlighted a high prevalence of ordinary sexism situations. In our university, there is a specific service for respect and equality for victims or witnesses of sexist and sexual violence, discrimination or harassment. However, it may not be an easy task for a person to contact this service in situations of "ordinary" sexism or more generally for any situation of discrimination or harassment. Indeed, the victims generally downplay situations and find it difficult to confide in others. In order to facilitate the dialogue, we have created a specific unit within our committee. The unit's mission is to receive, listen to and follow up on alerts; to discuss the situation with the people concerned, to identify ways of putting an end to the discrimination situation, and to provide support and referral to university or external services. Two members of the committee are specifically trained to welcome and support victims of discrimination. The unit can be contacted anonymously. We deal with all forms of discrimination (sex, gender, origin, disability, sexual orientation, sexual and gender identity, religious beliefs, physical appearance, accent, etc.). [Link to the description of the listening and support unit](#) (*In French*).

5/ Research works and international research communities for gender equality

Research works for gender equality. Members of the committee conduct research projects in computer science to reduce girls' stereotype threat using virtual agents in learning environments (description of the project in [The Conversation](#), and in this [research article](#)) and to develop a virtual reality tool to simulate a forum theatre for discrimination awareness ([research article](#)).

International implication for gender equality. The [DEI](#) (Diversity Equity and Inclusion) initiative in the International Databases conferences aims to raise awareness and provide practices for paper writing and presentations that consider all aspects related to diversity, inclusion and equity. The goal is to make diversity and inclusion a first class citizen. In this context, we took part in three international conferences: European Association for Computational Linguistics (EACL 2021), International Conference on Web Information Systems Engineering (WISE 2022), International Conference on Management of Digital EcoSystems (MEDES 2023) as co-chair of DEI and implemented various actions such as organising diversity panel discussions, and maintaining a balance of gender representations across the different roles at the conference, particularly keynote speakers and session chairs. The description of the various actions carried out as part of the WISE conference have recently been published in a [SIGMOD conference report](#). Our panel on linguistic diversity at EACL 2021 is [documented here](#). Moreover, we are also active members of the [COST EUGAIN](#) (European Network For Gender Balance in Informatics) to participate to the recommendations and guidelines defined by the European network, and at the [COST UniDive](#) on linguistic diversity for computational language models.

Evidence of its impact

Measuring the impact of our actions is a difficult task. We try to provide in the following some indicators that reveal some impacts of the committee's actions.

A first indicator is the number of new members on our committee, as well as the number of departures. Each year, our committee attracts new member (PhD candidates, research staff, administrative managers). No one wished to leave our committee. This **attractiveness** shows, not only that we are visible and well known in our laboratory, but also that we are increasingly able to federate and attract a whole range of individuals to think together and act to promote gender balance and fight against discrimination. Moreover, discussions started within our committee may influence other committees of the lab, e.g. the PhD committee is currently structuring actions to make new PhD candidates feel welcome and safe when they join the lab.

Concerning the **equality observatory** (Section 1):

- The resources published on github to conduct qualitative and quantitative gendered analyses have been used by several labs in France. We do not know exactly how many labs in France have used these open-source resources. In our university, we know that 10 research labs have used the resources to conduct gendered analysis.
- The survey that we have conducted in our lab has led to several actions and in particular to all the actions on the awareness on gender discrimination described Section 2.

Concerning the **listening and support unit** (Section 2), since its opening, we have managed several situations of discrimination (racism and handicap).

Our actions to **encourage young girls to pursue a career in science** are attracting an increasing number of applications (103 applications for 52 places in 2023) and have inspired the creation of *Les Marmottes* in Switzerland, plus a couple of similar events planned in Douai and in Rennes (CHL). Preliminary unofficial results of a sociological study on the event's impact indicate that more effort has to be put into attracting high-school girls beyond the daughters of teachers and engineers. Nonetheless, the questionnaires confirm that a "girls-only" event plays an important role in increasing the participants' self-confidence and reducing self-censorship. More extensive and systematic conclusions will be published upon completion of the study.

The committee's existence has enabled us to create a **lactation room** to meet the needs of our female laboratory staff.

Last but not least, the lab has introduced "**gender balance**" criteria to promote the career of women in the lab. For instance, gender balance on the supervising team of PhD candidates is encouraged. This means that PhD supervision by at least one woman is a criterion for the ranking of thesis grants. The aim is to encourage women to supervise theses, enabling them to boost their research career. Another important criterion is applied in the lab: for any application (promotion, grants, etc..) for applications with equivalent skills, women are favoured. In addition, although it is not compulsory, research teams are strongly encouraged to nominate a female and a male team leaders or co-leaders. Over the years, this rule has been increasingly applied by teams. These criteria are essential to fight the glass ceiling within our laboratory.

We look forward to the next survey to measure the impacts of our actions. Indeed, we will measure the impact of our actions on the awareness of gender discrimination through the next survey that we will launch in 2024. The survey contains a set of questions to assess the situation of discrimination in the lab but also to evaluate the members' opinions and stereotypes.

One originality of our committee is that we are **principal investigators of research projects** in computer science to create new technological solutions to promote gender equality. We have currently two research projects.

The first project, called, **ANTI-STEREOPTYPES**, aims at exploring the use of child virtual agents to reduce the stereotype threat of girls in Sciences. For this project, we have obtained several financial supports (ILCB, labs, PIA3). We have obtained a PhD grant. The PhD student is supervised by one full professor in Psychology expert on stereotypes and by one researcher expert on virtual agents of our committee. The PhD student has developed a computational behavioural model to create virtual child role model in a learning environment. A large experimentation has been conducted with nearly 500 middle school students to compare the maths performances of girls and boys with and without a virtual female or male role model. The first results published in an international journal and international conferences tend to show that the proposed solution may be used to improve the girl's performances in maths by reducing unconscious stereotypes.

The other ongoing project, called **TRUENESS** ("A Virtual Reality Forum Theatre for Discrimination Awareness") aims at designing and deploying a virtual reality training tool to raise awareness of situations involving social discrimination (ethnic and gendered) and to train individuals to react when they witness such situations. The tool is inspired by a method of interactive theater called the forum theater technique. The forum theater is not limited to raising awareness on a particular subject but allows individuals to develop and simulate concrete strategies that they can then use it in their daily lives to deal with these types of situations. The final tool of our project will expose the user to a scene involving discrimination simulated by autonomous virtual characters through a virtual reality headset. The user will be instructed to converse with the virtual actor displaying discriminating behavior to make the virtual actor aware of their behavior. Different interactive situations will be simulated involving different types of social discrimination (ordinary sexism and ordinary racism) in different social contexts (e.g., hierarchical relations, opposite genders) and through various socio-emotional behaviors of the virtual actors (conciliatory or aggressive attitudes, etc.). The virtual actors will be integrated into a VR platform that simulates social interactions using natural language. The goal is to deploy a tool that can be used on a large scale to make individuals aware of discriminating social behaviors and train them to deal with such situations. The methodology to create the tool is based on machine learning techniques to generate automatically the multimodal behavior of the virtual characters. The computational behavior models are constructed on corpus of actors playing a forum theater on discrimination. We have collected ourselves the corpus to construct the models. This project has received several financial supports (CNRS, Cognitive Science Institute). A first article in an international journal has been published. We are preparing application to hired engineers to implement a first version of the tool in virtual reality.

Next steps

Inspired by the actions of other labs, we launch in 2024 a **mentoring programme** for women in collaboration with the mathematics lab of our university (I2M) in order to cross the mentee and mentor.

Remark. This submission can be considered as a runner up if it does not win the award, and be included as an exemplar of best practice in future Informatics Europe publications.