Responsibly Training Foundation Models: Actualizing Ethical Principles for Curating Large-Scale Training Datasets in the Era of Massive AI Models

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Abstract

AI technologies have become ubiquitous, influencing domains from healthcare to finance and permeating our daily lives. Concerns about the values underlying the creation and use of datasets to develop AI technologies are growing. Current dataset practices often disregard critical ethical issues, despite the fact that data represents and impacts real people. While progress has been made in establishing best practices for curating smaller datasets in a more ethical fashion, the unprecedented scale of training data in the era foundation models presents unique hurdles for which AI researchers and practitioners must now face. This workshop aims to unite interdisciplinary researchers and practitioners in an effort to identify the challenges unique to curating datasets for large-scale foundation models—and then begin to ideate best practices for tackling those challenges. Drawing from CSCW's tradition of interdisciplinary exchange, our aim is to cultivate a diverse community of researchers and practitioners interested in defining the future of ethical responsibility in the *composition*, *process*, and *release* of large-scale datasets for foundation model training. We will disseminate the outcomes of this workshop to the HCI community and beyond by developing a conceptual framework of both the challenges and potential solutions associated specifically with curating datasets for foundation models.

CCS Concepts

• **Computing methodologies → Artificial intelligence**; • **Human-centered computing → Human computer interaction (HCI)**; • **Social and professional topics → Socio-technical systems**.

Keywords

Fairness, ethics, responsible AI, foundation models, generative AI, datasets, machine learning, responsible artificial intelligence, human-centric artificial intelligence, algorithmic bias, values in design, work practice

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1 Introduction

AI is increasingly integrated into various practical domains. Its versatility is evident in its use across a range of domains, from healthcare [19, 22] to financial services [20, 56], playing a pivotal role in our daily lives. This versatility has never been more apparent than with the proliferation of *foundation models*, large-scale models trained on a broad and enormous array of data with the goal of being applied downstream to a wide variety of tasks [17].

There have been widespread concerns regarding the datasets used to develop these AI systems [11, 13, 18, 58, 68]. In particular, concerns about AI datasets encompass issues related to the *composition* of data in the dataset [11, 13, 18, 24, 24, 35, 42, 68, 96], the *process* of collecting and labeling it [5, 6, 11, 25, 40, 41, 47, 60, 71, 72, 75], and the *release* of the data for broader use [9, 31, 77]. Nonetheless, current practices in dataset curation for AI often prioritize dataset size and utility, overlooking critical issues like fairness, privacy, and sustainability—despite the fact that "most data represent or impact people" [98]. As datasets continue to scale in the era of foundation models, attending to the ethical implications surrounding the compositions, processes, and release of massive datasets becomes uniquely challenging.

In this workshop, we aim to: (1) define the ethical principles that should apply to the composition, process, and release of large-scale human-centric[1] training datasets; (2) address the challenges that stand in the way of enacting ethical principles given the size and technical needs of foundation models, specifically; and (3) ideate opportunities for overcoming those challenges to define best practices for curating large-scale training datasets responsibly and imagine potential solutions such as tooling (e.g. [36, 54]), policies (e.g., [1, 65]), and frameworks (e.g., [34, 48]).

With the continuous growth in interest in the societal implications of foundation models within the HCI community broadly (e.g., [21, 53, 85]) and CSCW specifically (e.g., [7, 50, 55]), we believe this workshop will garner substantial interest among CSCW participants and, as a result, garner engaged, diverse, and fruitful insights and future collaborations. Given the interdisciplinary nature of the CSCW community, we believe that CSCW is the best venue to kick off this workshop series as the development and release of foundation models continues to rapidly grow, largely unchecked.

2 Ethical Principles for Large-Scale Dataset Curation

As AI has become globally ubiquitous, so too have the harms caused by AI deployments [32, 33, 45, 74, 87]. As a reaction to these harms, numerous scholars have sought to define *ethical principles* aimed at guiding AI's development and deployment. For example, the ethical principle of "beneficence" is focused on providing benefit to others [23]. Yet the beliefs underlying the concept of ethical principles are vast, difficult to define, and often inconsistent [34, 62, 95], leading some scholars to besmirch the idea of AI ethics altogether [38, 73, 81]. Largely, the root of the issue with AI ethics is the gap between principle and action [63], especially given that a single ethical principle may result in numerous outcomes in practice [15]. Many practitioners trying to enact ethical principles are unsure how to proceed, given the different priorities of individual actors and larger organizations [2, 44, 49]. How to enforce responsibility for enacting ethics is an open challenge.

In particular, ethical principles are often most impactful when constrained to specific model tasks (e.g., [90, 93]) or data types (e.g., [16, 59]). However, in the case of foundation models, the data collected is so vast and broad that it is intentionally not constrained to any specific task or type. While we agree with prior work that defining ethical principles and responsibly putting them into action is difficult, the curation of large-scale datasets for training foundation models is only increasing. To guide specific practices for diminishing the harms of foundation model datasets, it is necessary to define what those harms are and what principles should guide mitigating them downstream. Given the vast array of possible principles, we plan to scope workshop discussions to the five broad principles Jobin et al. found underlying the institutional documentation of AI ethics across the globe: transparency, justice and fairness, non-maleficence, responsibility, and privacy [51].

Workshop Objective 1: Define the underlying qualities associated with five ethical principles (transparency, justice and fairness, non-maleficence, responsibility, and privacy) by which large-scale dataset curation should be guided.

3 Challenges to Ethical Large-Scale Dataset Curation

Responsible dataset curation is not simple or straightforward. Even in instances where researchers have attempted to collect fair or otherwise ethical datasets, they have been found to incidentally violate the expectations of other researchers or the public [30, 91, 97]. Existing datasets have violated data subject consent [5, 11, 71, 77], infringed on copyright [28, 52, 76], exploited data workers [8, 37, 89], contained poor demographic distribution [14, 43, 94] and offensive image labels [10, 12, 84], and accidentally included illegal content [83]. These concerns span different stages of the dataset lifecycle, including their composition, the processes underlying their creation, and their release for academic and commercial uses.

Yet collecting datasets responsibly is extremely challenging, even when those datasets are relatively small in scale. Recent work from Zhao et al. uncovered extensive challenges that dataset curators face when trying to enact ethics throughout the dataset curation lifecycle [95]. The kinds of challenges which exist when creating fair evaluation datasets may be much more complex for large-scale training datasets—or even entirely different.

Take ImageNet, once the standard for computer vision (CV) model training, which has around 14 million images [27]. Now, ImageNet is considered too small for training foundation models. Datasets like LAION-5B, with its over five billion images, have become the new standard [78]. How would the challenges associated with a lack of resources impact approaches to dataset ethics for five billion human images? Using the ethical principles for large-scale datasets fleshed out by workshop participants (Workshop Objective 1), we then plan to discuss the challenges to achieving those principles given the massive scope and scale of large-scale datasets for training foundation models.

Workshop Objective 2: Identify the challenges specific to curating ethical large-scale training datasets.

4 Opportunities for Responsible Large-Scale Dataset Curation

While there are certain to be outstanding and thorny challenges to responsibly curating large-scale datasets that adhere to ethical principles, it is still necessary to attempt to overcome them in

[1] Data that centers human faces, bodies, and cultural concepts [77].

our shared goal to create ethical foundation models downstream. Already, scholars have improved numerous suggestions for positively improving dataset qualities like increasing data diversity [64, 67], obtaining data subject consent [57, 61, 88], providing fair wages to data workers [3, 29, 80], limiting dataset use [70], engaging stakeholders in data taxonomy design [66, 69, 79], and creating transparent documentation [26, 46, 92]. Andrews et al. provided a comprehensive framework of ethical considerations for responsible dataset curation throughout the development lifecycle, illuminating idealistic data curation approaches for smaller scale evaluation datasets [4].

Yet, many of these ethical approaches may need to be reconsidered and redefined for the scale of foundation model data. There may also be need for entirely new approaches which have yet to be considered, especially around issues like data instability and recency, transparency tools for parsing massive unstructured datasets, and environmental stability for both collection and use [39, 82, 86].

Having identified the challenges (Workshop Objective 2) to responsibly enacting the ethical principles (Workshop Objective 3), the final aim of the workshop is to begin initial ideation as an interdisciplinary community of research and practice to *actualizing ethics responsibly* for large-scale dataset curation. For each challenge associated with dataset composition, process, and release, workshop participants will ideate approaches to responsibly actualizing ethical principles to overcoming them.

Workshop Objective 3: Ideate potential approaches for responsibly curating large-scale training datasets that adhere to ethical principles.

5 Workshop Goals

As every industry scrambles to build and adopt foundation models, it is imperative that we as a community identify and define ethical standards to uphold when curating the massive datasets underlying such models. This workshop aims to gather interdisciplinary researchers and practitioners who are interested in addressing the challenges associated with creating, managing, and using data responsibly for training large-scale foundation models, like those underlying ChatGPT, BERT, and DALL-E. Given CSCW's's rich history of interdisciplinary discourse, we plan to engage participants from a diverse range of communities and backgrounds and encourage the sharing of ideas across topics and domains. The workshop will gather interdisciplinary researchers and practitioners interest in the use of human-centric data for training foundation models, including generative AI, LLMs, and other large-scale AI tasks.

In this workshop, we aim to address: (1) the qualities underlying *ethical principles* as they apply to large-scale datasets used to train foundation models; (2) the *challenges* specifically associated with responsibly curating datasets for large-scale foundation models that adhere to desired ethical principles; and (3) the potential *opportunities* for mitigating those challenges and promoting responsible dataset curation in an era of large-scale foundation model training. We aim to address key questions during the workshop, such as:

- How do **existing challenges** to enacting ethics via responsible data curation apply to large-scale foundation models?
- What are the **unique challenges** specific to actualizing ethics when curating datasets for large-scale foundation models?
- What are the **cultural, technical, social, legal, and environmental factors** that should be prioritized when defining ethical principles for dataset curation?
- What **existing ethical principles and approaches** to responsible data curation can be applied to large-scale foundation model data?
- How can we **assess the effectiveness** of ethical principles for large-scale foundation model training datasets?
- What **challenges exist for different parts of the dataset curation lifecycle**?
- What **opportunities are specific to the different parts of the dataset curation lifecycle**?
- How might we **develop regulation** specific to upholding ethical principles in training data for large-scale foundation models?
- How do we **assign responsibility** for large-scale ethical dataset curation?
- What practices and conditions should be implemented to ensure **ethical labor standards in data collection and annotation** processes?
- How can we **encourage the adoption** of ethical dataset practices within academic and industry settings?
- What role can **interdisciplinary and cross-domain collaboration** play in developing ethical principles and enacting responsible dataset curation?
- What strategies can be employed to **engage with underrepresented communities** and involve them in the dataset creation process?
- What are the considerations and potential **consequences of specific dataset collection methodologies**?
- What **tools, policies, and processes** can enable more responsible large-scale training dataset curation?

6 Logistics

Pre-workshop plans: Our pre-workshop plans will focus on: (1) *advertising* the workshop so that we receive strong and diverse submissions; (2) *building community* among workshop participants; and (3) *knowledge sharing* prior to the workshop.

7 Workshop Day

The workshop will be organized as a one-day hybrid event tentatively taking place from 9:00 to 18:00 in Bergen, Norway (see Table 1 for the proposed schedule). We expect an attendance of around 15-35 total participants. In case of larger numbers, the lightning talk sessions will be organized in breakout groups that will be created based on themes from the position papers. However, we plan to cap attendance to 35 to facilitate more engaged conversations in the limited time of the workshop.

For the group sessions aimed at attending to the three workshop goals, we will establish groups that will persist throughout the workshop to ensure continuity of topic understanding for the sake of framework writing and group sharing at the end of the workshop day. Groups will be formed around the three areas of ethical

Start	End	Duration	Session
			Before the Workshop
-	-	2 weeks	Participants introduce themselves in the Discord / Slack
			Day of the Workshop (9:00–16:00 JST)
9:00	9:30	30 min	Welcome and Opening Remarks
9:30	10:30	60 min	Participant Lightning Talks
10:30	11:00	30 min	Coffee Break #1
11:30	12:30	60 min	Group Session # 1: Ethical Principles for Dataset Curation
12:30	1:30	60 min	Lunch Break
13:30	14:30	60 min	Group Session #2: Challenges to Ethical Dataset Curation
14:30	14:45	15 min	Coffee Break #2
14:45	15:45	60 min	Group Session #3: Opportunities for Ethical Dataset Curation
15:45	16:00	15 min	Coffee Break #3
16:00	16:45	45 min	Group Session #4: Framework Writing
16:45	17:45	60 min	Group Share
17:45	18:00	15 min	Closing and final remarks
			Optional: Post-Workshop Dinner

Table 1: Tentative schedule of workshop activities, including asynchronous activities prior to the workshop day.

concern highlighted in the Introduction above: (1) composition; (2) process; and (3) release. Each group session will correspond to each workshop objective introduced in Sections 2, 3, and 4 above, respectively. The culmination of each group activity will be clustered in Group Session #4, where groups will be asked to design a draft framework for their respective area of ethical concern. Groups will then be asked to share high-level takeaways of these preliminary frameworks.

8 Post-workshop

After the conclusion of the workshop, the organizers will provide a brief summary of the workshop on the website[2] and Discord channel or Slack space. Position papers will also be published on the website and as collated proceedings on ArXiv, with author permission. Beyond the inaugural workshop at CSCW 2025, we plan to host a series of workshops focused on ideating and refining best practices for ethically curating large-scale training datasets with different scholarly communities, including: at machine learning conferences (NeurIPS), design conferences (DIS), and fairness conferences (FAccT and/or AIES). We plan to use the Discord or Slack for future workshops in the workshop series. This will facilitate continued participation and community building as the workshop series develops across conference communities. We will then collate and analyze our longitudinal takeaways in the form of an article or white paper so that the broader community can learn from the shared knowledge of the workshop community. Interested workshop participants will be invited to contribute to this article or white paper. We also hope to publish a special issue of a journal focused on ethical principles, challenges, and opportunities for dataset curation. This special issue will serve as a platform for workshop participants to either expand upon their position papers, refining them for potential publication after the workshop, or to submit any other pertinent work they may have developed.

[2]https://responsiblefmdata.github.io/

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