Gender Equality and Digital Transformation

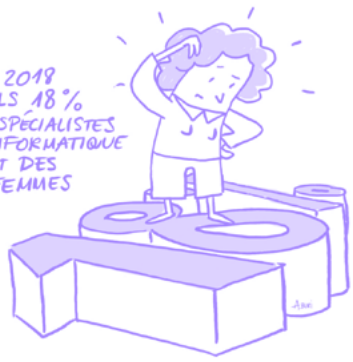
White paper

LA CLIT-REVOLUTION PASSE AUJOURD'HUI PAR LE NUMÉRIQUE

ATTRACT WOMEN!

LE NUMÉRIQUE EN TANT QU'OUTIL DE DÉVELOPPEMENT ET D'ÉMANCIPATION

EN 2018 SEULS 18% DES SPÉCIALISTES EN INFORMATIQUE SONT DES FEMMES



Amélie Buri
During the 2023 Conference, illustrator and graphic designer Amélie Buri drew a series of sketches from life during the lectures, workshops and round tables. These drawings capture the discussions that took place over the two days and illustrate this white paper.
www.amelieburi.ch

The “Gender Equality and Digital Transformation” project is a collaborative project funded by swissuniversities as part of the P-7 Programme Diversity, Inclusion and Equal Opportunities in the University Development (2021-2024). It was led by the University of Lausanne in collaboration with EPFL, HES-SO and the strukturelle association.

genre/numérique

UNIL | Université de Lausanne

Hes·so

EPFL

swissuniversities

strukturelle

/ Table of contents

Brief overview

13 women in
the top 100 of French-speaking
Youtube 2024

18%
of female students
in computer science
in Switzerland
OFS 2024

1/2

1 in 2 women report
facing sexism in
the tech workplace
WEBSUMIT 2024

25
minutes to create
a pornographic
deepfake

99%
of this content
targets women
STATE OF DEEPFAKE 2023

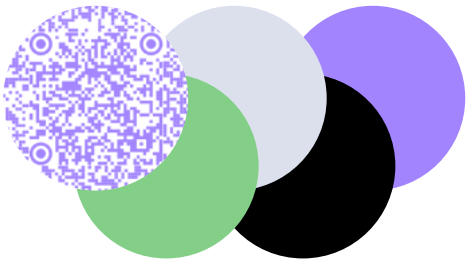
Gender equality and digital transformation *project*

A 4-year project

3 two-day Conferences

4 satellite events

Over **21** lectures and round tables



5 video clips

180 subscribers

20 sent newsletters

Introduction

The “Gender Equality and Digital Transformation” (EGTN) project that led to this publication could easily borrow its title from another publication an excerpt from a recent UNESCO science report: “To be smart, the digital revolution will need to be inclusive”. [1] This project was born out of the observation that issues relating to gender equality and to digital transformation are often dealt with in isolation from each other, which significantly limits their scope. We therefore decided to examine the presence of girls, women, the social construction of femaleness and gender in the digital world.

In Switzerland, as in many other countries, the low representation of women in the digital professions has produced a number of blind spots, as is also the case in other fields and in the sciences in general. This problem has become even more acute with the exponential development of artificial intelligence (AI), which has recently invaded our lives. AI certainly offers opportunities in terms of efficiency and time savings, but it is not immune to the gender or diversity biases inherent in our societies, and the design and use of these new tools therefore need to be questioned.

The objectives we set ourselves at the outset of this project were: to draw a state of the art on the mutual effects of digital transformation and gender bias; to encourage innovative approaches using digital technology to promote gender equality; and to study concrete ways of supporting women’s careers in the digital sector. After three years of work, the very positive assessment that we can draw from our activities shows that the theme addressed met a significant demand in various networks of players that extend well beyond the world of higher education. Both our administrative and

political authorities and the business world, and to a lesser extent the media, responded by joining us in the annual events we organised under the title “Gender and Digital Conference”.

The most encouraging result has been the development of a very active community around issues of gender and digital technology. We therefore logically chose to give a very large voice to the members of this community in this publication. This project would never have been such a success without their enthusiastic, persistent and critical engagement. We would like to thank them all.

This project came into being thanks to initial exchanges instigated by the dhCenter UNIL-EPFL, which ceased operations in 2022, and various bodies in charge of equality and diversity at the University of Lausanne (which coordinated the project), EPFL and HES-SO, as well as the strukturelle association as part of the P-7 Programme Diversity, Inclusion and Equal Opportunities in University Development (2021-2024) of swissuniversities, which we would like to thank here. A new project is currently on track, for the year 2025 at least, and – we hope – for several more years.

1 This book was originally written in French and contains many references from the French-speaking world. Some documents or project sites may only exist in this language.

How computing became a man's job

In 1955, IBM France was preparing to build an information processing machine called Electronic Data Processing System. François Girard, head of the advertising department, was looking for a translation. He consulted Jacques Perret, his Latin philology professor at the Sorbonne. On 16 April, Perret sent him a letter that has become famous: "What would you say about "ordinateur"? It is a correctly formed word [...] as an adjective designating God who puts order into the world". He would make other suggestions, such as ordinatrice, a noun for a female agent who carries out tasks. But for IBM, the temptation was too great! And so the "ordinateur" (computer) was born, a machine that, like God, puts order into the world. This definition may be a starting point to explain why so few women and so many men are computer specialists. Working in this field can give you the impression not only of mastering the rules of the modern world, but above all of having the power to make them. And in the history of knowledge, women pass on the rules that men make. Today too, computer scientists are designing and configuring a digital world that is superimposed on the real world at almost every moment.

There is no shortage of women in the history of computing, but not in just any position. At first, they excelled at programming, because this discipline was seen as secondary, the core of the profession being the construction of machines, a job for (male) engineers. This is how programming came to have its pioneers, of whom Ada Lovelace is the best known: in 1842, she was the first person to write an algorithm for a machine built by the English engineer and mathematician Charles Babbage. She was never forgotten in the world of computing, as a programming language was named ADA in her honour in 1977. But she has only been known to a wider public for a few years. Her recent fame makes it feel like she is the exception that proves the rule, a Marie Curie of computing.

In fact, Ada Lovelace's invention marked the beginning of an era of programming in which women were very much present. During the Second World War, the ENIAC Six (Kathleen Antonelli, Jean Bartik, Betty Holberton, Marlyn Meltzer, Frances Spence and Ruth Teitelbaum) invented programming by programming one of the first computers. After the war, Grace Hopper's work led to decisive advances in this field, as she invented compilation, which she applied to the most famous of business computing languages: COBOL. At that time, hardware was worth more than software, and men took over hardware and left software to underpaid women mathematicians. The terms "hard" and "soft" are gendered, like the "hard" and "soft" sciences, reflecting the gendered division within the computing professions.

Margaret Hamilton, whose ultra-reliable software could compensate for human error, made possible the moon landing of the Apollo module in 1969. She was the first person to be called a "software engineer". Programming then achieved recognition and became a scientific discipline in its own right. As digital technology took on greater importance in economic life, it became more professional, and study programmes opened up in higher education. When women entered the job market in large numbers in the 70s and 80s, they also entered computing, which was seen as a service industry profession, to be practised in banks and government departments, seemingly appropriate places for women

scientists. Then two phenomena emerged that contributed to the masculinisation of computing.

First, microcomputers entered homes in the 1980s. Boys who were very invested in their relationship with the machine gathered around it. From this emerged the stereotype of the computer specialist in popular culture, the nerd or geek. At the same time, microcomputers also entered companies, replacing large centralised systems. This created a false continuity of representation between the home computer and the company computer, as people imagined that working in computing meant becoming the adult version of those young people who spent their days programming and playing games.

Secondly, the growing prestige of the computing professions provided the decisive impetus for masculinisation. A profession that is being downgraded becomes feminised (as in education) and, conversely, when a field becomes more important, it becomes masculinised. In the 1950s, stereotypes were used to justify hiring women computer programmers on low-paid jobs: programming was described as a good job for women because it resembled secretarial work and required meticulousness. As programming gained in value, other stereotypes emerged to rationalise this transformation: programming was then described as a logical discipline, close to machines and the abstract. This now made it seem unnatural for women, who were supposed to be exclusively concerned with human relations. We forget that women were the first programmers and that the model of the asocial computer specialist that emerged in those years was only a particular case that was made emblematic.

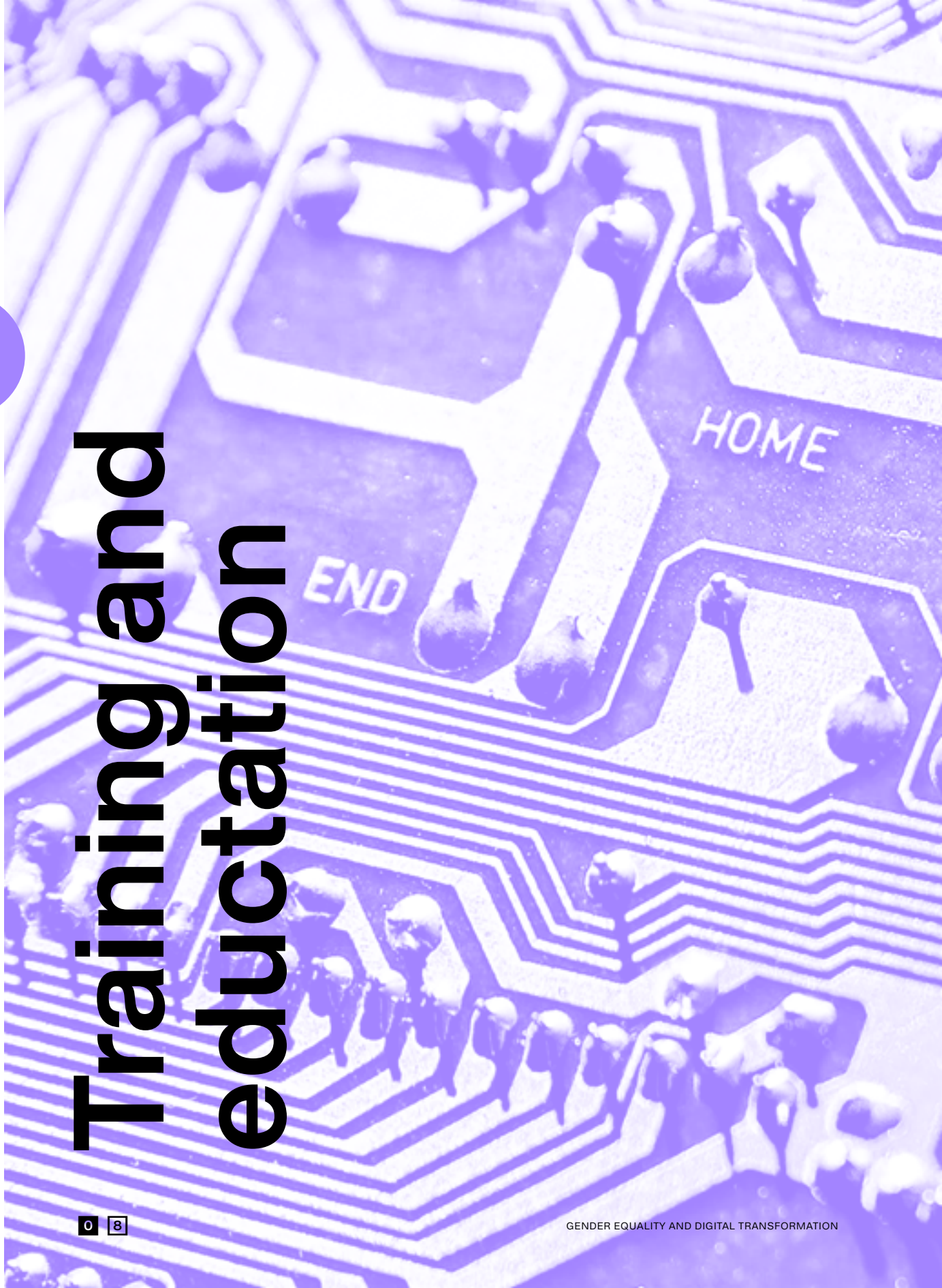
"(...) and men took over hardware and left software to underpaid women mathematicians."

Isabelle Collet

Associate Professor at UNIGE, leader of G-RIRE and computer scientist.

By the beginning of the 90s, the transformation of the population of computer specialists was complete, and it remains unchanged today: with a European average of around 20% women, as in Switzerland, the digital world is a male one. Yet the transformation of our daily lives by digital technology is a reality, and artificial intelligence is already revolutionising these new uses. We should be concerned about not letting these innovations be imagined, designed, installed and configured by a population that is 80% homogenous and which, however well-intentioned, will have difficulty thinking about inclusiveness.

Training and eductation



From primary school to higher education, gender bias persists

At a time when digital education is being rolled out in classrooms in French-speaking Switzerland, it is evident that stereotypes do not stop at the school gates and that the old clichés conveyed by blue and pink toys have not disappeared. On the encouraging side is the potential of the role model embodied by the teachers, who are predominantly women up to secondary level: digital technology thus reaches students through a female personification. As for persistent stereotypes, it appears that bias can sometimes be found in the best intentions. A study by the HEP Fribourg, for example, shows that the teaching of digital citizenship focuses on raising awareness of online risks for girls and on encouraging digital agency for boys. This tends to reinforce the social norms that assign women to the relational sphere and make the technological sphere the preserve of men.

Gender bias translates into measurable disparities in higher education. In 2024, women only made up 23% of students in the field of Engineering and Architecture at the HES-SO (including computer science), and 22% of students at the EPFL School of Computer and Communication Sciences and School of Engineering. These figures have improved in recent years, but progress remains very slow. The low female representation among graduates in this sector is all the more striking that women are more likely than men to have a degree in higher education, that no gender skills gap has been identified in these fields, and that there is a shortage of IT specialists in Switzerland, as there is worldwide.

Solutions throughout the curriculum

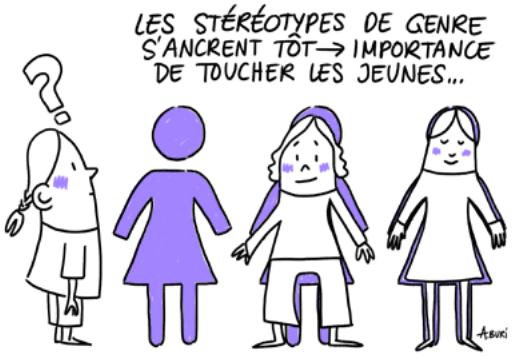
Role models: fortifiers rather than triggers. A number of initiatives aimed at raising girls' awareness of the digital professions are based on the observation that role models have a positive impact on the motivation of those considering a career in the digital sectors and on their resistance to the 'social censure' that would keep them away from these fields. Role models can thus reinforce an existing interest, but do not seem sufficient on their own to trigger a vocation. The choice of models also requires particular care: rather than figures with exceptional achievements (such as Ada Lovelace, who designed the prototype of a computer programme in 1842), it is preferable to choose people whose proximity and accessibility make it possible not only to identify with them, but also have actual contact with them, or even get forms of mentoring from them. Initiatives that create links with women working in the digital sector include the Swiss TecLadies project, the Portal promoting technical professions for young people and the Ingenieuse.ch project at the HES-SO, where female students take part online as ambassadors for these fields.

Quotas to break the vicious circle

Inequality works in a circle: the low presence of women in a field is an obstacle to increasing

their presence, because it influences their choice by shaping their perception of what is possible. One way of breaking this vicious circle is to introduce quotas to reinforce progress towards greater parity. This approach – which produces rapid results, but should not be approached as an isolated measure – is particularly appropriate for curricula where admission is based on a selection process. Moreover, studies have dispelled the idea that quotas would lower the level of skills in the fields concerned.

Talking about gender in digital curricula. Overcoming gender bias first requires naming it. Gender training in digital curricula enables women to deconstruct the feeling of illegitimacy that is projected onto them in this field, and makes men aware that the scarcity of women is due to social structures and representations rather than a lack of inclination for these fields.



Safe spaces and the right to indifference. If women are to see themselves as legitimate in digital curricula, these places must be safe spaces. In this context, women should be able to benefit from a "right to indifference" that is rarely available to them, consisting of being treated in a way that is not determined by their gender.

Multiplying entry points. A number of initiatives encourage girls to discover digital

Farnaz Moser-Boroumand

Head of the Science Outreach Department at EPFL

G/N Why propose STEM activities for girls only?

The aim of these programmes is to give girls confidence in their abilities, provide them with a favourable environment to learn about these fields early on and develop their potential freely in the company of peers and role models, while discovering the usefulness of these sectors for society. These activities counter the effects of gender stereotypes to which girls are exposed from an early age and which influence their orientation.

G/N Do you get any feedback on the impact of these activities?

Young girls like to take part in STEM activities aimed exclusively at them, unlike mixed activities in the same fields. Parents tell us of the confidence they have gained in these subjects. Female university students who took part in these programmes as children or teenagers confirm the impact they had on their choice of subject and would like to lead this type of course for girls. These programmes are achieving their objectives, and to have a global impact, they need to be developed further and deployed on a large scale on an ongoing basis. As the problem is multifactorial and part of a socio-cultural context, a range of measures need to be addressed to the various audiences whose understanding, involvement and actions are important (children, parents, teachers, employers, media).

careers at events such as the Futur en tous genres days in the French-speaking cantons, the MINT Vaud trade fair, or coding courses and workshops proposed by organisations and institutions. Some of these initiatives offer non-mixed spaces for girls, enabling them to learn computer science in a way that reduces gender bias and social pressure, and creates an environment where they feel safe to consider studying in these fields. However, it is important to avoid an approach that attempts to attract them with a "pink" version of "IT for girls", which would not call into question the fact that digital technology remains a male domain.

Support for the present and the future. Higher education curricula should be accompanied by mentoring, peer support and professional networking programmes, to help female students imagine their future and stay in the field.

"The problem is multifactorial and embedded in a socio-cultural context."

Farnaz Moser-Boroumand, Head of the Science Outreach Department at EPFL

CASE STUDY

STEM Portal

To inspire young people

The HES-SO STEM Portal is aimed at young people aged 12 to 19. It invites them to explore inspiring videos and sign up for activities in the STEM fields (Science, Technology, Engineering, Mathematics). The promotional campaign, entitled "Impacte demain", highlights the power of young people to positively influence the world of tomorrow by choosing a technical career.

Led by the HES-SO Engineering and Architecture (E&A) faculty, this initiative has three main objectives. Firstly, it seeks to increase the visibility of the Ingenieuse.ch project, which spotlights the daily lives of a group of female students at the six schools in the E&A field as ambassadors for their curricula in STEM, through articles as well as photos and videos on Instagram. Secondly, it aims to identify STEM promotion activities designed for children and adolescents. Finally, it aims to promote engineering programmes and encourage young people to pursue technical and scientific careers.

Designed specifically for young people, the STEM Portal presents these activities in an accessible and engaging way, including video interviews with female students conducted by adolescents, as well as articles written by the Ingenieuse.ch ambassadors.

More information at
www.impacte-demain.ch

BY MATHILDE GOBET

Swiss TecLadies

Mentoring and networking

Swiss TecLadies is the national support programme for future scientists set up by the Swiss Academy of Engineering Sciences (SATW). Launched in 2018, it is now a unique i nstrument for promoting women and girls in science.

The programme, based on inter-generational promotion, has many objectives: to support young girls interested in STEM (Science, Technology, Engineering, Mathematics) disciplines and professions, to show the diversity and applications of these fields and to raise awareness among different audiences (young people, parents, teachers) of the social importance of these subjects. In practical terms, the programme offers a 7-month mentoring scheme to 120 girls aged 14 to 19 throughout Switzerland, using a three-pronged approach: 1 One-to-one support, 1-to-1, from a female mentor working in a STEM profession. 2 A programme of activities, company visits and workshops to explore the diversity of these professions. 3 Personal development and career guidance workshops that address gender stereotypes. At the end of the mentoring programme, participants join the Swiss TecLadies Network, which gives them access to the community and to resources. The Network now has over 600 members, alumnae of the various mentoring programmes and future mentors.

BY EDITH SCHNAPPER

CASE STUDY

Olivier Voirol

Senior lecturer and researcher, SSP, UNIL. Member of the Master in Digital Humanities committee.

G/N What are Digital Humanities?

For some, Digital Humanities (DH) is meant to update the Humanities project by "humanising" the digital. For others, on the contrary, it serves to "digitise" the humanities. In my view, DH is neither one nor the other, but rather at the crossroads between the two. The challenge is to reintegrate technology – digital technology in particular – into the human and social practices to which it is always attached, and to show that it is a normative and socio-political object. This requires a "technological culture", encouraged by education and the spirit of research.

G/N Could these studies help to integrategender issues into computing?

"Technological culture" raises questions about the cultural dimension of technology, which is situated within social, political and economic relations, and therefore necessarily within gender relations. Technology is gendered. One of the aims of technological culture is to provide the tools for critical studies designed to decode the gendered relations embodied in technology and to point out the biases and inequalities they produce. We need to reinforce research and teaching that is sensitive to these issues, so as to provide the tools for critical studies and decoding of the socio-political, and therefore gendered, content of digital technologies.

Developing critical thinking with the “Tech Trials” / *focus*

At a time when our lives are increasingly conducted online, the ability to independently analyse, question and evaluate the information we receive is an essential skill. This need particularly concerns young people aged 12 to 18, who are growing up in a hyper-connected society. To give them the necessary tools to practise truly critical thinking, the Tech Trials, an initiative of the Empowerment Foundation, propose a playful and stimulating approach: putting digital technology “on trial”.

Technology on trial

The Tech Trials are life-size role-playing games in which participants take on the roles of lawyers. The “defendant” is a technological phenomenon: a social network, a voice assistant, a geolocation application, an artificial intelligence tool... The aim is to encourage in-depth reflection on the intentions, uses and consequences of these tools. For while these tools offer real opportunities, they also raise questions about ethics, privacy, inclusion and equality.

Discovering complexity

These mock trials are not just about passively receiving information. The young participants argue, counter-argue and learn to handle complexity. They discover that technology is neither fundamentally “good” nor intrinsically “bad”: it reflects the intentions of the people who designed it, the biases that run through it and the power relationships that surround it. Far from a simplistic discourse, the Tech Trials invite everyone to adopt a nuanced stance, sensitive to issues of gender, representation and diversity of viewpoints.

Learning to build an opinion and getting involved

In a digital world where information is sometimes truncated, knowing how to distinguish the reliable from the debatable is an essential asset. The Tech Trials provide a framework for honing this critical sense. Young people learn to construct reasoned arguments, listen to other perspectives and revise their own positions. In this way, participants acquire a key skill for becoming responsible citizens and for engaging fully, both online and offline, in building a fairer and more inclusive society.

These trials are much more than just a game: they offer real training in digital citizenship. They are a reminder that, when it comes to technology, nothing is fixed: everything can – and must – be questioned, debated and reinvented. /

BY LEILA DELARIVE

Professional environment and skills

Women in tech: a ceiling to break, a pipe to fix

There is a labour shortage in the IT sector, and this problem, in Switzerland as elsewhere, is not going to solve itself any time soon. This begs the question as to whether these vacancies in the job market will help to break the "glass ceiling" that keeps the number of women in this sector at 20% (20.5% in Switzerland in 2022, according to the latest figures from the Federal Statistical Office). It also raises the question of whether the needs of the market will lead to fixing the 'leaky pipeline' that is letting half the women working in this sector escape before they reach the age of 35 (according to an Accenture/Girls who Code study conducted in the USA in 2020).

In part, these obstacles to women's progress in tech are due to factors that are at work in the professional world as a whole. This is true of occupational segregation: women and men are concentrated in different fields (horizontal segregation), and the upper hierarchical levels are still predominantly male (vertical segregation). Moreover, in Switzerland, women tend to be confined to part-time jobs, for reasons that have to do with the gender pay gap (which influences the division of labour within household s), tax policies that do not favour dual-income households, the lack of accessible childcare facilities and working hours that make it difficult to reconcile the professional and family spheres.

The effect of these obstacles is quite pernicious, because the low presence of women in a sector inevitably gives the impression that there is something true in the stereotypes that designate them as intrinsically less suited to the sector in question. The clichés reinforced in this way then self-perpetuate as they are activated during recruitment and in the organisation of work. Women testify that their scarcity in a sector can be experienced as an indicator of a lack of legitimacy, leading to a form of self-censorship which in fact internalises social censure.

These barriers take specific forms in the digital sector:

- When they graduate from tech, women and men do not enter this sector in the same positions. Women rarely end up in the most technical professions, such as cloud or machine learning engineer.
- In the booming field of artificial intelligence, there are as few women as in the rest of tech (22% worldwide according to a study by the German NGO Interface). This is all the more problematic given that AI is an amplifier of gender bias, and that its applications are being deployed in areas where the workforce is heavily female, such as health and human resources, resulting in tools that are often out of step with needs.
- The culture of the digital sector is largely based on the start-up model, a company based on innovation and the expectation of rapid growth. The segregation at work in the job market is reflected here in the difficulties women have in obtaining funding and enjoying the same credibility as male entrepreneurs.
- The toxic environment and workplaces marked by mobbing and harassment, as

well as the limited career development prospects, contribute to the many departures from the sector.

It should also be noted that the low percentage of women in this sector is all the more striking given that these professions correspond a priori to the ideal social representation of the female profession, physically neither heavy nor dangerous and largely achievable remotely, and therefore compatible with domestic and family work. As Isabelle Collet shows in her contribution to this publication, women were actually very present in programming activities a few decades ago.

From recruitment to working environment, everything needs to be rethought

Rethinking recruitment. To hire more women in the digital sector, the recruitment process needs to be rethought. This involves the following aspects :

- Attractive communication highlighting the diversity and flexibility of activities in this sector, as well as its creative and social facets.
- Online job advertisements specifically targeting women, to circumvent the algorithmic biases that direct ads formulated in neutral language towards a predominantly male audience.
- Flexibility in the formulation of selection criteria in job advertisements and in their implementation in the recruitment process.
- Flexibility in the work-time percentage offered and openness to the possibility of job sharing (splitting the position between two people).

Reforming the working environment. In order to include more women in the digital sector, working environments need to be

G/N You describe yourself as a social entrepreneur and empowerer. What does that mean to you ?
The projects I develop and manage aim to provide solutions to societal problems and work for the common good. “Empowerer” because I help people to see their potential and develop it so that they can move forward on their professional path.

G/N Can you tell us about the Powerhouse project ?
Since 2019, the association has been supporting people, individually and collectively, to develop their ability to have an influence on what is important to them. This aim pursues an ideal that is to contribute to an evolution towards a fairer and more sustainable world. The Lausanne Powerhouse is a shared space for work, collaboration and meetings between people and entities committed to social values and solidarity, in concordance with the association’s mission in terms of both their projects and their operations.

G/N You are also the head of ada:flow. What are its aims?
The association supports the development of skills in order to reduce the digital divide, facilitates professional integration and develops the power to act with regard to technology. We create discussion forums on the uses and challenges of digital technology.

Magaly Mathys Grimaître
Founder of the associations ada:flow and Powerhouse

CASE STUDY

Liip SA

The digital agency aims for 40% women

The future of the technology sector depends on a greater representation of female talent, a challenge that Swiss digital agency Liip has chosen to meet with determination. Liip has set itself an ambitious target: to increase the proportion of women in its workforce from the current 32% to 40% in the medium term. This ambition is based on a clear observation and persistent challenges, in particular the scarcity of female applicants and the specific constraints of agency work, which are often demanding for mothers.

In order to bring about lasting change for its Liipers, the company has implemented a number of concrete actions, with a focus on diversity and integration. For Liip, this broader perspective means that complex problems can be resolved with precision. In concrete terms, Liip has taken the following measures: use of inclusive language, pay transparency, increased parental leave (16 weeks for mothers, 4 for fathers), flexible hours and removal of career barriers for part-time workers. Liip also collaborates with initiatives such as Django Girls and Women in Digital, and organises surveys and workshops to better understand the needs of its teams.This commitment also includes inviting all companies in the sector to work collectively to promote an inclusive and equitable culture.

BY LAURENT BUCHS

reformed, as they are currently based on models designed for a male workforce. This involves the following aspects:

- Establishing a “welcoming culture” and safe spaces, combating gender-based and sexual violence and ordinary sexism in the workplace.
- Proactive ways of consulting female employees in order to identify their needs and thus increase the chances of retaining them.
- Quotas and other tools that ensure parity in recruitment processes.
- Creating new professions, such as “data curator”, to develop more ethical, sustainable and inclusive data processing and help reduce the gender bias that penalises women in the professional world.

Greater participation by women in the future of digital technology would have a beneficial impact on society as a whole. Shaped mainly by white men and irrigated by masses of data from a past that does not represent our collective priorities and impulses today, this sector could thus evolve by moving away from a paradigm based on productivity and the will to power, and by focusing on a vision geared towards social impact.

42 Lausanne School

Actively promoting diversity

The 42 schools promote diversity, particularly gender diversity, which is our most immediate priority. Two arguments put forward by opponents of this approach are girls' supposed incompetence in mathematics and their lack of interest in technical subjects. However, at 42 Lausanne, women and men achieve similar results in the selection tests (including "la Piscine", or swimming-pool, a month-long intensive learning experience). Encouraging more women to apply is essential if we are to meet companies' needs. Our strategy targets women through inclusive communication, visual representations that are as diverse as possible and dedicated events: participation in the State of Vaud "Osez tous les métiers" day, coding discovery workshops, Women in FinTech seminar for women in finance.
Above all, we create a space based on respect for others and we are uncompromising with our candidates and students about the rules of living together. Some students still think that women are chosen because of their gender, revealing persistent prejudice. Other criticisms come from women who question the usefulness of specific actions. As a promoter of diversity, our director sometimes feels like an impostor... To move forward, he relies on the 42 network and programmes such as My Mentor is a Woman from the impactIA foundation.

BY CHRISTOPHE WAGNIÈRE

CASE STUDY

Swiss Association of Women Engineers (SVIN-ASFI-ASDI)

Nora Anna Escherle

G/N How was SVIN founded?
SVIN was founded in 1991 in Zurich by 30 women engineers. They wanted to create their own network for STEM women, who were often in a clear minority in education and the workplace. Sharing experiences, encouraging mutual reinforcement and highlighting STEM women and their achievements have been SVIN's key objectives from the outset.

G/N What are your objectives?
A particular priority for SVIN is to show girls and young women female role models, to encourage them to take an interest in STEM disciplines. Of course, there are more women in the STEM professions today than there were 30 years ago, but the minority status and many of the dysfunctions that prevailed back then very much persist. There is therefore still a great need for an organisation such as SVIN, which is committed to the interests of STEM women and their networking. To achieve its objectives, SVIN offers its members a wide range of networking events, round tables and continuing education courses, and attaches great importance to close collaboration with other related associations. SVIN also runs the KIDSinfo project in primary schools to encourage future engineers, as well as the "Cultural Guide" project, which helps companies to make their corporate culture more welcoming to women.

Femtech for health

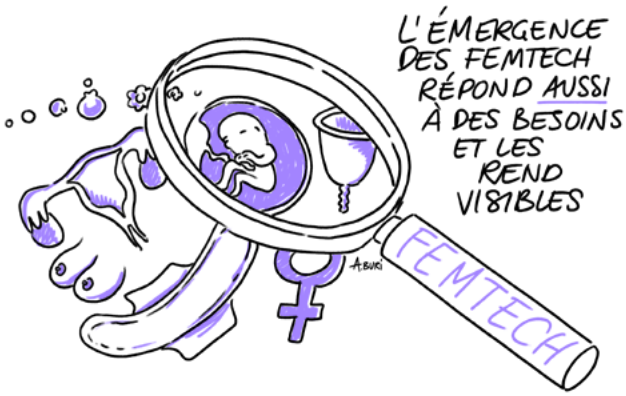
/ focus

Among the new digital tools in the service of health is a group that particularly concerns women: Femtech, a contraction of “Female Technology”, defines a variety of technologies, ranging from the management of menstrual health to fertility monitoring, and including care linked to menopause, sexual and maternal health. Historically, women’s health has been marginalised in medical research and technological investment. Long ignored, this gap is being filled by the emergence of these tools, driven by technological advances and a growing awareness of the specificities of women’s health.

The popularity of Femtech has been boosted by the mass adoption of connected objects and smartphones, on which health monitoring applications have been developed. These apps encourage preventive and personalised care, while reducing some inequalities in access to healthcare. By democratising their use, Femtech contributes to women’s empowerment, by giving them greater control over their health and raising awareness of issues that are often taboo, such as menopause and reproductive health.

Despite these positive aspects, a number of challenges remain, such as the protection of the data collected by these applications. Information on menstrual cycles or reproductive health is exposed to the risk of invasion of privacy. It is essential to ask who has access to this data and for what purpose. In the United States, for example, following the overturn of the federal right to abortion, the data collected may become evidence against women who have recourse to it. Scientific reliability is another major challenge. Without rigorous validation, certain technologies may prove ineffective or even dangerous for women’s health. Finally, design bias, due to a lack of diversity in the development teams, may limit the effectiveness of these products to certain categories of the population.

The Femtech market has grown in recent years, attracting more and more investment, although the funds allocated remain modest compared with other technologies. Initiatives such as Tech4Eva play a key role in building this ecosystem. Launched to raise awareness of the importance of women’s health and make up for the lack of investment in it, Tech4Eva helps start-ups to develop in this field. In 2024, with a cohort of 16 start-ups selected from 189 applications from 45 countries, it is a perfect example of the ability of Femtech to firmly establish itself in the technological and medical landscape. /



Algorithms and technological tools

Algorithms and inequality: how can we avoid the long-term establishment of a vicious circle?

In an ideal world, algorithms would be neutral. These invisible powers of the digital age, which are at the heart of the current surge in artificial intelligence (AI), would be pure sequences of logical and mathematical instructions, immune to human prejudices and impervious to inequalities. In the real world, however, it's a different story. What spoils the enchanted illusion of algorithmic neutrality is biases, distortions in both the data and the processes, which are thereby oriented towards certain results to the detriment of others.

In the field we are concerned with here, these biases are linked in particular to the phenomenon known as the gender data gap, i.e. the systematic lack of data concerning women and the use of data collected from men as if it were neutral and representative of both genders. As algorithms are trained with these data during the automated learning of the Also, they end up influencing assessments and decisions in a biased way. They contribute to determining collective (political, economic, medical, etc.) choices that are unsuitable for women and their specific experiences.

In other cases, algorithms reflect stereotypes, delivering results that contribute to reinforcing them. This is the case when automatic translation tools convert neutral wording into gendered phrases: nurse is necessarily "une infirmière" (a feminine word in French), doctor is necessarily "un médecin" (a masculine word)... Such is also the case, according to a complaint filed in France in 2023, when Facebook's algorithms contribute to discrimination in recruitment, by directing job offers towards almost exclusively male targets for an airline pilot position, or female targets for a secretary position.

Algorithmic biases are not a technical accident, but the product of systemic inequalities.

Even before these data-related biases, the reinforcement of inequalities can be found in the very design of algorithmic tools. Isabelle Collet notes that the thinking that shaped the development of AI from the 1950s onwards was based on a narrow view of human intelligence. In line with the model in force in an essentially male environment, it was defined broadly as the ability to prove a mathematical theorem and to play chess, to the detriment of other facets that would have been more valuable in the eyes of

women, such as the analysis and understanding of language. These language aspects are at the heart of the current wave of AI, driven by Large Language Models (LLM) that learn about the world by analysing what is said about it... Meanwhile, AIs have been given female voices and sometimes bodies to perpetuate a service role as 'virtual assistants', once again reinforcing gendered imagery. These observations remind us that technologies are not neutral, however innovative they may be, and that they are rooted in political, social and cultural systems. In this context, it is essential to question how they work and how they are used. However, these questions are made all the more complex by the fact that digital technologies are often owned by private companies, which remain highly opaque when it comes to these issues.

Paths towards algorithm fairness

Taking the time to test. To make algorithms fairer, time and resources need to be allocated during the design and test phases, before algorithmic tools are deployed. In 2021, for example, New York City introduced a law requiring a 'bias audit' before AI tools are introduced into the employment sector.

De-biasing the data. The representativeness of data sets also needs to be improved, while avoiding false solutions: deleting information that indicates gender in order to make data 'neutral' without closing the gender data gap obviously does not eliminate bias.

Illuminating opacity. Algorithms evolve in the often highly opaque ecosystem of web companies, which do not share much information about how these tools work. Imposing transparency is essential if we are to reach algorithm fairness.

Broadening the spectrum of diversity. To make algorithmic tools fairer, the teams developing them need to be composed more

Mascha Kurpicz-Briki

Professor for Data Engineering at BFH and in charge of the BIAS project in Switzerland

G/N What are the issues surrounding AIand inclusion?

Language models are trained on vast quantities of data produced by our society. Different types of relationship are encoded in these models. For example, the association between a banana and the colour yellow is essential. However, there are other relationships deduced from the data that we do not wish to reproduce or reinforce in the texts generated by these models. This is the case for positive or negative associations between names of different origins, or between genders and professions.

With the European research project BIAS, we are looking at this issue from various interdisciplinary angles. A crucial element is to examine the societal stereotypes tha t are reflected in language models. We are conducting this investigation for several languages, as research indicates that these biases and stereotypes vary according to linguistic and geographical areas, making them complex to detect.

G/N How can we ensure that companies use unbiased AI?

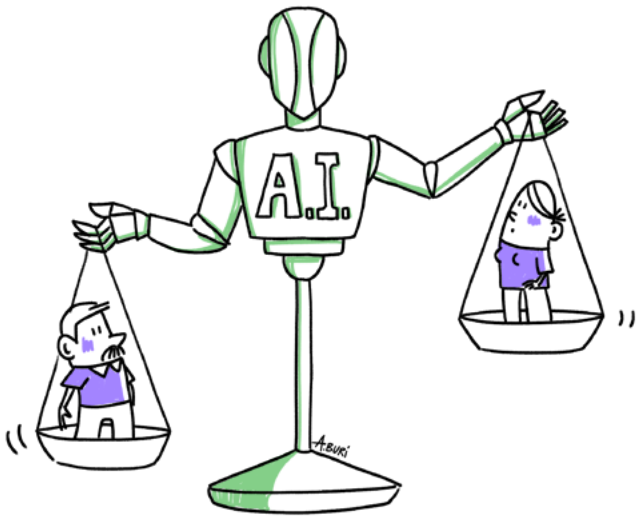
At the moment, there is no technical solution to completely eliminate these biases, so there is no AI that is free from them. We need to be aware of the risks a nd limitations when developing, integrating and using language models, and companies need to manage these risks.

equally in terms of gender, but not only. Interdisciplinarity is also needed in order to bring in viewpoints other than those of data and computer scientists. The users of these tools should also be involved right from the design stage, while ensuring that women and marginalised groups are represented in these consultations, so that their needs can be addressed and met.

Avoiding techno-solutionism. "Sexism is a feature, not a bug", as English computer historian Mar Hicks noted in 2021 in the collective work Your Computer Is on Fire. Algorithmic biases are not a technical accident, but the product of systemic inequalities, and correcting algorithms is clearly not enough to change society.

Beyond the field of algorithms, digital tools can also contribute to gender equality through solutions developed in service of women's health, to which the field of femtech is devoted, or in connection with safety. Many tools, for example, help to combat violence against women. Among them, the Eyes Up application enables people to report cases of sexual harassment, while the Sophia chatbot, a chat application proposed by the NGO Spring Act and available on messaging applications such as WhatsApp and Viber, advises victims of domestic violence and provides them with resources. Also of note is the #withyou project launched by Tech Against Violence, which offers an online questionnaire to identify domestic violence.

These digital technologies are often owned by private companies, which remain highly opaque when it comes to these issues.



AlgorithmWatch

For ethical and beneficial AI

CASE STUDY

How can we ensure that this technology does not reproduce existing injustices or serve the interests of a few? And how can we shape AI, rather than letting it shape us?

AlgorithmWatch is a non-profit, non-governmental organisation based in Zurich and Berlin. We are committed to ensuring that algorithms and Artificial Intelligence (AI) strengthen rather than weaken justice, democracy, human rights and sustainability. Our work aims to create a social and legal framework for algorithms and AI so that these systems benefit everyone. That is why we have submitted demands to the Federal Council and Parliament along these lines:

Artificial Intelligence strengthen rather than weaken justice, democracy, human rights and sustainability

Fundamental rights

Whether in the workplace, in education, in police work or in social work, when algorithms influence decisions that have a major impact on people's lives, these mechanisms must be comprehensible to the people concerned and to us as a society. Fundamental rights must be protected and people must be able to defend themselves legally if they feel that algorithms have affected them negatively or discriminated against them.

Society and democracy

Social network algorithms, which partly favour polarised, stereotyped or provocative content, are shaping public debate. AI chatbots, which are not reliable sources of information, are increasingly being integrated into search engines. Problematic content, such as deepfakes (images produced by AI that simulate videos of real people), is being disseminated on social networks and can be damaging. We need to hold the providers of these platforms accountable and promote public interest research as well as democracy and media education in order to understand their impact.

Power and sustainability

The value chain behind AI is currently characterised by a concentration of power in the hands of a few large companies, a very high ecological footprint and sometimes precarious working conditions. Our aim must be to design technology in such a way that it is socially, economically and ecologically sustainable. Companies must take responsibility for their supply chains, guarantee fair working conditions, make their resource consumption transparent and reduce it algorithmwatch.ch/fr/reglementations-de-l-ia/

BY ESTELLE PANNATIER

Video game characters for or against gender stereotypes

/ *focus*

In video games, “player characters” (controlled by the player) fall into two categories. On the one hand, “ready-to-play” figures, whose skin you slip into as you would slip gloves on; on the other, protagonists to co-create, who require to be completed before you play them. In this case, players adopt a more or less extensively modular virtual body, which enables them to hide from others but also to reveal themselves, as it provides them with an appearance and gives them access to abilities and roles.

Each video game character is a fusion of a player and a virtual figure. In this way, games fulfil every fiction lover’s dream: to become totally involved in the story. No other media form has ever offered this possibility or taken the relationship with the character to such extremes.

Mainstream games have long offered fewer female playable characters than male ones, and portrayed the traditional militarised masculinities alongside the customary hypersexualised bimbos. But over the last ten years, things have been changing. Games now feature more female protagonists. They commonly offer you to choose the gender of your avatar. Sexism persists, but more complex and less stereotyped heroines have emerged. Today’s games portray more women as subjects and fewer as objects, in terms of both appearance and roles. At the same time, representations of LGBTQ+ characters have developed and become more respectful. Hard to say, however, whether the studios developing the games act out of conviction or commercial pragmatism.

Many scientific studies have established links between the sexist nature of certain video games and the players’ behaviour outside these games. This phenomenon, sometimes referred to as the Proteus effect, also has a positive aspect, as other analyses have shown: when its content is suitable, the video game medium can work to promote respect for others, whatever their gender or sexual orientation.

Beyond the issue of gender, it is important not to overlook the other stereotypes that may affect avatars, and to adopt an intersectional approach. But in any case, it seems that video games, because of the very particular structure of the characters they offer you to play, could potentially contribute, on their own scale, to the construction of a more open, tolerant and inclusive world. /

BY FANNY LIGNON


Public space
and safe place

Online inequalities, cyberviolence and invisibility

Is the Web, a public space of infinite dimensions, marked by gender inequalities in the same way as the rest of the digital universe? This is not the case when it comes to Internet use, at least not in wealthy countries, where women are now as active online as men. It is the case, on the other hand, when it comes to content, in which the part produced by women is still quantitatively inferior and not very visible, and women's representations are based on stereotyped imagery.

The fact that women are less involved in content production can be explained in part by the pervasiveness of online violence. A study by the Economist Intelligence Unit published in 2020 reports that 85% of women worldwide have experienced or witnessed online violence, and 38% of them have been directly targeted by such violence. The phenomenon has also intensified with the offensive of online masculinist networks described by French journalist Pauline Ferrari in her investigative book Formés à la haine des femmes ("Trained to hate women", 2023).

This violence is even more severe when it affects women in an intersectional way, where sexist hostility intersects with racist prejudice or intolerance based on religion or sexual orientation. Cyberviolence affects women's physical and psychological health, safety, independence and autonomy. This violence also forces them to leave public virtual and even physical spaces, which reduces the diversity of formative and informative voices online and the data these ultimately represent. These individual or collective attacks, which are sometimes professionalized, take several forms:

"Gendered disinformation"

In the Johnny Depp/Amber Heard case (2022), for example, a campaign on social networks aimed to make people believe that the actor had been cleared of the acts of violence for which he had actually been convicted, thereby turning Amber Heard into an aggressor.

Online harassment and hate speech

When targeting women, online hate speech is systematically sexualised and often aims to threaten and then force its target to leave the digital space and public life.

Revenge porn

The publication of intimate sexual content without the consent of the person represented is sometimes coupled with doxxing, the dissemination of personal information such as e-mail and home addresses without the person's consent.

Digital domestic violence

Forms of cyberviolence are found in 9 out of 10 cases of domestic violence, according to the French centre Hubertine Auclert. This may involve tracking with devices such as AirTag (designed to locate objects such as keys or bags) or controlling access to online accounts to exert financial control and economic violence.

Web platforms bear a major responsibility for this violence. 'Hate is their business model', Indian journalist Swati Chaturvedi notes in the Monetizing Misogyny report (2023) by the NGO #ShePersisted. Online hate speech, particularly misogynist hate, is considered to be the most effective content for keeping the public glued to their screens, according to journalist Mathilde Saliou's investigative book Technofeminisme. Comment le numérique aggrave les inégalités ("Techno-feminism: How digital technology exacerbates inequality", 2023). The platforms' responsibility is also at stake in the practice of "shadow banning", which makes the online publications of the targeted person as invisible as possible, by influencing the way they are processed by the algorithms. This practice was the subject of a complaint filed in 2021 by French feminists against Meta, the company that owns Facebook and Instagram.

A hybrid activism between the physical and digital worlds has emerged online, with #Metoo as its most striking example.

CASE STUDY

Femigeeks

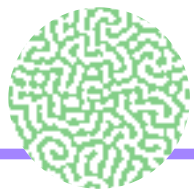
For a non-sexist pop culture

Since they fell into the magic cauldron of geek culture when they were little, the members of the Femigeeks association have seen their passion often clashed by the omnipresent sexism of the milieu. Too often relegated to the role of objects rather than protagonists, women are poorly represented in narratives and their experience suffers greatly as a result.

To combat these stereotypes, Femigeeks uses its website and social networks to promote media that respect the diversity of genders, sexualities, cultures and origins. The association offers a selection of video games, comics and manga that highlight these diversities through articles and video content. The aim is to provide a reference point for those looking for more inclusive content.

Femigeeks also takes part in festivals, where its members present games featuring strong, inspiring female protagonists. They also host round tables, sharing their experience as women in the world of video games. These events provide an opportunity to discuss the challenges of making geek culture more egalitarian and respectful.

femigeeks.com



A minefield as well as a source of opportunities

Countering cyberviolence. Against the platforms' lack of self-regulation, the gaps in the legal framework against online violence and the difficulties in enforcing the law, initiatives are multiplying:

- In German-speaking Switzerland, the #NetzCourage association has launched a digital ambulance service. Victims give the # NetzAmbulanz access to their social networks so that the attacks against them can be documented without them continuing to be exposed to them directly.
- In France, the association #StopFisha provides support for victims of revenge porn, while Prenons la Une and Nothing2Hide have published online guides for women journalists faced with online harassment.

Countering invisibility. In order to "de-invisibilise" women as active subjects, the online traces of their actions in the world must be 'un-erased'. This is what the French-speaking association Les sans pagEs is doing, as it works towards bridging the gender gap on the French Wikipedia by creating biographical pages on women.

Amplifying online feminism.
A hybrid activism between the physical and digital worlds has emerged online, with #Metoo as its most striking example. The use of digital platforms has enabled women to network and to report sexual violence to an unprecedented extent, forcing all sectors of society to take up the issue.

As Josiane Jouët explains in her book Numérique, féminisme et société ("Digital, feminism and society", 2022), "Web 2.0" based on participation and interaction, has seen a renewal of the ways in which feminism is disseminated. The horizontality and immediacy of social networks enable users to share warnings, experiences and information through content that draws on emotion, expressiveness and humour. Online platforms make it possible to reach a large and diverse audience and directly call on public authorities, companies and the media. Today, feminist collectives are using digital technology as a complementary tool, amplifying the impact of their actions on the ground.

Stop Hate Speech

Against online hate

We have been fighting online hate speech in Switzerland since 2019, by combining civil society, technology and science. In collaboration with ETH Zurich, we develop innovative solutions, encourage the active participation of civil society in online debates to reduce violence and offer support to those affected by this phenomenon.

Stop Hate Speech has a two-pronged approach: individual support for those affected and structural awareness raising in civil society. We engage a broad public to take part in online discussions in a constructive way, using science-based strategies. We have indeed proven that responding to hateful comments by inducing empathy towards the people concerned (Counter Speech) helps to reduce online hate.

CASE STUDY

At the same time, we support the people and organisations affected, helping them to protect themselves and maintain their presence in public debate. Together, we want to build an inclusive and respectful digital space, where everyone can express themselves freely and without violence.

Our online platform provides an easily accessible point of information. Visit www.stophatespeech.ch

BY MORGANE BONVALLAT

Mathilde Saliou

tech journalist, author of
Technoféminisme, comment le numérique aggrave les inégalités

G/N Is online sexism a danger to our democracies?

The scale of the violence perpetrated against women and minorities on digital platforms is very different from that perpetrated offline. Thousands of interconnected people can turn against one person or group in an instant: this effects radical erasure from public discourse. More insidious are the hierarchies encoded in algorithmic systems, which reinforce already existing discrimination.

By promoting the idea that their technologies are neutral, platforms have succeeded in diverting external investigations and evaded their responsibilities. Yet a growing body of research shows that the algorithmic pipelines of social networks shape the discourses to which we are exposed and foster disinformation and hate.

G/N How can we achieve a more peaceful internet?

By questioning the tools we use on a daily basis, by giving priority to shared tools, such as Wikipedia, in order to gain digital skills while contributing to build shared knowledge. Helping each other online, reporting problems to the platforms, ordering harassers to stop their behaviour, equipping ourselves to combat potential algorithmic malfunctions – these are all ways internet users can act. Political action is another essential lever for forcing digital companies to fulfil their democratic responsibilities.

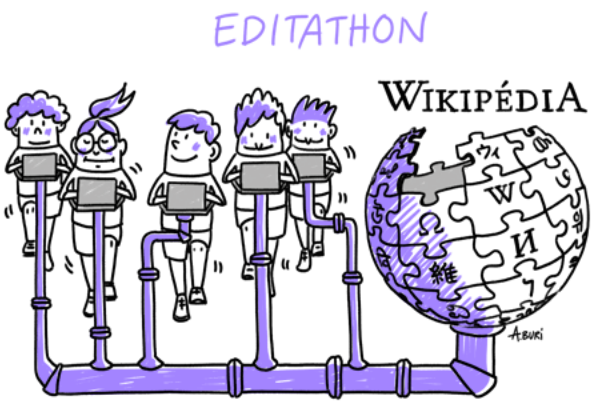
Editathons

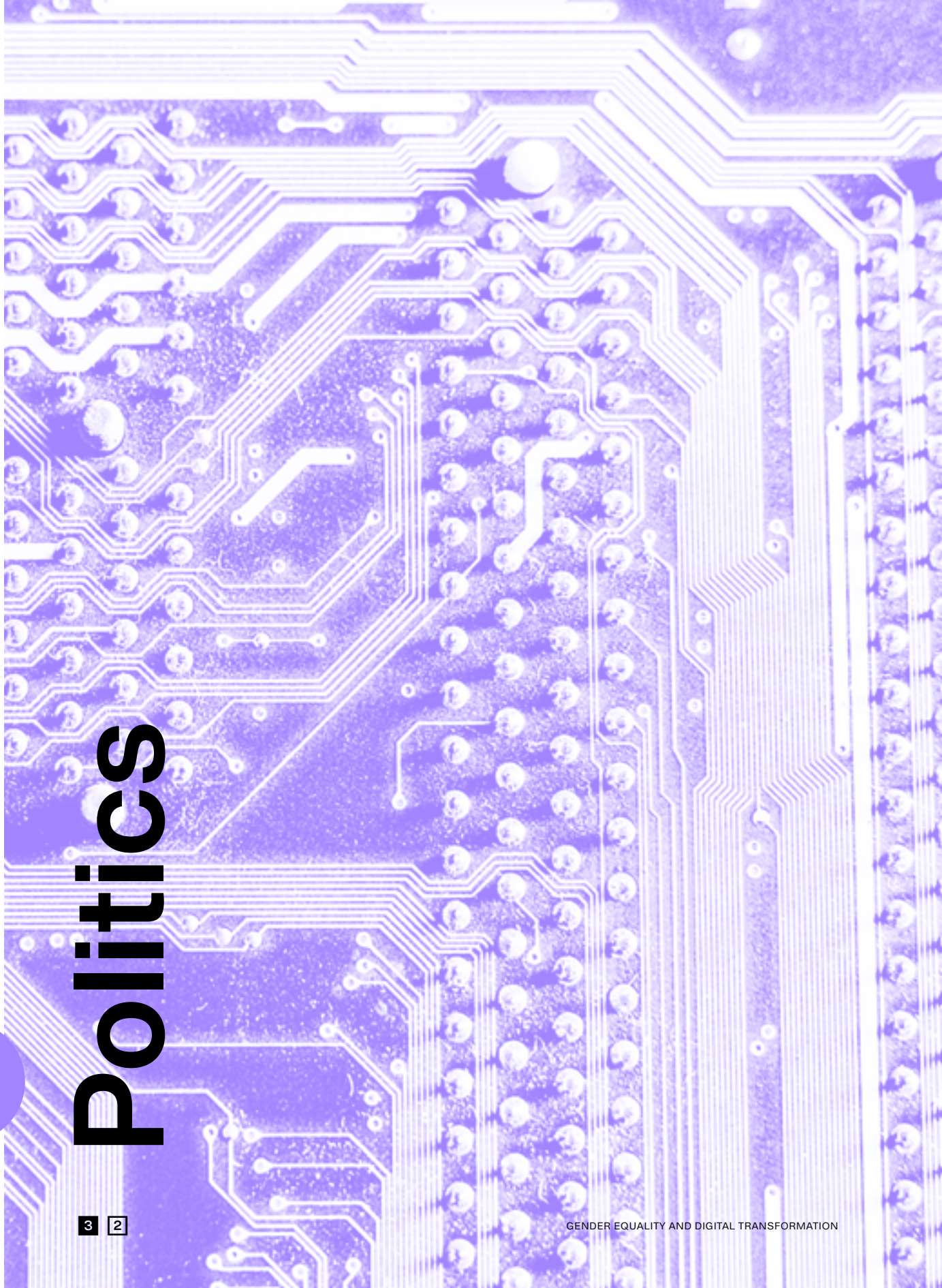
Since 2016, the aim of the association Les sans pagEs has been to make up for the absence of women on Wikipedia. There are only 20% of biographical pages devoted to women on the French Wikipedia. This gender bias is also reflected in the fact that the majority of contributors to the encyclopedia are men (around 80% according to the latest studies). This imbalance reflects how women have been made invisible in history and in our society. Through participatory events called editathons, the association addresses this knowledge gap by providing training to help people understand how Wikipedia works and create new pages devoted to female figures, gender minorities, their struggles and their achievements. These new contributors can then continue to enrich the online encyclopedia and collectively reclaim a portion of the Internet.

To date, more than 5,000 new pages have been created to compensate for the under-representation of women. This initiative has also inspired other projects, such as the Noircir Wikipedia association, which aims to highlight the under-representation of personalities from Africa or of African descent in the online encyclopedia and proposes multilingual editathons to fill the gap.

At the second gender/digital project Conference, a one-day editathon was held on the topic of women in biology and medicine. Participants were able to familiarise themselves with Wikipedia and propose three entries on women who have left their mark on the history of science and medicine in Switzerland (Catherine Elisabeth Vicat, Marie Feyler and Lucia Mazzolai). The workshop also led to the improvement of six existing entries.

Wikipedia can be a powerful tool for better representing women and minorities by enriching existing articles and creating new pages. Unfortunately, this ambition sometimes comes up against a section of the encyclopedia community, which is attached to rigid editorial standards that can slow down these initiatives. Debates about the 'notability' of subjects are frequent. While the recommendation is to rely on at least 2 focused secondary sources (books or articles in national media), published at least two years apart, these criteria work to the disadvantage of women, who are still under-represented in the media. Despite this, collective efforts and projects such as the feminist editathons demonstrate a growing desire to bring diversity to the voices on the platform. The progress made on the French Wikipedia, where the proportion of women in biographies has risen from 14% to 20% in 8 years, proves that it is possible to reverse the dominant trend. /





Politics

Politics is moving forward, but it needs to change pace

Gender inequality and digital transformation: the findings are there, and they are widely shared. The Expert Mechanisms on Discrimination and Violence against Women (EDVAW) platform, mandated by the UN, addressed the digital dimension in a 2022 report, showing that the problem exists worldwide and that action is urgently needed. In its 2024 edition, the World Economic Forum's Global Gender Gap Report included a chapter stressing that "gender gaps skew the technology transition". And yet, despite the awareness of this problem, the digital transformation ecosystem remains locked in this status quo of discrimination and violence against girls and women, and keeps minimising the involvement of boys and men as actors and beneficiaries of change. We need financial resources and sustainable training programmes to realise the political will to act on these inequalities.

At European level, the Digital Services Act (2022) requires digital platforms to take 'risk mitigation' measures against online violence, including 'non-consensual sharing of intimate material' and gender-based violence. The Artificial Intelligence Act (2024) provides for "a set of requirements for trustworthy AI", including the protection of equality between women and men.

In Switzerland, the political debate has been launched, at the instigation of women elected representatives (for example at the 2021 Women's Session) and civil society movements such as the Feminist Strike.

The Federal Commission for Women's Issues took up these questions in 2021, addressing recommendations "For a gender-equal digital transformation" to the Federal Council, and in 2024 drew up a report on "AI, algorithms and gender" in its journal Questions au féminin. In 2022, a motion to "Integrate the gender perspective into digital technology" was accepted by Parliament with the support of the Federal Council, which was then tasked with integrating the gender perspective into its digital strategy. In the meantime, the law has evolved: Swiss criminal law on sexual matters was amended in 2022 to include revenge porn, and at the end of 2023 Parliament agreed to do the same for online harassment.

It is encouraging to see that things are moving forward on the regulatory front, but there are still two reasons for concern. The first is financial: a tense budgetary context risks relegating these issues to a lower level of priority, even though they affect the daily lives of women and of the population as a whole. The second concern relates to the speed of change: the gap between what has been done and what remains to be done to bridge inequalities is closing slowly, while technologies are evolving very quickly. When it comes to gender inequality in digital technology, as with digital issues in general, policy needs to pick up the pace.

/ Recommandations

Digitalisation is a major opportunity, a kind of laboratory that should be useful for other areas, because change is happening now and it's happening fast. To increase women's involvement in the workplace AND in decision-making, a series of measures need to be implemented, including: more resources for career promotion, solid measures for work-family balance, support for professional retraining, continuing education in this sector and awareness raising among school guidance counsellors. This work is underway at the political level, but it must now be done at all levels if it is to succeed.

Johanna Gapany

Member of the Swiss Council of States

Creating a systemic legal framework to prevent and deal with gender-based and sexual violence. Including modules on equality, consent and the fight against discrimination from primary school onwards. Strengthening tools such as EyesUp through sustainable funding. Introducing restorative justice into the Criminal Code with accountability programmes for perpetrators. Finally, creating a national body to coordinate data and fill the gaps that may exist between different regions.

Léonore Porchet

Member of the Swiss National Council

Reducing the Gender Data Gap is crucial if we are to be digitally responsible. This means taking targeted action from compulsory education onwards, by raising girls' awareness about careers in the digital, science and technology sectors, and promoting gender diversity in higher education. Ensuring diverse research teams and raising awareness of biases in data and algorithms will help to create fair digital tools and make digital technology a lever for equality.

Isabelle Moret

State Councillor (VD) in charge of equality

Switzerland must act quickly to ensure balanced regulation of artificial intelligence, because we are not in a position to penalise discriminatory algorithms. To do this, we can draw inspiration from the European model and its recent law on AI, as well as from the German framework law on equality, which contains detailed private law provisions against discrimination, including multiple discrimination. An intersectional assessment of the impact of AI on gender equality is essential to counter algorithmic discrimination.

Cesla Amarelle

President of the Federal Commission for Women's Issues

Open letter to Google, Apple, Facebook, Amazon, Microsoft, X

The global digital transformation, driven by your companies, is profoundly redesigning the shape of our society. As technology leaders, you occupy a central position in shaping an equitable and inclusive future. Unfortunately, numerous studies show that the gender digital divide persists, limiting the economic and social opportunities of women, girls and minorities while compromising their online security.

Given this situation, the status quo and the cosmetic measures of the global digital ecosystem we observe, we call on you to act decisively and responsibly to ensure real gender equality in the technology sector and to combat violence and harassment based on gender and race within your companies.

Here are the concrete actions we are asking you to take, with examples to illustrate their importance:

ACTION 1

Adopt inclusive recruitment, promotion and talent retention policies and action plans

Despite recruitment efforts, women and minorities remain under-represented in technical and management positions.

- Set measurable targets to increase the representation of women and minorities at all levels.
- Measure the Gender Gap, the Gender Pay Gap and the Gender Leadership Gap and take concrete action to remedy them.
- Implement action plans with SMART criteria and sub-criteria to make digital transformation permeable to talent in an inclusive way at all levels: training, design, implementation, dissemination, use.

ACTION 2

Promote access to technological skills for girls, women and minorities

Lack of access to high-quality STEM training is holding back the emergence of female and minority talent.

- Maintain and support educational programmes that encourage women and minorities to enter technology careers.
- Offer programmes that give girls, women and minorities access to digital skills.
- Educate yourself on the fact that boys and men are not only actors, but also beneficiaries of gender equality in digital transformation.

- Impose training in ethics and the legal framework of the Istanbul Convention on all your staff in a cross-functional and interdisciplinary way.

ACTION 3

Guarantee gender equality in the design of technologies

Facial recognition algorithms are less accurate for women, particularly black women

- Require your governance and product development teams to be diverse and to include women and minorities in key positions.
- Require your development teams to use development or systems training databases with rich and complete datasets that are free from historical corruption, discriminatory conflations, patriarchal predispositions or preponderance of violence.
- Integrate ethics into all your development teams.

ACTION 4

Reinforce online safety for women and girls

Discrimination and violence, as well as psychological, sexual and structural harassment, targeted, organised or even paid on social networks not only discourage women and minorities from expressing themselves freely online, but also kill.

- Implement effective tools for reporting abusive content.
- Set up proactive moderation systems.
- Sanction and denounce all behaviour, whether inappropriate, unfair, illegal or unjust.
- Stop over-dotation and over-visibility of violent and discriminatory content.
- Reprogramme your algorithms to curb discrimination and masculinist networks.

ACTION 5

Publish transparent data on gender equality

A lack of transparency prevents an accurate assessment of progress and gaps.

- Share detailed annual reports on equality initiatives, including the proportion of women and minorities in technical positions.

In conclusion, as pioneers of innovation, your choices influence the lives of billions of users around the world. It is your responsibility to make gender equality a strategic priority and to adopt bold measures that will truly transform the digital landscape.

Maya Dougoud

Founder and President
Strukturelle

Isabelle Collet

Full professor,
G-RIRE team leader
President of the 'Equality' Commission
of the Faculty of Psychology and Sciences
of Education
University of Geneva

Sign the open letter

Conclusion

The “Gender Equality and Digital Transformation” project is drawing to a close, marking a major turning point in the exploration of the inequalities and potentialities inherent in digital transformation. By presenting gender and digital technology as interrelated prisms, this project has laid the foundations for a structural model of reflection and action in which every resource, relationship, innovation or policy is approached from an inclusive, interdisciplinary and sustainable perspective. By moving away from initiatives that are limited to isolated actions, this project has demonstrated, through its overall view, the need for a cross-cutting approach that integrates the gender dimension into all stages of the design and use of digital technologies.

Overall, the most valuable imprint of this project is undoubtedly the community it has created. By connecting a wide range of expertise, activists and decision-makers, it has sown the seeds of an active and committed network in Switzerland and abroad. Bringing together experts, organisations, institutions and citizens, particularly during the “Gender and Digital” Conference, has helped to legitimise the intersection of these two major issues. This interdisciplinary approach has made it possible to move away from a niche logic and place these issues at the heart of strategic decisions and day-to-day practices.

It remains imperative to establish that the responsibility for tackling gender issues in, through and for digital technology cannot rest solely with women or non-binary people. Indeed, gender equality in digital transformation is not a concession, but a shared progress in which men are also actors and beneficiaries. By using inclusive technologies and eliminating gender bias, everyone will benefit from an improved working environment, more social justice and greater innovation.

By fostering partnerships, it becomes possible to create platforms and content that reflect an intersectional diversity of perspectives. Initiatives such as the development of fair algorithms, greater access to digital skills for under-represented groups, and targeted awareness campaigns will help to overcome systemic biases.

Finally, the enthusiasm generated by this project will be embodied, in a second phase, in tangible initiatives, concrete actions and steps towards emancipation from a "bubble effect" that would risk keeping these debates confined within the circles that initiated them. In the coming months, a number of projects will be launched to keep this momentum going: a pop-up space dedicated to the interaction between gender and digital technology, designed as a living space for reflection and co-creation; a pilot multidisciplinary course combining gender and technology to train the next generation of committed professionals; and the organisation of the next "Gender and Digital" Conference, an annual meeting of players in the inclusive transition.

These projects, developed in close collaboration with SMEs and other partners, reflect the pragmatic ambition to transform the first phase of the project into action, and analyses into solutions. In this way, the "Gender and Digital" community will continue to share, innovate and promote the vision of digital technology serving equality and progress. More than an achievement, this project is a collective springboard, a call to catalyse tangible progress towards a more balanced and participatory digital future. ●

/ Network directory

During the “Gender and Digital” project, we were lucky enough to be joined by many associations, foundations, universities, companies and initiatives working for a more egalitarian digital world. Some worked behind the scenes, others held workshops, a few supported the drafting of the white paper, but all shared their knowledge, experience and networks.

We would like to thank them for their participation in the “Gender and Digital” project, and invite readers to discover them through this glossary:

Women in Finance 100women.org
500 Women Scientists www.500womenscientistszurich.org
Ada:flow adaflow.ch
Ada Tech School adatechschool.fr
Algorithm Watch algorithmwatch.ch
Apl ICT alpict.ch
Artemia www.artemia-executive.com
Association suisse des femmes ingénieures-SVIN.ASFI.ASDI www.svin.ch
BIAS Project EU www.biasproject.eu
BFH www.bfh.ch
CCRS – Center for Corporate Responsibility and Sustainability www.ccrs.ch
CFQF – Comission fédérale pour les questions féminines www.ekf.admin.ch
Condis SA www.condis.ch
CSSS – Comission de la Securité Sociale et de la Santé publique www.parlament.ch
CSW – Comission on the Statut of Women www.unwomen.org
DécadréE decadree.com
Découvrir www.associationdecouvrir.ch
Ecole 42 Lausanne 42lausanne.ch
Educa www.educa.ch
Empowerment Foundation www.empowerment.foundation
Empowr.ch www empowr.ch
Eyes UP eyesupapp.ch
EPICÈNE www.epicene.ch
EQUALS Her Digital Skills www.equalsintech.org
Femigeeks femigeeks.com
Femmes@numérique femmes-numerique.fr
flypaper flypaper.ch
FOILAI foilai.co.uk
Fondation impactIA impactia.org
Fondation Pacte www.fondationpacte.ch

GameLab gamelab-lausanne.ch
HEC Lausanne www.unil.ch/hec
HEIA-FR www.heia-fr.ch
HEP Fribourg hepfr.ch
HEP Vaud www.hepl.ch
HETS-FR www.hets-fr.ch
HETS-GE www.hesge.ch/hets
I love OpEx iloveopex.wordpress.com
IMD www.imd.org
Interface 3 interface3.be
IT Juristinnen it-juristinnentag.ch
IT Valley www.portail-digital.ch/it-valley-lassociation-du-digital-fribourgeois
L'EPROUVETTE www.eprouvette-unil.ch
LEARN learn.epfl.ch
Leiden Uni www.universiteitleiden.nl
Les sans pagEs sanspages.org
Liip SA www.liip.ch
MelMo Design melmo-design.ch
#NetzCourage netzcourage.ch
Noircir Wikipédia noircirwikipedia.org
NTNU www.ntnu.edu
PersonnalData.IO personaldata.io
Powerhouse powerhouse-lausanne.ch
Powercoders powercoders.org
Role Models in Tech rolemodelsin.tech
SATW www.satw.ch
SIA – Société suisse des ingénieurs et des architectes | Réseau Femmes femme.sia.ch
Spring ACT springact.org
Stop Hate Speech stophatespeech.ch
Swiss Engineering Vaud www.se-vaud.ch
Swiss Internet Governance Forum igf.swiss
swissTecLadies www.tecladies.ch
Tipee SA www.tipee.ch
Tech4Eva – Fondation EPFL Innovation Park www.tech4eva.ch
Tech Against Violence www.techagainstviolence.ch
UNIBAS www.unibas.ch
UniFR www.unifr.ch
UniNE www.unine.ch
UniGE www.unige.ch
UZH www.uzh.ch
Wikimedia.ch wikimedia.ch
Women at the Table www.womenatthetable.net
Women in Cyber Switzerland women-in-cyber.ch
Women in Tech Switzerland women-in-tech.org

/ Bibliotech

During the “Gender and Digital” project, we met the developers of a number of technological solutions contributing to the visibility of women’s skills, the acquisition of technical skills, and the prevention or management of violence and its consequences.

We would like to thank the tech talents for their commitment and for the synergies with the objectives of the “Gender and Digital” project. With this bibliotech, we invite readers to discover the applications below:

Database of Swiss women experts for media enquiries or panel or workshop interventions

She knows www.sheknows.ch

Expertes suisses lesexpertes.ch

Digital skills resources

HerDigitalSkills www.equalsintech.org/her-digital-skills

Reporting, protection and combating violence

Eyes Up eyesupapp.ch
Reporting cases of sexual harassment

Chatbot Sophia sophia.chat/
Chatbot providing advice and resources for victims of domestic violence

#NetzCourage netzcourage.ch /netzambulanz/
Online ambulance service to help victims of violence on social networks

#NetzPigCock www.netzpigcock.ch
Production of criminal complaints at dick pic reception

Prenons la Une https://prenonslaune.fr/
Guide for women journalists facing cyberbullying

#StopFisha stopfisha.org
Support for victims of revenge porn in France

#ShePersisted she-persisted.org
Toolkit for women in politics

#StopHateSpeech stophatespeech.ch
Toolkit and network for dealing with online hate speech

Ti3rs ti3rs.fr
Application for managing communication and the violence contained in that communication when sharing custody of children during separation

The Sorority www.jointhesorority.com
Mutual aid and support network

#withyou with-you.ch
Online questionnaire to identify domestic violence

/ Contact and newsletter

Website
https://wp.unil.ch/genre-numerique/

LinkedIn
EGTN – Egalité de genre et transformation numérique

The genre/numérique newsletter is a tool in the service of our community. Subscribe to keep up to date with the project and receive news, tools and resources on the subject. An exploration of the digital world from a feminist angle!

/ *Impressum*

Gender Equality and Digital Transformation.
White paper.
February 2025

Editorial board
Carine Carvalho, Clémence Danesi,
Maya Dougoud, Nic Ulmi, Sabine Kradolfer

Illustrations
Amélie Buri

Group and Conference photographs
Fabrice Ducrest

Graphic design
Bogsch & Bacco

English translation
Joanne Chassot

Printer
Pressor

Copyright
CC-BY-NC

With editorial contributions by
Isabelle Collet, Mathilde Gobet, Farnaz Moser-Boroumand, Edith Schnapper, Olivier Voirol, Christophe Wagnière, Gerhard Andrey, Magaly Mathys-Grimaître, Nora Escherle, Mascha Kurpicz-Briki, Estelle Pannatier, Mathilde Saliou, femigeeks, Morgane Bonvallat, Fanny Lignon, Leila Delarive, Léonore Porchet, Isabelle Moret, Cesla Amarelle et Johanna Gapany

Published with the financial support
of swissuniversities.

EGTN project team
With the participation of : Maria Bonina, Carine Carvalho, Clémence Danesi, Maya Dougoud, Hélène Füger, Sabine Kradolfer, Charlotte Mazel-Cabasse, Seema Ney, Héloïse Schibler, Natasha Stegmann et Nic Ulmi.

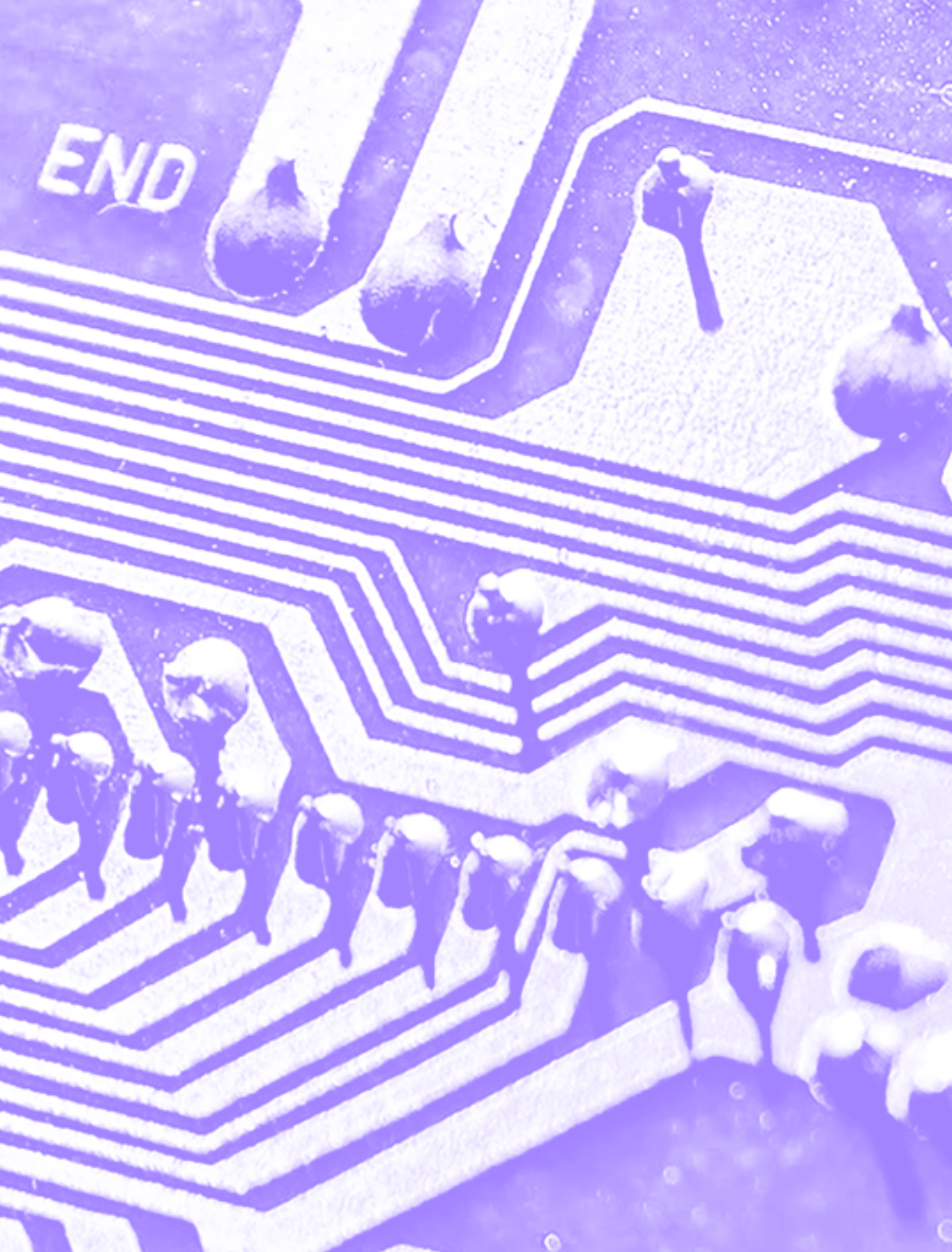



Unil
UNIL | Univer




Vers une égalité de genre dans le numérique ?
7 - 8 septembre 2023
Université de Lausanne
Programme et inscriptions :


Vers une égalité de genre dans le numérique ?


END