Examining the Initial Experiences of Researchers When Articulating Broader Impact

Abstract

By mandating a broader impact statement with every submission for this year's conference, the program chairs at the conference highlighted ethics as a crucial component of AI research. Building on precedents from other fields and a growing awareness within the community, this paper seeks to explore how individual researchers responded to this new requirement. This exploration includes their opinions, their experiences during the drafting process, and their reflections after their papers were accepted. We present survey results and key considerations to inform the next iteration of the broader impact requirement, should it continue to be mandated for future conferences.

1 Introduction

There is a growing number of unethical uses of technology. To counter this trend, some proposals suggest limiting investment or procurement without impact assessment, or even calling for outright bans. Other proposals aim to instill ethical practices earlier in the research stage, before technology transfers into products. Conferences that are typically technical have begun to host workshops on social impact issues and, in some instances, have announced more interdisciplinary subject areas.

The most significant change may be the requirement for a statement of broader impact for all submissions. Unlike workshops and interdisciplinary tracks, which might be viewed as more specific, this requirement affects every submission, of which there are over 9000 this year. While broader impact statements themselves are not new to the wider research community, they are new to this specific community. This paper seeks to explore how individual researchers responded to the new requirement, including their perspectives, their experiences and process in drafting the statements, and their subsequent thoughts after paper acceptances.

This research was initiated through internal discussion at our organization, which then became part of a broader public conversation. To collect perspectives from researchers, both within and beyond our organization, we developed an online public survey. The findings from this survey help to inform considerations for designing the next iteration of the broader impact requirement, should it remain a requirement for future conferences. While it is recognized that researchers are not the only intended audience for these statements, and that others also have responsibilities in ethical research and technology development, researchers represent a critical mass to mobilize in this effort. Understanding the researchers' experience and process is essential not only to the design of the requirement, but also to advancing ethical research practices in general.

2 Survey Method

The study employed an exploratory mixed-methods survey with both open and closed-ended questions. The survey was split into two sections, one for researchers who submitted to the conference, and another for those who did not. The survey was anonymous, and no demographic information was collected. The survey was distributed online via research community channels and on social media. The goals were to understand how researchers considered the implications of their research, how

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they defined their impact statements, and to understand their opinions on this new submission requirement. Survey questions focused on their approach to writing the statement, encountered challenges, the perceived influence of the statement on the overall submission, and their views on the new requirement.

3 Survey Results

A total of 50 participants responded to the survey, with the majority identifying as academics (72 percent) and industry researchers (23.5 percent). There was a balanced breakdown by career stage, with graduate students making up the largest group of respondents (33 percent). Among the group that submitted, the majority identified their subject areas as deep learning and theory. However, among researchers who did not submit, deep learning and social aspects of machine learning were the primary subject areas. The survey population was not compared to the overall population, though this could be an area for future study. Our questions focused on the process and challenges in completing the submission requirement, the perceived impact of the requirement on paper acceptances, and researchers' views on the requirement.

3.1 Process and Challenges

When asked about their approach to the broader impact statements, 83.8 percent of respondents indicated that they completed this part with their co-authors, without external help. The rest of the participants used other approaches such as accepting support or reaching out for help. A large majority spent less than 2 hours on the statement, and almost half mentioned it was not challenging to prepare. There were differing trends for what could make it difficult. Some viewed their theoretical work as too distant from practical applications, making the exercise speculative. Others perceived the requirement as a "bureaucratic constraint". Researchers at different stages of their career found the exercise more or less challenging, but their professional domain did not appear to affect their experienced difficulty with the exercise.

3.2 Impact on Submission

Although it was clarified that submissions would not be rejected solely on the basis of the broader impact statement, the survey explored the researcher's perspectives on this. For researchers who submitted, over 75 percent believed the statements were not taken into consideration, yet almost 90 percent thought it was unclear how reviewers would evaluate the statements. Even with an unclear evaluation process, when asked how confident they were that their statement was adequately addressing the requirement, 43.2 percent stated that they were either confident or very confident. Time spent did not seem to have an impact, since most of the respondents who spent less than an hour also received acceptances. Those who sought external help appeared to have a lower ratio of rejections, but our sample size may be too small to draw conclusive results.

3.3 Framing

The survey explored researchers' views on the requirement and its framing. Our results indicated that the community was divided on how to frame the requirement; 56 percent did not agree that broader impact was the right way to frame the requirement, while 44 percent did. This split was similar when compared to subject area, submitters vs. non-submitters, and academia vs. industry. Postdoctoral/early-career and mid-career respondents were more supportive of the requirement framing than students and senior researchers. There seems to be a general feeling that assessing broader impact is important, but uncertainty regarding who should do it and how. Some respondents described the requirement as "too broad" or said they did not feel "qualified to address the broader impact of their work." Some who supported the requirement found the thought process to be valuable and that it "forces researchers to reflect on the impact of their research".

4 Integrating Feedback into Next Iteration of Broader Impact

The survey results inform future iterations of the broader impact requirement. When asked what could have helped them most, 92 percent of respondents indicated that examples of statements

would be most helpful. There will be an increasing number of examples to draw from in future years. Guidelines were the second most popular request, regarding when a statement might be applicable or how to formulate one. This section proposes how to integrate respondent feedback into future iterations: rethinking the requirement design and framing, developing greater capacity and confidence among researchers, and reflecting the shared responsibility of ethical research and technology development.

4.1 Requirement Design

If the goal is to develop ethical research practices, there may be other approaches to achieve this goal. While written statements make sense given the paper-based nature of submissions, survey respondents indicated a mix of nonchalance, outright farce, or perceived burden. These attitudes may have a counterproductive effect on an ethical research goal. We encourage program chairs to consider mechanisms to limit that effect (e.g., an incentive for "best" broader impact statements). Such mechanisms are important not only to manage negative effects but also to encourage researchers who found the exercise valuable.

4.2 Capacity Building

Given that many respondents felt they were not qualified to address the broader impact of their work, workshops may help build capacity over time, and provide a space for researchers to examine their work with a more diverse group of researchers. Discussions could help develop capacity and confidence, and surface overlooked impacts. Interdisciplinary collaborations could also introduce new guidelines or methodologies such as the theory of change or consequence scanning.

4.3 Shared Responsibility

Recognizing how different systems and social contexts interact would increase the quality of the discussion on broader impact, and develop a sense of shared responsibility for ethical research and technology development. Researchers are a critical mass, but others such as conference organizers, institutions, funders, and users also have roles and responsibilities. To address concerns around burden and expertise, the assessment of broader impact could be more of a multi-stakeholder exercise.

5 Conclusion

This paper and its underlying survey investigated how researchers approached the broader impact statement and surfaced considerations to better design this requirement in future years. While the survey represented a small sample of the community, its results demonstrate a division regarding how the requirement is framed. Initiating a conversation about broader impact is itself a step towards establishing norms and best practices for ethical research. We encourage further work to monitor the evolution of researcher's perspectives, not only at top conferences, but also at-large.

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7 Supplementary Material

The survey questions and the responses received are available for further investigation and use. The survey remains open to responses. At the time of writing, we had 50 responses which were used for the analysis in this paper.