Challenges and results of aiding in the construction of a Feminist AI Research Network[1][*]

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Abstract

Artificial intelligent systems have more frequently become involved assisting persons with their everyday life activities. However, if these systems are not designed properly, there are certain risks that need to be addressed in order to prevent negative effects of the application of this technology. These risks include managing biases in terms of gender, race and group stereotypes associated with potential end users. The f<a+i>r - Feminist AI Network, was created in order to develop new approaches on how AI data, algorithms, models, and systems can positively impact gender justice, quality of life, and social inclusion. This paper focuses on summarizing some of the most important challenges and results derived from the participation of the Costa Rica Institute of Technology (TEC) as a fund management partner in f<a+i>r.

Keywords

Feminist, network, artificial intelligence, technology, research, equality, inclusion.

1. Introduction

Nowadays, existing Artificial Intelligence (AI) and algorithmic decision-making systems worldwide are not free of gender, racial, and intersectional biases at its core of operation. Addressing this embedded bias is crucial to unlock AI's potential for positive social impact. For example, voice assistants are often configured with female voices by default, face or image recognition systems may reflect societal stereotypes based on skin tones, and hiring algorithms can be trained on historical data with gender disparities. These biases can infiltrate AI systems throughout their development lifecycle, from data acquisition to deployment, resulting in unequal and discriminatory impacts on specific populations [1].

Therefore, it is necessary to take firm actions to prevent systems with these flaws from further evolving in this direction, amplifying its undesirable discriminating consequences for certain groups of people.

As a result, the f<a+i>r – Feminist AI Research Network, was created to develop new approaches on how AI and Automated Decision Making (ADM) data, algorithms, models, and systems can positively impact social and gender justice, quality of life, and social inclusion [2]. Feminist AI aims to make AI and emerging technologies more effective through the application of inclusion and equality principles at its core.

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This alliance was created with the vision of a world where women and disempowered communities are equal partners in decision making, design and development of AI tools.

In this context, this paper focuses on summarizing some of the most important challenges and results derived from the participation of the Costa Rica Institute of Technology (TEC) as a fund management partner in this feminist AI research network [3]. The rest of this paper is organized as follows. Section 2 provides a general description of the general structure and main results of the f<a+i>r project. Section 3 focuses on the role of TEC as manager of the funds dedicated to the support the operation of the network activities. Section 4 addresses the main challenges and opportunities that were identified during the development of the project. Finally, Section 5 outlines some conclusions and future work from which other related initiatives can benefit.

2. The f<a+i>r project

The f<a+i>r network aims to develop and implement feminist AI systems that foster equality and inclusion, moving from research and community-driven prototyping to real-world pilots. [2] In summary, the f<a+i>r network focuses on the following main objectives:

1. Build a body of quality research across international regions that creates multiple pathways to pro-social feminist AI and ADM and uses human rights and design justice principles.
2. Foster new forms of multidisciplinary AI thinking and teamwork in order to catalyze knowledge creation.
3. Incubate and grow a global south network of feminist scholars and multidisciplinary experts to stimulate collaboration and extend the knowledge in the field.

The project methodology regarding research and capacity building was based on the following principles:

- From theory to action: the methodology moves beyond identifying "why" and "what" issues exist in AI/ADM, and focuses on "how" to create concrete solutions. This involves developing new AI/ADM tools, policies, and systems designed to promote social and gender justice, improve quality of life, and rectify past exclusions.
- Design justice and collaboration: the most promising research ideas will be prototyped and validated using design justice principles involving affected communities, academics, activists, and technologists in the process, ensuring solutions are equitable and responsive to real-world needs.
- Pilot and scale: successful prototypes will be piloted in partnership with public and private sector entities, aiming to actively innovate and promote equity principles.
- Capacity building and regional focus: the methodology emphasizes strengthening regional actors, building multidisciplinary teams, and fostering a deeper understanding of each region's specific needs to leverage collective learning and strengthen the development of "Feminist AI" within the global south.

Furthermore, a "paper → prototype → pilot" methodology was followed. This approach prioritized multidisciplinary collaboration, direct community input, and regional specificity, enabling the development of algorithms and systems aimed at overcoming barriers to women's participation and equality in the global south. Each stage took 6 months and they are briefly described next:

- Paper. Teams created scientific papers that outlined their project proposals based on community need with the idea of advancing past the literature review stage, and qualify for prototyping.
- Prototype. This phase involved intense user and community conversations to initially create paper prototypes, in order to translate feminist AI research into real-world

applications. This phase also created multi-sector partnerships, and expanded the research network, in preparation for the pilot phase.

-   Pilot. In the pilot phase, research grantees received support to develop deployment strategies, build sustainable partnerships, and actively demonstrate the real-world potential of their Feminist AI concepts. This pilot phase emphasized collaborations with universities and government to ensure the project's long-term growth and impact.

2.1.   Administrative Structure

The <A+> **A**lliance is a global feminist coalition of technologists, activists, and academics, founded in 2019 to revolutionize AI and Automated Decision-Making by centering the global south and feminist principles. Its mission is to develop pro-social, gender-transformative technologies that promote equality and inclusivity.

In 2020, with support from the International Development Research Centre (IDRC, with head office in Canada), they launched the Feminist AI Research Network (f<a+i>r>). During 4 years from 2021 to 2024, Women at the Table (global civil society organization based in Geneva, Switzerland) and Tecnológico de Costa Rica led the alliance, focusing on multilateral advocacy, notably through the UN's Generation Equality Forum and the Commission on the Status of Women - CSW Expert Group on Technology and Innovation. The f<a+i>r> network also provided grants to cultivate feminist AI research and collaboration in the global south.

The alliance operated through decentralized regional hubs: Tecnológico Monterrey (Latin America & Caribbean), Chulalongkorn University (Southeast Asia), and the American University in Cairo (Middle East & North Africa). These hubs served as vital connectors, promoting feminist AI concepts, building multidisciplinary teams, and addressing regional needs. They facilitated knowledge sharing and nurtured the growth of Feminist AI in their respective areas (see Figure 1).

The hub leadership held weekly coordination meetings to strengthen global and regional networks, enhance community engagement, foster collaborations, and provide mentorship through the research-to-pilot process. These meetings facilitated knowledge exchange, iterative development, and global collaboration on feminist AI.
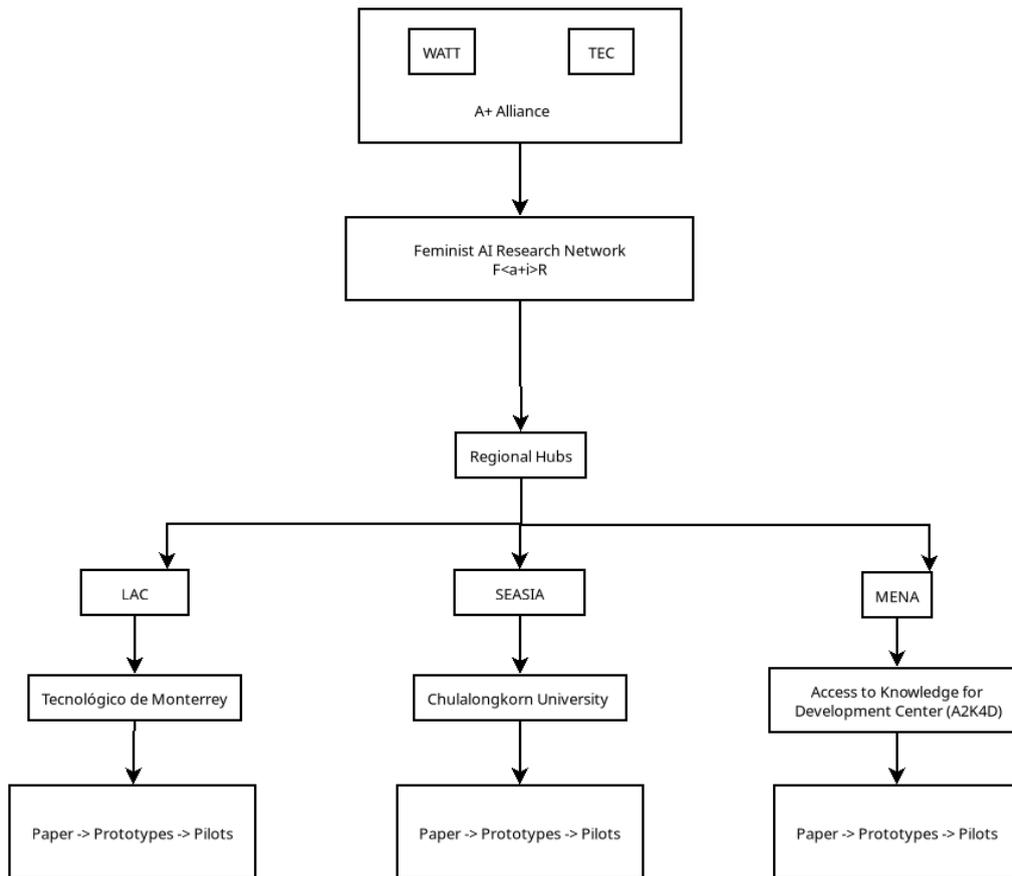
Figure 1: Internal structure of the project.

2.2. General Project Results

The main outputs of the project include:

- Published papers: a list of 25+ published papers was achieved during the project span. Papers were published in different places including peer-reviewed journals, conference proceedings, and repositories such as Feminist AI Pub Pub (https://feministai.pubpub.org/). See for instance [4], [5], [6], [7], [8].
- Outreach activities: a long list of specific activities including workshops, web summits, webinars, expert group meetings and roundtables were organized either in person or online. The activities focused on diverse subjects related to f<a+i>r, such as: AI and equality, technology and innovation for gender equality, ethical technology, feminist foreign policies, AI for international development, among many others (see [9], [10], [11]).
- Case studies booklet. A booklet was produced with material including each team's self-evaluation of their research process, multidisciplinary work and methodology, as well as successes and lessons learned [2], [12].
- AI & Equality Toolbox: a project partially funded by f<a+i>r, which hosts a community of students, academics, data scientists and AI practitioners who believe in the responsibility of technology creators to prioritize human rights principles (https://aiequalitytoolbox.com/community/).

Due to the massive amount of activities and results produced by the f<a+i>r network we will focus only on activities under direct responsibility of the Costa Rican Institute of Technology team. For

further information about the results of the network please check the references cited above or the final technical report available at the IDRC Digital Library[3].

3. Organization for Managing Funds

As part of the A+ Alliance the responsibility of our institution (Costa Rica Institute of Technology) was in charge of managing the funds of the project. This alliance coordinated the project Feminist AI Research f<A+i>r: Incubating Feminist AI: From Paper to Prototype to Pilot.

The governance of the project included the A+ alliance and three partners identified as project hubs in different regions of the planet. Chulalongkorn University in Thailand (SEASIA Hub), Jordan Open Source Initiative en Jordania, later changed to the Access to Knowledge for Development Center (MENA Hub), and the Tecnológico de Monterrey en Latinoamérica (LAT Hub).

Decisions on activities, procedures and budget were taken on weekly meetings of the A+ Alliance with the hub leaders. Agreements on budget lines and execution were passed to TEC Costa Rica for execution and in case of being needed communication with IDRC was established.

As part of the A+ Alliance, the participation of TEC Costa Rica consisted primarily of managing funds and working as liaison between IDRC and the A+ Alliance and Hubs administration. Other tasks included technical advisory on some of the projects.

Within our institution, the project changed the team in charge at the end of the second year. Namely, during the first two years, the team consisted of three people that after the second year were replaced mostly due to political changes of the institution and personal decisions. For the final year a new project leader assumed the project and the team was expanded to guarantee a successful final stage of the project.

The team of the second year consisted of Financial support & liaison, Administrative support & liaison with FUNDATEC (a foundation associated with the university), the vice-rector office for research and extension, a project leader, A+ Alliance liaison & technical support, a scientific advisor, and the FUNDATEC auditor. Other parties involved were the University Rector (contract signature) and Costa Rican Technological Foundation (funds transfers and auditing).

The second-year team consisted of financial support and liaison, administrative support and liaison with FUNDATEC (a foundation associated with the university), the vice-rector's office for research and extension, a project leader, A+ alliance liaison and technical support, a scientific advisor, the University Rector and liaison with the rector during the first stage of the project, and the FUNDATEC auditor. Other parties involved were the University Rector (contract signature) and the Costa Rica Technological Foundation (funds transfers and auditing).

3.1. The project from funds perspective

An initial budget was created at the beginning of the project officially approved by IDRC. This budget was established using Costa Rican currency due to IDRC requirements (this later complicated the fund management quite a bit). Budget execution and changes in budget lines were

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[3] https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/6dbd23a2-1d21-45bb-b7af-2a3f6f816bcf/content

managed in weekly meetings of the A+ Alliances and hub coordinators. The budget lines changes and funds execution were reviewed and approved through a financial report submitted at the end of every year of the project to IDRC. This submission and approval process took about 3 months and after the approval and advancement of the funds for the next year were transferred in Canadian dollars (CAD).

The budget consisted of three major components: A+ Alliance operation, hubs administration operation, and Research. Payments for the A+ Alliance and hubs administrators were made yearly as an advance payment. The research projects (papers, pilots, and prototypes) had independent schedules requiring tracking the completion of the projects, review of deliverables, and payment.

In the first two years, research projects were approved by a scientific committee, whereas in the last year this was done by the coordination committee. After the approval of a given project we began to formalize project contracts. Local legislation required that the contracts were established in Spanish, and a copy of the contract in English was provided to project teams to facilitate the signature process. Each team provided contact information, project signatory person, usually the institution leader, and finally bank transfer information.

When the contracts were received back, they were sent to the Rector of the university for signature. Finally, the information for the initial bank transfer was sent by our FUNDATEC liaison to FUNDATEC to transfer the initial 50% of the funds. The final 50% of the funds were transferred after the finalization of the projects: at this point we checked the completion of the deliverables with technical support. The recommendation of the technical support was passed to evaluation and approval of the project leader who authorized the final release of the funds, which should be coordinated with FUNDATEC.

4. Challenges and Opportunities

This section addresses the main challenges and opportunities identified during the course of the project.

4.1. Main challenges

As with any project, multiple challenges arose and were dealt with. In the following sections we'll describe the main challenges encountered.

4.1.1 Changes in the work team

From the administration point of view, the project went through two stages marked by the change of the team in charge. The change took place at the end of the second year of the project and was mainly due to personal and professional decisions by team members.

One of the main challenges of the project was the sudden and frequent changes in the authorities of the university, which changed even three times in a period of two years. The first change occurred when the rector and two vice-rector resigned, an interim team assumed the leadership for a six month period and then elections took place changing the full team in charge of the university management. This delayed internal administrative procedures such as the replacement of team participants, which required approval of the Vice-rector of research and extension office.

4.1.2 Exchange rates

The first team submitted the financial report of the second year and committed to get it approved. This approval took far longer than expected due a change in IDRC grant manager and exchange rate variations that proved to be a real complication during all the project, start to finish.

As the initial budget was made using Costa Rican currency (CRC), IDRC funds were transferred in Canadian Dollars (CAD), but most of the transfers were made using US Dollars (USD). The Costa Rican budget team was executed in CRC.

During the first year, the team used a fixed exchange rate in order to guarantee numbers match the initial budget and to simplify calculations on payments. This ad-hoc strategy also proved to be a complication further down the project execution, since it required to make and remake multiple times the financial reports following IDRC's indications, delaying the advancement of money needed to continue on schedule. For the second year the grant manager required the exchange rate to be fixed to the day of each advancement transfer, linking transactions to advancements, and for the final financial report it was required to use the exchange rate of the day in which the transaction was made. This represented a significant effort that required to adjust all the transactions of the three year duration of the project.

4.1.3 Administrative delays

Being the ones in charge with managing the budgets, a delay in the administrative procedures or approval of financial reports would cause further delays for other partners. Legal and financial reasons do not help the expected execution of the project by the other parties, who were very clear about the disruption these delays were causing.

As mentioned before, we managed payments for all 3 hubs, namely LAC, MENA and SEASIA and the other partner of the A+Alliance located in Sweden, which involved coordinating communications and payment deadlines in 4 different time zones. This was a bit challenging because according to the contracts, specific timeframes (10 days) were set to comply with the payments after finishing the projects, but the back and forth of emails sometimes took two or three additional days.

4.1.4 Contracts language

Another issue arose when establishing contracts, as some institutions asked for contracts in their own languages, which was impossible due to Costa Rican legislation. This issue delayed contract signature and of course the beginning of the corresponding project, a particularly significant problem in the last year of the project that did not allow for flexible deadlines as the grant agency required all activities finished before the deadline of the project. Furthermore, in some cases, some projects were not able to receive funds directly due to international restrictions, specially to the MENA region. International restrictions did not apply to the project per se, rather national legislation or policies restricted researchers of the MENA hub to participate in the network.

4.1.5 Auditor and funding previsions

Regarding specific issues of year three, at the end of the project an auditor was assigned to the project by FUNDATEC. This assignment proved to be a great help in organizing and understanding the complexities of the project, and especially in the preparation of the final financial report. Also, IDRC grant officer let us know that the final 15% track of the project budget was going to be paid after the approval of the final financial report. Most of the payments of the project were made in advance, so no preparations were made to cover this final 15%. This required additional procedures and paperwork to secure additional funding to cover that 15% by means of a loan, that was not considered in the initial budget or as part of the strategic planification of the project.

4.1.6 Outreach and promotion

Finally, there were no planifications to promote and socialize results of the project at the local level within our institution during the first two years of the project. A special assignment was made to a local journalist to prepare a media package to correct this situation but a better coverage would have been ideal. A local journalist received a specific assignment to develop a media package aimed at rectifying this issue, although more comprehensive coverage would have been preferable.

4.2. Main lessons learned

After the end of the project valuable lessons were learned. Here we mention some of the most relevant ones.

Early involvement of an auditor is essential to establish accounting practices that allow the generation of financial reports in an easy and timely manner. The initial absence of the auditor led to the establishment of ad-hoc ways to manage expenses that ended increasing the workload and general overhead causing unforeseen delays.

The design of a clear communication and dissemination strategy for the project at an institutional level is really important, as it enables better relations within the institutions and may end up facilitating administrative procedures. The global communication plan worked well overall, but the use of only English limited its reach and effectiveness locally.

The effective exchange of knowledge and skills across local teams requires thorough preparation and readiness. In academia, three years is a long commitment and personal priorities may change or job opportunities may arise suddenly for some if not most of the team members. It is crucial to set up a suitable infrastructure for teamwork support including management of: data, procedures, legal records and general archival of information (meeting, agreements, etc). It is advisable to plan for possible exits of one or more members of the team and not to rely on collective knowledge when managing funds for very large projects.

In a global project it is necessary to consider time in the schedule for administrative delays due to time zone differences which may seem negligible but in the end they add up to sensible delays. Also under the same category of administrative delays, it would be beneficial to somehow allocate time to consider political changes within institutions, since for instance, in our case we passed through three authorities changes, which inevitably causes delays since new persons are adapting to their new roles.

Finally, it is recommended to include in the strategic planning a budget reserve to be used when waiting for financial reports to get approval. These reserves should be at least 10% of the total amount of the budget.

5.   Conclusions and Future Work

A project of large size such as f<A+i>r requires a team consisting of multiple professionals with experience and time, which is not always possible. If the team is small or without much experience, we summarize our conclusions and recommendations next:

- Prepare for team members leaving the project, even when you don't foresee the possibility of change in the near future. This preparation must include extra-documentation and establishing mechanisms for redundant information knowledge and skills within the team. Do not trust the collective memory of the group, especially if there are multiple teams in different countries.
- Secure an administrative assistant for the project, which will work as a liaison with university authorities, bureaucratic procedures and logistics. Normally, academics dislike

bureaucracy, and someone who manages this part of the project is essential to avoid burnout and reduce the risk of team members leaving the project abruptly.

- Have a financial advisor, professional accountant or auditor involved early in the project and manage financial information in a detailed manner with an specially designed format for the project: do not rely only on the report templates provided by the funding agency. This will allow the team to respond quickly to changes in the presentation of the financial information required by the funding agencies grant managers. This internal format should be required to use by all parties involved in the project including your direct partners. We insist in not letting the financial information be available only in the financial reports or as an endless list of uncategorized financial transactions, especially if the team members change, this will reduce the amount of work needed for team member transitions.
- Work with your funding agency to ensure that financial information will be managed with a minimal set of different currencies, especially in this kind of international projects where a unique currency is recommended for all parties involved.
- Risk management should be a priority for the project leader and administrative staff of the project. Some of the most important elements to consider are: administrative delays in fund transfers that will affect all other teams, and securing additional funding at the end of the project to be able to execute funds that the funding agency will transfer only after the approval of the final report.
- Finally, prepare to make noise. A communication strategy is essential and must be part of the planning. For this project a global communication strategy was established at the beginning of the project, nonetheless every partner should have in place a local communication strategy within their own institutions and country. This has multiple advantages as it will make the members of the team well known within the institution facilitating administrative procedures and future projects.

f<A+i>r was a beautiful project with amazing results. The interactions between hub leaders, A+ Alliance partners, researchers and other people involved in the project did not only work towards the creation of a Feminist AI but also towards the enrichment of all the team members and organizations.

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Declaration on Generative AI

During the preparation of this work, the authors used Google Gemini and Grammarly for grammar and spelling check. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.

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