



Unmaking AI: Engaging Critically and Creatively with Generative AI

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Abstract

Generative AI (GenAI) offers powerful possibilities but also introduces significant socio-cultural, political, and environmental issues. It is therefore imperative that researchers and practitioners, responsible for shaping these technologies, develop the critical capabilities necessary to engage with GenAI systems in creative, responsible, and ethical ways. Recent discourse on ‘unmaking’ indicates that this can be a useful paradigm for us to better understand GenAI. In this workshop we provide a framework for “Unmaking AI” — introducing participants to different GenAI models; real-world examples of researchers using these models in practice; and conduct hands-on unmaking AI activities, using bespoke design cards, created for experimentation and reflection. The workshop requires no prior participant knowledge or engagement with GenAI systems. Through this workshop we aim to bring together a community of researchers and practitioners interested in shaping discourse about critically and creatively unmaking AI and collaboratively develop tools, resources, and readings to support them.

CCS Concepts

• **Computing methodologies** → Artificial intelligence; • **Human-centred computing** → Interaction design; Interaction design process and methods.

Keywords

Generative AI, Unmaking, Design Cards

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1 Introduction

1.1 Beyond the Black Box

Generative AI (GenAI) models are rapidly being rolled out, disrupting industries and playing key roles in high stakes areas. In design, they can be used to rapidly prototype [29]; in medicine, they synthesise and identify tumours [45]; in research, they can generate datasets [1] or be used as analytic tools [14, 26]. Yet if these powerful models have potential, they also raise new problems, harvesting artistic work without consent [46], internalising toxic values [8], and reproducing stereotypes [33], amongst others.

Given these stakes, we urgently need to develop a critical understanding of the operations, limitations, and societal impacts of these models. Yet models and AI more broadly are often pervaded by an array of myths and misconceptions [15]. The public’s grasp of their underlying archives, logics, and limitations remains limited [44]. One reason may be novelty, with many models (DALL-E, ChatGPT, CoPilot, Stable Diffusion, Firefly) only released over the last two to three years. Another may be opacity, i.e., with closed source models, parameters and data are off-limits and how models make decisions is unclear [16]. Even with open source models, the pipeline of investments, data capture, training and refinement can be held in confidence by “steering” corporations or be public but technically dense.

There is rising interest in understanding how we might dismantle, and unmake [41] these AI black boxes in recent academic discourse — with increasing scholarship on creating understandable and Explainable AI (XAI); introduction of the ACM Conference

on Fairness, Accountability, and Transparency (ACM FAccT); as well as discourse on Human-Centred AI and interaction design, within HCI, design, and technology research communities such as CHI, DIS, and AAAI. The rapid advancement in GenAI presents an urgent challenge: how can we devise methods and tools to better understand these opaque systems?

1.2 Beyond “Bias”

While critical AI research has moved towards opening these black boxes in recent years, much of this work has focused on “bias” narrowly understood. Numerous studies have highlighted bias across gender, race, class, disability and other categories [2, 6, 9], which translate into social harms as models are adopted and employed. In response, some models now include self-evaluations of bias in various forms or disclaimers around their use (e.g., Google Gemini, Open AI’s ChatGPT etc.). Yet this framing and its responses, often result in merely tweaking parameters or “bubble gum and tape” makeshift fixes. By themselves, metrics-based evaluations [32] reinforce, rather than remediate the structural conditions under which technologies like LLMs are developed and deployed. In this framing, there is no space for more expansive or systemic critiques around business models, human labour, data harvesting, or the place of generative systems and automated decision-making in society.

In this sense, we are interested in specificity rather than bias, in understanding the social, cultural, and ethical transformations that generative AI models usher in. Here we take inspiration from Benjamin [7], who recognised that mechanisation was not just a technical but a cultural transformation. He carefully analysed these technologies and their implications, demonstrating how the new ability to copy and circulate images disconnected them from their original context and even the very notion of “originality.” As he and others [12] have argued, each new wave of technical innovation needs to be accompanied by a corresponding societal adjustment that critically grasps how these technologies reshape everyday life.

Generative AI models have a particular logic; they apprehend the world in particular ways, and they produce outputs with particular strengths and weaknesses [42]. In many cases, these models derive their power precisely because they appear “natural” or “common-sense” [39]. We’re interested in troubling this normalcy, in critically reflecting on these taken-for-granted qualities. Models are artefacts driven by data curation, training setups, developer cultures, business models—a result of decisions and forces that can be identified and understood. In doing so, we seek to anchor model bias, harm, and risk within a more generalised analytical framework.

1.3 Towards Unmaking AI

How can we open up these black boxes and engage more substantively? Researchers have responded by offering insights into models’ values and decision-making through tools like model cards [38] and growing fields like explainable AI [20, 37]. However, such frameworks generally require insider knowledge of system development, command over sophisticated data analysis techniques, or complex computational methods, imposing a high barrier to entry. We seek to circumvent these barriers, by focusing on simple, yet effective interventions and scaffolding techniques, that facilitate comprehensive and critical understandings of AI models.

In this workshop, we introduce a framework for “Unmaking AI” and a card-based toolkit for engaging creatively and critically with generative AI. Unmaking is a growing area of interest in HCI, offering a counter-practice to traditional emphasis on making (See: e.g., [27, 49, 52, 56–58]). Unmaking can involve dismantling or taking apart objects [43, 51, 63], structures [50], or forms of knowledge [47], bringing into focus issues such as sustainability, material deterioration, repair, and the urgency of addressing environmental crises. But unmaking goes beyond physical “things”, offering conceptual lenses to critically unpack new technologies and examine issues of equity, social justice, and design practices [52].

Our Unmaking AI [41] framework is comprised of four distinct components. *Unmaking the Ecosystem* analyses the values, structures, and incentives surrounding the model’s production. *Unmaking the Context* explores how users, communities, and specific problem settings shape AI usage. *Unmaking the Data* analyses the images and text the model draws upon, with their attendant particularities and biases. And *Unmaking the Output* analyses the model’s generative results, revealing its logics through prompting, reflection, and iteration.

The Unmaking AI work slots into recent scholarship on frameworks for critically considering technical systems in educational contexts, examining for example their democratic potential [59, 60] or ethical usage [3], without requiring participants to have extensive technical knowledge [5]. This work also adds to the increasing discourse related to “unmaking” within HCI scholarship. The *Unmaking AI framework* [41] provides guidance on how we might approach dismantling the “digital” materiality [24] of these black box, generative AI systems. The aim is to better understand the foundational building blocks, materials, and mechanisms used by generative AI systems — an act Wiberg [62] characterises as returning to the foundations in the sciences of the artificial [55] — returning to the core of the field. This “return to the materials” [55] also facilitates material “back-talk” [54] necessary for users to engage in a critical, reflexive, and thoughtful dialogue with these systems, to create meaningful outcomes.

1.4 AI and Card-based Design Tools

To operationalise this framework in an accessible and practical way, we have developed a card-based design tool. This approach builds on prior work where frameworks have been adapted into design tools (e.g., Hornecker adapting the *Tangible Interaction Framework* [22] into a card-based brainstorming game to support creative idea exploration [21]; and Li et al. adapting the *Long Distance Relationship Framework* [30] into a collaborative, card-based design tool, the *Flexi Card Game* [31]). Design cards are a very popular and widely accepted format for design tools and methods (See: [23, 48]), with multiple applications and contexts of use, including analysis [11, 35, 53], and in collaborative activities [10, 19, 21, 25].

There is also an increasing body of work that also focuses on card-based tools and generative AI. Khan et al. developed the *AI Sub Zero Bias* cards [28] to offer provocative prompts designed to help users reflexively consider how “bias” manifests in interactions with LLM outputs [26]. Ghajargar & Bardzell [18] introduce a series of concept cards aimed to aid design researchers’ creative and critical exploration of AI as a tangible and understandable space.

Table 1: Workshop Activity Schedule

<i>Activity</i>	<i>Description</i>
Introduction (30 mins)	A critical introduction to AI using the “Unmaking AI” framework (unmaking the ecosystem, unmaking the context, unmaking the data, and unmaking the output), ensuring all participants on the same page
Inspiration Showcase (30 mins)	Lightning talks from researchers and practitioners who describe how they have used AI tools in creative and critical ways in real-world projects
	Tea Break (15 mins)
How ‘Not’ to use GenAI (20 mins)	Introducing a negatively framed case study of a fictional researcher who curates an exhibition on the “Australian Identity” using GenAI in problematic ways. Workshop participants are asked to identify salient issues, and explore mitigation strategies
Introduction to the Unmaking AI cards (20 mins)	The session introduces the Unmaking AI card-based tool, its aims, and how to use it. Participant groups are stepped through two cards. “Research Suggests”, to ask an LLM a controversial question from your discipline; and “Portrait Gallery” to prompt a model to generate an “accurate” portrait of your research subjects using key adjectives.
Creative Exploration with Unmaking AI cards (45 mins)	Participants are invited to engage with the cards to conduct an exploratory activity using GenAI tools (e.g., Open AI’s ChatGPT, EasyDiffusion, Adobe Firefly, Meta’s Llama, Google Gemini, Canva’s Magic Design™). They then carry out a discussion within the group based on the Reflection and Consideration cards.
Plenary (25 mins)	Each participant group reports back insights, findings, and any challenges in a synthesis discussion. This feedback will be used to further extend the card-based tool, and develop resources (tools, readings, techniques) to support HCI practitioners to use AI in creative and critical ways

Amershi et al. at Microsoft introduced the Human-AI Interaction ethics guidelines [4] and presented them as design cards organised across interaction applications [36]. And Corisdale et al. developed *DeckFlow*, a digital card game, designed as a no-code interface for iteratively exploring and experimenting with multimodal generative workflows for disparate models [13]. This growing body of work and multitude of applications illustrates how design cards can be useful in exploring how we interact with generative AI tools.

For the purpose of this workshop we have developed the *Unmaking AI* cards [40] consisting of three distinct card types. *Action* cards provide concrete activities for participants. *Reflection* cards provide provocations and key questions for discussion. And *Consideration* cards aim to catalyse debate and further inquiry for the users. For instance, participants may pose a thorny question to an LLM, reflect on disparities between this result and their expectation, and consider the implications of such claims on their discipline and society more broadly. Cards can be chosen and combined in many different ways, forming a flexible and enjoyable way to develop critical technical literacy.

Together, the *Unmaking AI framework* and complimentary *Unmaking AI* structure activities and cultivate technical literacy. They “unmake” not only in the sense of unpacking the black box, but also unravelling the misconceptions that continue to surround AI technologies. Both the framework and cards leverage a highly interdisciplinary approach, drawing on diverse activities to embrace the “methodological and interpretative pollution” [61] needed to engage with the diverse facets of generative AI. AI models are products made in a particular ecosystem composed of investors, business objectives, organisational incentives, and so on [34]; these models are also underpinned by the datasets—in the case of image models, embedded representations of image-text relations that deeply shapes their biases and functionality [8]; and they produce output which

can be investigated through prompting and iterating, revealing certain tendencies and logics [17]. An adequate portrait of generative AI can only be attained by integrating these disparate perspectives — and constant, adversarial, and critical scrutiny through engagement with them by human users. Ultimately, the central aim of this workshop is to explore how we might collaboratively and critically unmake generative AI tools through creative explorations that are scaffolded by card-based design tools and designerly approaches of inquiry.

2 Workshop Program

The workshop program is detailed in Table 1 below.

The workshop details and schedule can be found here: <https://www.lukemunn.com/workshop/>

3 Organizers

This workshop has been collaboratively organised by scholars and researchers from a diverse set of disciplines, who have extensively engaged with AI technologies in creative and critical ways in the last several years.

Luke Munn is a Research Fellow in Digital Cultures & Societies at the University of Queensland in Meanjin/Brisbane. Munn combines digital methods and critical insights from across the humanities to explore the social, political, and environmental implications of contemporary technologies. This work has been published in prestigious journals such as *Big Data & Society* as well as popular forums like *The Guardian* and *The Washington Post*. He has written six books, including *Unmaking the Algorithm* (2018), *Automation is a Myth* (2022), and *Technical Territories* (2023). Recent research has pursued creative and critical engagements with AI technologies, including “The uselessness of AI ethics” in *AI and Ethics* and “Truth Machines” in *AI and Society*.

Awais Hameed Khan is a Research Fellow at the University of Queensland node of the ARC Centre of Excellence for Automated Decision-Making & Society (ADM+S). Awais is a design researcher and practitioner, who is interested in the democratisation of technology through participatory and human-centred approaches. His research focuses on designing participatory design methods and practices, social and tangible computing, speculative design, and new and emergent technologies. He has published and presented research on these topics in leading international HCI and design research venues and co-organised workshops at CHI, AAAI, DRS, and ICDT/EDBT conferences.

Danula Hettiachchi is a Lecturer at the School of Computing Technologies, RMIT University and a researcher interested in Crowdsourcing, Social Computing, Responsible AI and Human-Computer Interaction. Danula is an Associate Investigator at the ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S). He has served as a program committee member in a range of premier conferences including as an Associate Chair at CHI. Danula has co-organised several academic workshops at CHI and CSCW.

Samar Sabie is Assistant Professor at the Institute of Communication, Culture, Information and Technology at the University of Toronto where she directs the Open Design Colaboratory. Her research examines how the diversity of urban communities requires re-examining our normative design methods, and how work in other fields such as STS, political philosophy, and sociology could help us re-operationalize these design methods in more just and inclusive ways. She is a co-editor of the ACM TOCHI special issue *Unmaking & HCI: Techniques, Technologies, Materials, and Philosophies Beyond Making* (2024) and was a co-organizer of the 2022 and 2024 CHI workshops on unmaking.

Lida Ghahremanlou is an Affiliate of the ARC Centre of Excellence for Automated Decision-Making & Society (ADM+S) from Microsoft. With over 10 years of experience in academia and industry, Lida is an AI Researcher and Data Scientist Lead at Microsoft, where she utilises LLMs for data analytics of employee experience surveys. She has a PhD in Computer Science from RMIT University, and is a member of the RMIT Industry Advisory Board for the Center for Industrial AI Research and Innovation. Lida also collaborates with Western Sydney University as a Research Partner Investigator.

Saarim Saghir works in Strategy at Google, where he focuses on solving complex business problems using technology and the latest AI breakthroughs. Saarim has over 10+ years of experience working in strategy, across technology, consulting, development, and consumer goods sectors. He has an insatiable curiosity for exploring novel ways in which technology can be used to support users. He is captivated by the quest to make using technology feel like an effortless extension of our human selves.

Nicholas Lambourne is a senior machine learning engineer at Canva, where he serves as part of their ML Platform group. His role encompasses the facilitation of prototype machine learning applications by more than 100 machine learning professionals around the globe, whose work reaches more than 150 million customers worldwide. He holds degrees in finance, psychology, and computer science from The University of Queensland where he also previously served as senior research assistant in the Human

Centred Computing lab, working on automatic speech recognition applications. Nicholas' past research has also included work at the intersection of automata theory and quantum computing.

Liam Magee is a Professor of Education Policy, Organization and Leadership, University of Illinois, Urbana-Champaign and an Associate Investigator in ADM+S. Encompassing digital, media and urban studies, his research examines how digital technologies reshape conditions of knowledge, social relations and cultural form. His books include *Towards a Semantic Web: Connecting Knowledge in Academic Research and Interwoven Cities*. He has co-authored articles for *Futures*, *Big Data & Society*, and *Geoforum*. His current research investigates how AI works across different scales of human subjectivity, social stratification and geopolitical organisation. He has contributed to studies of intersectional bias and cultural understandings of AI, and techniques for analysing AI via interviews, media analysis and code experiments.

4 Workshop Outcomes

This workshop aims to catalyse a community of researchers and practitioners who are interested in understanding and shaping discourse about critically engaging with and dismantling the black box that is generative AI. Building on this workshop, we plan to develop a set of resources focusing on *Unmaking AI*. This includes: developing an assortment of Unmaking AI design tools; a reading library/reference list; an Unmaking AI playbook that contains guard rails, principles and helpful techniques, as well as a catalogue of use cases that can inform real-world contexts and be instructive for both practitioners and researchers. These resources aim to provide scaffolding and support HCI researchers and practitioners to critically, reflexively and creatively engage with generative AI tools so we can better shape them.

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