EMANCIPATORY INFORMATION RETRIEVAL

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ABSTRACT

Our world today is facing a confluence of several mutually reinforcing crises each of which intersects with concerns of social justice and emancipation. This paper is a provocation for the role of computer-mediated information access in our emancipatory struggles. We define emancipatory information retrieval as the study and development of information access methods that challenge various forms of human oppression, and situates its activities within broader collective emancipatory praxis. The term "emancipatory" here signifies the moral concerns of universal humanization of all peoples and the elimination of oppression to create the conditions under which we can collectively flourish. To develop an emancipatory research agenda for information retrieval (IR), in this paper we speculate about the practices that the community can adopt, enumerate some of the projects that the field should undertake, and discuss provocations to spark new ideas and directions for research. We challenge the field of IR research to embrace humanistic values and commit to universal emancipation and social justice. We also invite scholars from fields such as human-computer interaction, information sciences, media studies, design, science and technology studies, social and political sciences, philosophy, law, environmental sciences, public health, educational sciences, as well as legal and policy experts, civil rights advocates, social justice activists and movement organizers, and artists to join us in realizing this transformation. In this process, we must both imagine post-oppressive worlds, and reimagine the role of IR in that world and in the journey that leads us there.

1 Introduction

"The old world is dying, and the new world struggles to be born: now is the time of monsters."

– Antonio Gramsci

Our world in crises. Our world today is facing a confluence of several mutually reinforcing crises pushing us universally, but notably not uniformly, towards precarity. The recent COVID-19 pandemic did not only result in over seven million deaths [90] and disrupt everyday lives globally; it also laid bare and further reinscribed existing political, economic, and social hierarchies that are saliently colonial and racialized [104], gendered [29, 87], casteist [98], and ableist [86]. Likewise, the dangers of recent and impending climate catastrophes as well as the discourse around mitigative actions are inextricably intertwined with concerns of racial [106, 120, 121, 141], gender [1, 54], and disability [38] justice. Increasing global wealth and income inequality [31] both mirrors historical dimensions of marginalization and is contributing to erosion of democracies worldwide [110]. Globally, we are still reckoning with the ongoing legacies of settler-colonialism [144] and present-day neocolonialism [102], recontesting women's rights to bodily autonomy [17], and witnessing growing assaults on transgender people's right to exist [50, 68].

The range of crises we face in the twenty-first century requires us to reckon with multiple intersecting and co-constituting processes of hierarchical organization of our society and as a consequence with the systemic dehumanization, marginalization, and oppression of those designated to its bottom rung. Therefore, any attempt at addressing the crises of our times must begin with recommitment to the principles of social justice, universal humanization of all peoples, and emancipatory struggles against social, economic, and political oppression. This paper is a provocation for the role of computer-mediated information access in these struggles. Our aim is to challenge the field of information retrieval (IR) research to reimagine itself as what it can (or, ought to) be if grounded in humanistic values and

committed to universal emancipation and social justice, and to encourage the community to explicitly articulate and make conscious choices about the values and incentives that shapes our field of computing. This is also an invitation to scholars from fields such as human-computer interaction (HCI), information sciences, media studies, design, science and technology studies (STS), social and political sciences, philosophy, law, environmental sciences, public health, educational sciences, as well as legal and policy experts, civil rights advocates, social justice activists and movement organizers, and artists to join us to collectively reimagine radically new sociotechnical futures and realize desired transformations.

The information reaches out.   IR, the field of computing that is concerned with the design and study of information access systems, such as web search and recommender systems, has its roots in library science and linguistics [65]. Early IR research was primarily concerned with the design of effective indexing mechanisms that enable fast pattern-based lookup of text from large corpora. The modern-day successors of these systems, however, go far beyond serving the function of simple lookup. Modern search systems observe and model collective behaviors of how their users interact with retrieved information to infer intent behind user queries, and to predict users' future needs and actions. Some of these systems may proactively surface new information and breaking news, recommend commercial products and services, and even suggest activities and actions for the user to undertake. Conversational systems, such ChatGPT,[1] Microsoft Copilot,[2] and Google Gemini[3], may be entrusted to summarize retrieved information in response to users' search queries, effectively shifting the burden of assessing the relevance and trustworthiness of retrieved information and their contextual interpretation from the user to the statistical models underlying these systems. These systems affect what information and perspectives receive exposure which shapes consumer behavior, political discourse, and culture [56, 57, 60], and directly influence material outcomes for people [40, 117].

Today's search and recommender systems are, therefore, much more than passive lookup tools. These systems have become embedded in our online social discourse, both shaping and being shaped by our values, cultural identities, sociopolitical beliefs, and shared understanding of our environment and ourselves. We could choose to see this transformation of information access systems from passive lookup tools to agents of influence as the information reaching out and permeating every aspect of our individual and social lives—akin to how Grudin [58] described the transition of computers from applications in narrow specialist domains to their present-day ubiquitous presence in our lives as "the computer reaches out".

Importantly, these systems and platforms may privilege certain perspectives and ways of knowing over others that entrench social hierarchies and intensify oppression. Or, alternatively they could serve to raise up marginalized voices and challenge the status quo. Access to information is critical to collective sense-making of our place and relationships in this world. Therefore, it is unsurprising that throughout history authoritarian forces have tried to control what information is disseminated and how. In both historical and ongoing conflicts, we can observe these struggles for control over both traditional media (*e.g.*, newspapers, radio, and television) and online media (*i.e.*, social media and other online information access platforms). For the oppressed, they serve as medium for building shared understanding and solidarity necessary for social movements and collective action. For the oppressor, they represent sites to apply force to censor information and perspectives and manipulate public opinion. Information access platforms, therefore, represent sites of conflict between exploitation and liberation. *How should we then reflect on and reconcile the implications of IR research and development on our communities and our collective liberation?* In this paper, we assert that the field of IR would benefit from critically reflecting on how our work relates to current sociopolitical orders and our possible sociotechnical futures, and argues for reimagining IR research grounded explicitly in the adoption of humanistic and emancipatory values and aspirations.

2   What is emancipatory IR?

We define *emancipatory IR* as the study and development of information access methods that challenge all forms of human oppression, and situates its activities within broader collective emancipatory praxis. The term "emancipatory" here signifies the moral concerns—central to this field of study—of universal humanization of all peoples and the elimination of oppression to create the conditions under which we can collectively flourish. Examples of structural oppression in this context include colonialism, racism, patriarchy, casteism, transphobia, religious persecution, and ableism.

This framing recognizes information and access to information both as profoundly political, and enacts research and development activities—such as, formalization, theorization, design, experimentation, publishing, open sourc-

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[1]https://chat.openai.com/

[2]https://copilot.microsoft.com/

[3]https://gemini.google.com/

ing, deployment, platform governance, and community building—in service of universal struggles against all forms of structural oppression. It rejects the techno-deterministic premise that there is a single pre-determined path forward for information access technology development, and challenges the community to employ reflexivity to uncover the deeply embedded values, incentives, and sociotechnical imaginaries that shape the field of IR. It recognizes the agency of the field and its contributing members in shaping the world, while respecting that the challenges and necessary interventions are both fundamentally sociotechnical in nature. Therefore, the theories and practices of this field must be co-developed with cross-disciplinary collaboration including with scholars from HCI, design, information sciences, media studies, STS, social and political sciences, philosophy, law, environmental sciences, public health, educational sciences, as well as with legal and policy experts, civil rights advocates, social justice activists and movement organizers, and artists, among others.

Emancipatory IR challenges us to employ technological research and development in service of dismantling hierarchies of oppression and challenge power. It discourages non-performative academic gaze, and urges this research to be situated in movement building, and calls for recognizing the role of movement building practices within this research. It encourages us to prioritize praxis—*i.e.*, research activities and reflections directed at structural change—over proxy metrics of success—*e.g.*, state-of-the-art performances and leaderboard rankings that do not translate to scientific or social progress). And above all, it challenges the field to move beyond the restrictive view of IR research that emphasizes algorithmic advances as measurable on shared benchmarks and leaderboards to a more expansive view of IR research situated in a project of affecting social good and universal emancipation.

Emancipation research in other fields.   To develop an emancipatory IR research agenda, we can take inspiration from other scholarly fields that have incorporated humanistic values and emancipatory aspirations. Young et al. [149] surveyed the body of emancipation research in information science, and identified four components of emancipation prevalent in the literature: Agency (*i.e.*, freedom to act), dialogue (*i.e.*, freedom to express), inclusion (*i.e.*, freedom to belong), and rationality (*i.e.*, freedom to think). Wright [145] defines emancipatory social science as an intellectual enterprise seeking to "generate scientific knowledge relevant to the collective project of challenging various forms of human oppression". Wright outlines a framework that enumerates three specific tasks for the field: (i) Systematic diagnosis and critique of the world as it exists, (ii) envisioning viable alternatives, and (iii) elaborating a theory of social transformation. According to Wright, emancipatory social science is "a theory of a journey from the present to a possible future: the diagnosis and critique of society tells us why we want to leave the world in which we live; the theory of alternatives tells us where we want to go; and the theory of transformation tells us how to get from here to there – how to make viable alternatives, achievable".

In HCI, Bardzell and Bardzell [10, 11] discuss emancipation under the heading of humanistic HCI, which they define as research and practices in the field that deploy humanistic epistemologies and methodologies. They note that emancipatory HCI is "a fundamental goal of virtually all humanistic HCI". Related, several strands of HCI research incorporate anti-oppressive and emancipatory [119], feminist [12, 13, 14, 15, 16], queer [80, 84], postcolonial and decolonial [6, 44, 69, 70, 123], anti-racist [4], anti-casteist [128, 129], anti-ableist [122, 142], post-capitalistic [25, 49], and anarchist [77, 85] epistemologies, theories and practices.

Similarly, in the fields of machine learning (ML) and artificial intelligence (AI) there are several works that call for anti-oppressive and emancipatory [75, 114], anti-fascist [91], decolonial [5, 97], anti-casteist [74, 113], and abolitionist [9, 19, 46, 143] perspectives and design interventions. In data science, D'ignazio and Klein [43] and Guyan [59] discuss how feminist and queer epistemologies can inform the field, and Monroe-White [99] adopted Wright's framework [145] to propose an emancipatory agenda for data science to mitigate the harms to marginalized populations.

3   Practices, projects, and provocations

To develop an emancipatory research agenda for IR, we speculate about the practices that the community can adopt, enumerate some of the projects that the field should undertake, and discuss provocations to spark new ideas and directions for research. However, the list of practices, projects, and provocations discussed here are neither immutable nor complete. It is ultimately the responsibility of the community engaged in emancipatory research to regularly reflect on, produce evidence-based critique, challenge, and reshape its agenda to affect tangible progress in our collective struggles against dehumanization, oppression, and marginalization. It may be worth reemphasizing at this stage that due to the saliently sociotechnical nature of the challenges in this area, the practices, projects, and provocations too will rarely reside strictly in the domain of computing and technology and must be informed by perspectives from outside of the field of computer science and the lived experiences of marginalized peoples. We illustrate the practices, projects, and provocations described in this section in Figure 1.

3.1 Practices of emancipatory IR

We adapt Wright's emancipatory social science framework [145] to develop a framework for the practices of emancipatory IR. Like Wright's, our framework consists of diagnosing and critiquing, imagining viable alternative futures, and elaborating our theories of change.

Diagnose and critique. The starting point for emancipatory IR research is identifying the ways in which existing IR methods and systems, the cost of IR research and development, and the arrangements within the IR community may contribute systemic harms to peoples, act contrary to aspirations of social and political justice, and impede emancipatory struggles of the peoples. These harms may include:

- Suppressing voices of the oppressed and marginalized
- Enabling surveillance and public opinion manipulation
- Imposing representational harms through derogatory portrayal, stereotyping, or erasure in presentation of retrieved results
- Imposing allocative harms to groups through under-exposure of their content in retrieved results or under-exposing groups to socioeconomic opportunities
- Exploitation of ecological resources and labor for IR research and development that mirror racial capitalism and coloniality
- Capture of IR research by the military–industrial complex that pushes the field to disproportionately prioritize economic and military interests over concerns of knowledge production, public health education, and information literacy, and produce technologies that serve as tools of oppression (*e.g.*, for surveillance)
- Concentration of extreme power and wealth among few individuals and institutions in ownership of popular information access platforms
- Lack of representation and diversity within the IR community leading to propping up colonial cisheteropatriarchal capitalist values and erasure of feminist, queer, decolonial, anti-racist, anti-casteist, anti-ableist, and abolitionist perspectives

Imagine viable alternative futures. The second practice of emancipatory IR is to imagine and develop desirable, viable, and achievable alternatives to our IR technologies and ways of organizing our communities with the aim of addressing the harms and injustices identified in the diagnosis and critique stage. Mitra [94] argues that the IR community should explicitly articulate the sociotechnical imaginaries [71, 72] that influence the design and development of IR technologies and platforms. He enquires "what would IR systems look like if designed for futures informed by feminist, queer, decolonial, anti-racist, anti-casteist, anti-ableist, and abolitionist thoughts, and if the focus of IR research was not to prop up colonial cisheteropatriarchal capitalist structures but to dismantle them?" This is a call for us to imagine post-oppressive worlds, and the role of IR both in that world and in the journey that leads us there.

We intentionally do not speculate about any specific futures in this paper. To satisfy that ask IR needs spaces and processes for design futuring [52]. The goal of futuring here is not just to envision a plurality of alternative utopian and protopian futures, but also to build shared understanding, aspirations, and commitment towards emancipatory outcomes through that participatory process. After all, the act of exercising one's imagination itself can be liberating, or as Benjamin [20] calls it "an invitation to rid our mental and social structures from the tyranny of dominant imaginaries".

Elaborate theories of change. Our final practice concerns with the development of theories of change [24, 126, 137, 139] that makes explicit how we aim to realize the alternative futures in the face of current realities and how our own work contributes towards those goals. This should be grounded in theories of power and co-developed with cross-disciplinary scholars, legal and policy experts, activists, artists, and others to realize real structural changes. This involves both developing new research agendas as well as experimenting with and realizing new arrangements within the IR community and critically reflecting on our relationships with other institutions (*e.g.*, industry and government). To provide concrete examples, we next discuss potential projects that we believe emancipatory IR should invest in.

3.2 Emancipatory projects in IR

Next, we enumerate some of the potential projects relevant to emancipatory IR. Such examples are useful for readers to get a more concrete sense of the aspirations and type of work relevant to this field, and can also serve as a starting point for developing a more thorough research agenda. Ultimately, the direction and what specific project we invest in must be decided and iterated on over time by those who see themselves as part of this community, which we must ensure includes more than just IR researchers and technologists as we emphasized previously.
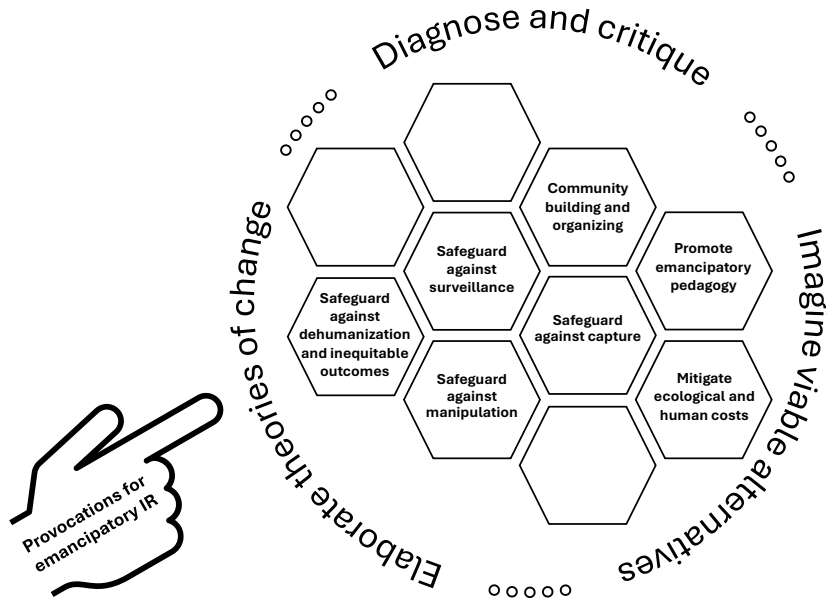
Figure 1: Illustrating the practices, projects, and provocations of emancipatory IR. The hexagons at the center represent several potential projects. The empty hexagons indicate that the set of mentioned projects are not complete, and the community should over time identify new ones and shape existing ones, as appropriate. Surrounding the projects is the framework of practices of emancipatory IR that are relevant to all projects in this area, consisting of (i) diagnose and critique, (ii) imagine viable alternative futures, and (iii) elaborate theories of change. Provocations to spark new ideas and research directions are depicted as a nudging hand.

Safeguard against capture. A central concern of emancipatory IR should be to ensure that our information access platforms cannot be easily captured by few privileged individuals and institutions or authoritarian regimes, and also to ensure that access to information services cannot easily be blocked by authoritarian regimes in times of protests to suppress dissent. These concerns and initiatives are timely in the face of the 2024 edition of the World Economic Forum's Global Risks Report [2] that calls out "technological power concentration" as one of the top global risks for the upcoming decade, and broader growing concerns about the alignment of tech industry with authoritarianism and fascism [45, 53, 76, 81, 130]. In the social media landscape, there have been recent announcements [3, 89] of formation of new non-profit foundations for managing key social media ecosystems and platforms, specifically with the goal to safeguard against billionaires' control over our digital public squares. In IR, there has also been recent investments to create open infrastructures for internet search, such as the Open Web Search project.[4]

While decentralization of IR infrastructure and federation may be critical for protecting against capture, it is also important to acknowledge that in a world shaped by white supremacy, colonialism, patriarchy, cisheteronormativity, neuronormativity, ableism, and casteism as organizing sociopolitical forces, the decentralization of the technological infrastructures in themselves do not constitute sufficient conditions for creating safe and welcoming online spaces for historically marginalized peoples nor to ensure these platforms align with our emancipatory aspirations [66]. Instead, the challenges that we face require both decentralized technology infrastructure, as well as social innovations in the formation of new global governance structures for the ownership, management, and moderation of these platforms to ensure that the voices of the oppressed and marginalized are uplifted, not suppressed.

Safeguard against surveillance. IR applications—such as web search, recommender systems, and targeted digital advertising—have been major drivers of surveillance capitalism [151]. An important commitment IR can make towards anti-oppression is to ensure that the field is neither creating the technologies and infrastructures for surveillance, nor creating additional demands for such infrastructures out of commercial interests. User behavior data have been the "secret" sauce for many successful commercial IR platforms. For example, in search, user interactions with search result pages are continuously logged and modeled at incredible scale to provide better search relevance to customers. It is therefore not surprising that modeling of user clicks [34] and even cursor movements [41] have historically gar-

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[4] https://openwebsearch.eu/

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nered substantial interest in IR research. However, this creates demands for unscrupulous surveillance of users on these platforms. In response, different regulatory safeguards have been proposed, including notably the principles of data minimization defined in Article 5 of the European Union's General Data Protection Regulation (GDPR) [111].

To safeguard against surveillance, the IR community must imagine alternative ways of building its systems that does not necessitate such large-scale data collection to simply make these platforms usable. We must both push the boundaries of effective retrieval methods in the absence of user behavior data *and* develop new protocols for collection, storage, and application of user data that implements stricter safeguards for user privacy and require stricter and more meaningful user consent for access by the platforms. We need to explore both technological innovations (such as, homomorphic encryption) as well policy safeguards and changing social norms around data stewardship and transparency of how institutions collect, store, and use data, and implement concrete safeguards to ensure that authoritarian governments and their institutions cannot get access to this data which may enable harassment and intimidation of activists, journalists, and marginalized populations. Lastly, we should be wary of potential dual-use of IR technologies—such as the impact of improved cross-lingual search on surveillance of foreign individuals, institutions, and governments—and be critical of and refuse funding for such research that comes from governments and security agencies.

Safeguard against manipulation. Misinformation and disinformation pose serious threats to democracies worldwide [47, 82, 83]. The 2024 edition of the World Economic Forum's Global Risks Report [2] ranks misinformation and disinformation as the top global risk for the subsequent two years. A study spanning six years, 26 countries, and several election periods find that political misinformation is particularly salient in current wave of radical right populism and its opposition to liberal democratic values and institutions [127]. Curtailing spread of online misinformation and disinformation that aims to dehumanize immigrants, the colonized, the poor, trans and nonbinary, and racially marginalized peoples, is critical to our social justice efforts and our effort to build solidarity with each other.

Beyond misinformation, we must also pay close attention to new vectors of public manipulation that may become plausible in near future based on our current technological trends. A particularly worrying development in this area is the recent emergence of "persuasive AI" [28, 30, 48, 105]. Mitra et al. [96] warn that the massive trove of detailed data on user behavior and preferences combined with the capabilities of generative AI to produce persuasive language and visualizations could create tools of mass manipulation and pose serious risks to functioning of global democracies. Imagine every time you searched online or accessed information via your digital assistant, the information was presented to you exactly in the form most likely to alter your consumer preferences or political opinions. Or, consider AI-generated digital characters in ads and videos that appropriate marginalized identities to say or act in ways that real members of that community may be strongly opposed to—a new form of "Digital Blackface". Emancipatory IR researchers must engage in evidence-based critique of such technology development and push for policies and community norms that push back against research in support of such applications within the field before more such applications of AI materialize and are normalized.

Safeguard against dehumanization and inequitable outcomes. Emancipatory IR should concern itself with ensuring that IR systems do not lead to representational harms (*e.g.*, denigration, stereotyping, and erasure) of historically marginalized peoples and inequitable outcomes which may further reinscribe historical sociopolitical and economic oppression and exploitation. Over the last several years, there has been several works on fairness in IR. These have typically focused on fairness of quality-of-service—*e.g.*, [92, 93, 101, 147]—and fairness of exposure—*e.g.*, [21, 42, 107, 117, 118, 146, 150]. However, there is less clarity on how much this body of fairness research has practically influenced material changes in popular IR platforms [94]. Fairness research in the emancipatory context must move beyond just formalization and theorization of fairness; it must recognize and be grounded in the understanding of historical injustices and structural violence, and must ensure that this research opposes dehumanization and material inequities in the real world. This includes also contending with the politics of classification [39] and critiquing practices in fairness research, such as in context of gender fairness [109], that may themselves perpetuate further harm.

We must also hold institutions that own and operate IR platforms accountable to measurable equitable and humanistic outcomes. If an institution invests in fairness research but does not operationalize them in their products, then that research only serves to launder institutional reputation and is counter to our real emancipatory goals. To hold institutions accountable, our research agenda should also include challenges of auditing IR platforms and also explore other regulatory, sociopolitical, and technological mechanisms of accountability that are grounded in the recognition of the structural power inequities that make it challenging to do so.

Promote emancipatory pedagogy. Emancipatory IR must abandon any false notions of neutrality between the oppressor and the oppressed, and develop frameworks situated in theories of power to uplift marginalized voices and make spaces for emancipatory pedagogy. It must expressly refuse to serve as a soapbox for the powerful and

wealthy. To make this further challenging, we must do so without concentrating the power to define oppressor-oppressed relations in the hands of platform owners. Can we, for example, learn from Freire's [51] anti-oppressive pedagogy to imagine IR systems that do not merely retrieve but provide spaces for dialogical interactions between information seekers? Can we build communities of experts who can provide context from critical scholarship to inform search results and aid in our collective sense-making and solidarity-building on topics relevant to our emancipatory struggles? What if we go beyond fixing under-representation of marginalized groups in, say, image search results for occupational roles and reclaim those digital spaces as sites of resistance and emancipatory pedagogy [94]?

Emancipatory IR must also critically interrogate the relationship between information access platforms and the publishers and news media. Kim et al. [78] find media indoctrination as one of the strongest predictors of autocratic survival. In light of these dynamics, we must reexamine how platforms can support local newsrooms that often do critical work in reporting on issues relevant to marginalized populations. In this context, support must include both ensuring these publishers get exposure in search results as well as innovations in platform business models that can support local newsrooms financially, such as through revenue sharing.

Visibilize and mitigate ecological and human costs of IR research and development. We must also be concerned of the cost of doing IR research and operating IR platforms. This includes ecological costs [115, 152], such as energy and water consumption and harmful emissions, as well as the appropriation of data labor and impact on the wellbeing of workers. Belkhir and Elmeligi [18] estimate that Information and Communications Technology industry on the whole will account for 14% of global emissions by 2040. In the US, data centers are projected to consume around 6% of the total national electricity by 2026 [61]. Appropriation of data labor includes both uncompensated appropriation of works by writer, artists, and programmers [8, 26, 27, 32, 33, 35, 36, 55, 88, 116, 132, 133, 134, 135, 136] and under-paid crowdwork for data labeling [7, 63, 64, 108, 125, 140, 148]. The latter mirrors historical patterns of global labor exploitation and racial colonial capitalism [22, 37, 62, 79, 100, 103, 124], and have been associated with severe mental health cases among crowdworkers [23, 64]. Other concerns include land use for data centers and how that affects communities living on those lands and indigenous sovereignty [112, 131].

Emancipatory IR must invest in accurate accounting, reporting, and reduction of the ecological and human cost of our research. This includes the cost of training models and experimentation, the cost of human annotations, and the cost of air travel for conference attendance, among others. It includes a commitment towards not pursuing research directions whose cost include accelerating climate change and broader adoption of virtual conferencing to minimize air travel. It also includes the recognition that these costs cannot just be minimized by building more efficient models[5] or automated labeling methods, and that the solution as always is at the intersection of the social, the political, the economic, and the technological.

Community building and organizing. The work of building an emancipatory research agenda must start with building an emancipatory research community. We need to create safe spaces where researchers from the IR community can engage and meaningfully interact with a diverse set of scholars, designers, legal and policy experts, activists, and artists to co-develop an agenda for this field. We must reflect on the current social and organizational arrangements within the field and our relationships with other institutions, such as industry and government. We must take on the difficult challenge of critiquing the funding mechanisms that enable IR research and its role in privileging certain areas of research explorations and technology development that are counter to our emancipatory aspirations and social justice. We must reimagine these arrangements, build counter-structures, and establish new means of funding emancipatory IR research that can sustain itself in the face of attack from the privileged, powerful, and wealthy. We must nurture a culture in our community that recognizes and encourages direct actions to challenge power, such as demonstrating and whistleblowing [67], and create support mechanisms to protect individuals from reprisal from those whose power and visions we want to challenge. We must ensure that our community is inclusive and representative of marginalized peoples and that we view their lived experiences with structural oppression as critical to informing research in our field. And we should view emancipatory IR as situated in broader movement building against marginalization, dehumanization, and oppression.

3.3 Provocations

Emancipatory IR must leverage instruments of provocation to challenge our thinking and help us reimagine radically alternative futures. The inception of emancipatory IR must not be in a vacuum, but must be informed by emancipatory ideologies borne of our historical and ongoing struggles, including feminist, queer, decolonial, anti-racist, anti-casteist, anti-ableist, and abolitionist thoughts. Our challenge is not only to imagine radically new emancipatory futures, but also to put into practice those desired values and build prefigurative counter-structures both in the form of new

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[5]For example, because of Jevons paradox: `https://en.wikipedia.org/wiki/Jevons_paradox`.

technological designs and sociopolitical rearrangements within our communities. The task to change technology is inextricably linked to the task of changing ourselves and our own social arrangements. The practice of reflexivity becomes important in this context to articulate (and critique if necessary) our own values, positionality, and incentives, as well as our relationships with institutions and social structures that we in turn intend to change. It is in this process that we desperately need to engage scholars outside of computing, learn from generations of activists and movement organizers who have been engaged in emancipatory struggles, and let ourselves be influenced by the artists and writers that dare to imagine radically free futures and humanistic social structures.

4 Discussion

4.1 The *emancipatory* in emancipatory IR

The term "emancipation" originally described the abolitionist struggles against slavery, but later came to signify a broader vision of dismantling all forms of oppression. Emancipatory thinking in humanities have manifested in many forms, including Marxism, Critical Theory, feminism, and post-colonialism. Emancipatory IR aims to be informed by and incorporate these different theories and epistemic frameworks in the conception and design of information access methods and systems. For emancipatory IR to be authentically emancipatory, this work must not be simply limited to an intellectual exercise. Our scholarship must be a piece of a broader movement building praxis grounded in ongoing struggles in our world against marginalization, dehumanization, and oppression. Our critiques must be followed by a tangible push for dismantling oppressive structures and building counter-structures in its place. Our theories must be put into practice and tested in the real world, and our success measured in concrete emancipatory outcomes. Access to information is critical to our collective sense-making of our place in this world and our relations with it, and it is exactly why throughout history, from print media to present-day social networks, authoritarian forces have tried to control what and how information is disseminated. Emancipatory IR stands in solidarity with the oppressed and their struggles, and accepts the challenge of building the information infrastructure for resistance.

4.2 The *IR* in emancipatory IR

But what makes emancipatory IR truly *IR*? How are questions of emancipation relevant to this field of computing whose research is typically concerned with questions of ranking, evaluation, efficient system design, language modeling, human information interaction, and other similar topics? To this we respond by challenging the reader to reflect on how each of these important concerns in IR intersect with the exemplar projects we discussed in Section 3.2. What new research questions emerge in context of indexing and ranking when our IR platforms are federated and decentralized? What new research challenges emerge in human information interaction if our goal is to promote emancipatory pedagogy? How do we mitigate the harms from appropriation of data labor that is so very prevalent in our modern-day language modeling approaches? How do we reimagine efficiency and evaluation when our aspirations go beyond fetching information artifacts at lightning speed to encouraging deeper collective understanding and new knowledge production that are key to our social progress? With these questions our aim is to challenge the field to abandon a more restrictive view of what IR research is which may limit itself to algorithmic advances as measurable on shared benchmarks, and adopt a more expansive view of IR that aims to situate information access as a vehicle for social good. These aspirations are also reflected in the recent report on the Fourth Strategic Workshop on Information Retrieval in Lorne (SWIRL 2025) [73] that calls for centering emancipatory values in IR research.

4.3 Where do we begin?

Bootstrapping an emancipatory IR research agenda will be challenging. The process requires existing IR researchers to expand their horizons of concerns and expertise, bring in others from outside of the field experienced in emancipatory struggles, and consider new assemblages of both its technologies and sub-communities. While there may be several potential starting points for this process, we recommend that the work should begin by pulling together a seed community interested in this research direction. Towards that goal, one proposal would be to organize community-building workshops whose structure is informed by the practices, projects, and provocations discussed in Section 3. A sketch of such a workshop may look as follows:

1. A series of talks covering critiques and provocations relevant to emancipatory IR.

2. A design futuring session where participants are encouraged to radically reimagine IR systems and how they should be embedded in our society and our daily lives.

3. Following the futuring exercise, participants sketch out paths to our desired futures and identify concrete challenges and initiatives that the emancipatory IR community should take on. Some of these may align

with the projects enumerated in Section 3.2 or may identify the need for additional projects that we have not considered here.

4. Finally, the participants may discuss funding considerations to sustain our research agenda, as well as steps that we can take to protect our community members from reprisal from whose power our research aims to challenge.

The goal of such workshops would be to build trust, solidarity, and a shared understanding of our aspirations and plans within the seed community. It is also our aim with these workshops to challenge the seemingly unassailable wall of colonial capitalist values that have arrested our present visions of society and technologies. We hope such a workshop can be successful in finding the cracks in the wall through which we can collectively peep out and free ourselves to imagine a plurality of social arrangements that are possible in which we can all flourish free from oppression.

5   Conclusion

The field of IR has undergone seismic shifts over the last decade largely instigated by rapid developments in deep learning [95] and more recently generative AI [138]. Between trying to stay updated in the face of daily firehoses of new AI publications and chasing the coveted badges of "state-of-the-art" it can be easy as an IR researcher to overlook the pressing needs of society and envision only the possibilities as conjured by the latest AI news cycle. If we are to address the multitude of crises facing our world today—spanning the ecological, the social, the political, and the economic spectrums—IR must undergo another seismic shift over the next decade. This piece is a provocation for the IR community to situate itself in the generational emancipatory struggles and stand in resistance to the growing epidemic of authoritarianism and fascism through the practices of making and unmaking of information access technologies. It is also an invitation to scholars from other fields as well as to social movement organizers and artists to join us and be part of this shared struggle. While focused on IR, it is also a challenge to the broader computing and technology community to reimagine our work to not serve the privileged few by further concentrating immense power and wealth, but as a liberatory force that connects us and humanizes us universally. Technology after all *is* a project of world-making. So, what kind of a world are *we* collectively going to build together?

References

[1] Explainer: How gender inequality and climate change are interconnected. *UN Women*, 28, 2022.

[2] World economic forum global risks report 2024, 2024. URL `https://www.weforum.org/publications/global-risks-report-2024/`.

[3] Free our feeds: Save social media from billionaire capture, 2025. URL `https://freeourfeeds.com/`.

[4] V. Abebe, G. Amaryan, M. Beshai, Ilene, A. E. Gurgen, W. Ho, N. R. Hylton, D. Kim, C. Lee, C. Lewandowski, et al. Anti-racist hci: notes on an emerging critical technical practice. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts*, pages 1–12, 2022.

[5] R. Adams. Can artificial intelligence be decolonized? *Interdisciplinary Science Reviews*, 46(1-2):176–197, 2021.

[6] Y. Akama, S. Keen, and P. West. Speculative design and heterogeneity in indigenous nation building. In *Proceedings of the 2016 ACM Conference on Designing Interactive Systems*, pages 895–899, 2016.

[7] M. Altenried. The platform as factory: Crowdwork and the hidden labour behind artificial intelligence. *Capital & Class*, 44(2):145–158, 2020.

[8] G. Appel, J. Neelbauer, and D. A. Schweidel. Generative ai has an intellectual property problem. *Harvard Business Review*, 7, 2023.

[9] C. Barabas. Beyond bias: Re-imagining the terms of" ethical ai" in criminal law. *Geo. JL & Mod. Critical Race Persp.*, 12:83, 2020.

[10] J. Bardzell and S. Bardzell. What is humanistic hci? In *Humanistic HCI*, pages 13–32. Springer, 2015.

[11] J. Bardzell and S. Bardzell. Humanistic hci. *Interactions*, 23(2):20–29, 2016.

[12] S. Bardzell. Feminist hci: taking stock and outlining an agenda for design. In *Proceedings of the SIGCHI conference on human factors in computing systems*, pages 1301–1310, 2010.

[13] S. Bardzell. Utopias of participation: Feminism, design, and the futures. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 25(1):1–24, 2018.

[14] S. Bardzell and J. Bardzell. Towards a feminist hci methodology: social science, feminism, and hci. In *Proceedings of the SIGCHI conference on human factors in computing systems*, pages 675–684, 2011.

[15] S. Bardzell and J. Bardzell. Feminist design in computing. *The Wiley Blackwell Encyclopedia of Gender and Sexuality Studies*, pages 1–7, 2016.

[16] S. Bardzell, E. Churchill, J. Bardzell, J. Forlizzi, R. Grinter, and D. Tatar. Feminism and interaction design. In *CHI'11 Extended Abstracts on Human Factors in Computing Systems*, pages 1–4. 2011.

[17] E. Beck, K. Seelman, M. Charania, S. M. Snyder, and S. Saffan. Reproductive justice, bodily autonomy, and state violence. *Affilia*, page 08861099231225226, 2024.

[18] L. Belkhir and A. Elmeligi. Assessing ict global emissions footprint: Trends to 2040 & recommendations. *Journal of cleaner production*, 177:448–463, 2018.

[19] R. Benjamin. Race after technology: Abolitionist tools for the new jim code. *Social Forces*, 2019.

[20] R. Benjamin. *Imagination: A Manifesto (A Norton Short)*. WW Norton & Company, 2024.

[21] A. J. Biega, K. P. Gummadi, and G. Weikum. Equity of attention: Amortizing individual fairness in rankings. In *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval*, SIGIR '18, pages 405–414, New York, NY, USA, 2018. ACM.

[22] A. Birhane. Algorithmic colonization of africa. *SCRIPTed*, 17:389, 2020.

[23] R. Booth. More than 140 kenya facebook moderators diagnosed with severe ptsd. 2024. URL https://www.theguardian.com/media/2024/dec/18/kenya-facebook-moderators-sue-after-diagnoses-of-severe-ptsd.

[24] P. Brest. The power of theories of change, 2010.

[25] J. Browne and L. Green. The future of work is no work: A call to action for designers in the abolition of work. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts*, pages 1–8, 2022.

[26] K. Burke. 'biggest act of copyright theft in history': thousands of australian books allegedly used to train ai model. *The Guardian*, 2023.

[27] K. Burke. Generative ai is a marvel. is it also built on theft? *The Economist*, 2024.

[28] M. Burtell and T. Woodside. Artificial influence: An analysis of ai-driven persuasion. *arXiv preprint arXiv:2303.08721*, 2023.

[29] L. L. Carli. Women, gender equality and covid-19. *Gender in management: an International Journal*, 35(7/8): 647–655, 2020.

[30] M. Carroll, A. Chan, H. Ashton, and D. Krueger. Characterizing manipulation from ai systems. In *Proceedings of the 3rd ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization*, pages 1–13, 2023.

[31] L. Chancel, T. Piketty, E. Saez, and G. Zucman. *World inequality report 2022*. Harvard University Press, 2022.

[32] K. Chayka. Is a.i. art stealing from artists? *The New Yorker*, 2023.

[33] S. Chesterman. Good models borrow, great models steal: intellectual property rights and generative ai. *Policy and Society*, page puae006, 2024.

[34] A. Chuklin, I. Markov, and M. d. Rijke. Click models for web search. *Synthesis lectures on information concepts, retrieval, and services*, 7(3):1–115, 2015.

[35] W. D. Cohan. Ai is learning from stolen intellectual property. it needs to stop. *The Washington Post*, 2023.

[36] D. Coldewey. Thousands of authors sign letter urging ai makers to stop stealing books. *TechCrunch*, 2023.

[37] N. Couldry and U. A. Mejias. Data colonialism: Rethinking big data's relation to the contemporary subject. *Television & New Media*, 20(4):336–349, 2019.

[38] E. Cram, M. P. Law, and P. C. Pezzullo. Cripping environmental communication: A review of eco-ableism, eco-normativity, and climate justice futurities. *Environmental Communication*, 16(7):851–863, 2022.

[39] K. Crawford. The atlas of ai: Power, politics, and the planetary costs of artificial intelligence, 2021.

[40] A. Datta, M. C. Tschantz, and A. Datta. Automated experiments on ad privacy settings: A tale of opacity, choice, and discrimination. *arXiv preprint arXiv:1408.6491*, 2014.

[41] F. Diaz, R. White, G. Buscher, and D. Liebling. Robust models of mouse movement on dynamic web search results pages. In *Proceedings of the 22nd ACM international conference on Information & Knowledge Management*, pages 1451–1460, 2013.

[42] F. Diaz, B. Mitra, M. D. Ekstrand, A. J. Biega, and B. Carterette. Evaluating stochastic rankings with expected exposure. In *Proc. CIKM*, pages 275–284, 2020.

[43] C. D'ignazio and L. F. Klein. *Data feminism*. MIT press, 2020.

[44] P. Dourish and S. D. Mainwaring. Ubicomp's colonial impulse. In *Proceedings of the 2012 ACM conference on ubiquitous computing*, pages 133–142, 2012.

[45] G. Duran. The tech baron seeking to "ethnically cleanse" san francisco. *The New Republic*, 2024.

[46] C. C. Earl. Towards an abolitionist ai: the role of historically black colleges and universities. *arXiv preprint arXiv:2101.02011*, 2021.

[47] U. Ecker, J. Roozenbeek, S. van der Linden, L. Q. Tay, J. Cook, N. Oreskes, and S. Lewandowsky. Misinformation poses a bigger threat to democracy than you might think. *Nature*, 630(8015):29–32, 2024.

[48] S. El-Sayed, C. Akbulut, A. McCroskery, G. Keeling, Z. Kenton, Z. Jalan, N. Marchal, A. Manzini, T. Shevlane, S. Vallor, et al. A mechanism-based approach to mitigating harms from persuasive generative ai. *arXiv preprint arXiv:2404.15058*, 2024.

[49] T. Feltwell, S. Lawson, E. Encinas, C. Linehan, B. Kirman, D. Maxwell, T. Jenkins, and S. Kuznetsov. " grand visions" for post-capitalist human-computer interaction. In *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems*, pages 1–8, 2018.

[50] H. R. C. Foundation. The epidemic of violence against the transgender and gender non-conforming community in the united states. 2023.

[51] P. Freire. Pedagogy of the oppressed. In *Toward a sociology of education*, pages 374–386. Routledge, 2020.

[52] T. Fry. Design futuring. *University of New South Wales Press, Sydney*, pages 71–77, 2009.

[53] T. Gebru and É. P. Torres. Eugenics and the promise of utopia through artificial general intelligence. *First Monday*, 2023.

[54] G. Gender and C. Alliance. Gender and climate change: A closer look at existing evidence. 2016.

[55] J. Gertner. Wikipedia's moment of truth. *The New York Times Magazine*, 2023.

[56] T. Gillespie. Algorithmically recognizable: Santorum's google problem, and google's santorum problem. In *The Social Power of Algorithms*, pages 63–80. Routledge, 2019.

[57] J. Grimmelmann. The google dilemma. *NYL Sch. L. Rev.*, 53:939, 2008.

[58] J. Grudin. The computer reaches out: The historical continuity of interface design. In *Proceedings of the SIGCHI conference on Human factors in computing systems*, pages 261–268, 1990.

[59] K. Guyan. Queer data. 2022.

[60] B. Hallinan and T. Striphas. Recommended for you: The netflix prize and the production of algorithmic culture. *New media & society*, 18(1):117–137, 2016.

[61] E. Halper. Amid explosive demand, america is running out of power. *The Washington Post*, 2024.

[62] K. Hao. Artificial intelligence is creating a new colonial world order. *MIT Technology Review*, 2022.

[63] K. Hao and A. P. Hernández. How the ai industry profits from catastrophe. *MIT Technology Review*, 2022.

[64] K. Hao and D. Seetharaman. Cleaning up chatgpt takes heavy toll on human workers. *The Wall Street Journal*, 24, 2023.

[65] D. Harman et al. Information retrieval: the early years. *Foundations and Trends® in Information Retrieval*, 13 (5):425–577, 2019.

[66] J. Hendrix and J. Flowers. The whiteness of mastodon. *Tech Policy Press. November*, 23:2022, 2022.

[67] M. Hicks. History in the making: Whistleblowers and big tech. *First Monday*, 2025.

[68] E. Horbury and C. X. Yao. Empire and eugenics: Trans studies in the united kingdom, 2020.

[69] L. Irani, J. Vertesi, P. Dourish, K. Philip, and R. E. Grinter. Postcolonial computing: a lens on design and development. In *Proceedings of the SIGCHI conference on human factors in computing systems*, pages 1311–1320, 2010.

[70] L. C. Irani and M. S. Silberman. Stories we tell about labor: Turkopticon and the trouble with" design". In *Proceedings of the 2016 CHI conference on human factors in computing systems*, pages 4573–4586, 2016.

[71] S. Jasanoff and S.-H. Kim. Containing the atom: Sociotechnical imaginaries and nuclear power in the united states and south korea. *Minerva*, 47:119–146, 2009.

[72] S. Jasanoff and S.-H. Kim. *Dreamscapes of modernity: Sociotechnical imaginaries and the fabrication of power*. University of Chicago Press, 2015.

[73] R. T. Johanne and J. S. Culpepper. Report from the fourth strategic workshop on information retrieval in lorne (swirl 2025). In *ACM SIGIR Forum*, volume 59, page 68, 2025.

[74] S. Kalyanakrishnan, R. A. Panicker, S. Natarajan, and S. Rao. Opportunities and challenges for artificial intelligence in india. In *Proceedings of the 2018 AAAI/ACM conference on AI, Ethics, and Society*, pages 164–170, 2018.

[75] G. C. Kane, A. G. Young, A. Majchrzak, and S. Ransbotham. Avoiding an oppressive future of machine learning: A design theory for emancipatory assistants. *Mis Quarterly*, 45(1):371–396, 2021.

[76] J. C. Kang. The big tech takeover of american politics, 2025. URL https://www.newyorker.com/news/fault-lines/the-big-tech-takeover-of-american-politics.

[77] O. Keyes, J. Hoy, and M. Drouhard. Human-computer insurrection: Notes on an anarchist hci. In *Proceedings of the 2019 CHI conference on human factors in computing systems*, pages 1–13, 2019.

[78] W. Kim, E. Nazrullaeva, A. Neundorf, K. Northmore-Ball, and K. Tertytchnaya. Strategies of political control and regime survival in autocracies. *Available at SSRN*, 2024.

[79] N. Klein. Ai machines aren't 'hallucinating'. but their makers are. *The Guardian*, 2023.

[80] M. Klipphahn-Karge, A.-K. Koster, and S. M. dos Santos Bruss. Introduction: Queer ai. In *Queer Reflections on AI*, pages 1–19. Routledge, 2024.

[81] A. LaFrance. The rise of techno-authoritarianism. *The Atlantic*, 2024.

[82] S. Lewandowsky. Truth and democracy in an era of misinformation, 2024.

[83] S. Lewandowsky, U. K. Ecker, J. Cook, S. Van Der Linden, J. Roozenbeek, and N. Oreskes. Misinformation and the epistemic integrity of democracy. *Current opinion in psychology*, page 101711, 2023.

[84] A. Light. Hci as heterodoxy: Technologies of identity and the queering of interaction with computers. *Interacting with computers*, 23(5):430–438, 2011.

[85] C. Linehan and B. Kirman. Never mind the bollocks, i wanna be anarchi: a manifesto for punk hci. In *CHI'14 Extended Abstracts on Human Factors in Computing Systems*, pages 741–748. 2014.

[86] E. M. Lund and K. B. Ayers. Ever-changing but always constant:"waves" of disability discrimination during the covid-19 pandemic in the united states. *Disability and Health Journal*, 15(4):101374, 2022.

[87] A. Madgavkar, O. White, M. Krishnan, D. Mahajan, and X. Azcue. Covid-19 and gender equality: Countering the regressive effects. *JGI*, 2020.

[88] B. Marr. Is generative ai stealing from artists? *Forbes*, 2023.

[89] Mastodon. The people should own the town square, 2025. URL https://blog.joinmastodon.org/2025/01/the-people-should-own-the-town-square/.

[90] E. Mathieu, H. Ritchie, L. Rodés-Guirao, C. Appel, D. Gavrilov, C. Giattino, J. Hasell, B. Macdonald, S. Dattani, D. Beltekian, et al. Coronavirus (covid-19) cases. *Our World in Data*, 2024.

[91] D. McQuillan. Anti-fascist ai. In *Resisting AI*, pages 135–148. Bristol University Press, 2022.

[92] R. Mehrotra, A. Anderson, F. Diaz, A. Sharma, H. Wallach, and E. Yilmaz. Auditing search engines for differential satisfaction across demographics. In *Proc. WWW*, pages 626–633, 2017.

[93] R. Mehrotra, J. McInerney, H. Bouchard, M. Lalmas, and F. Diaz. Towards a fair marketplace: Counterfactual evaluation of the trade-off between relevance, fairness & satisfaction in recommendation systems. In *Proceedings of the 27th acm international conference on information and knowledge management*, pages 2243–2251, 2018.

[94] B. Mitra. Search and society: Reimagining information access for radical futures. *arXiv preprint arXiv:2403.17901*, 2024.

[95] B. Mitra and N. Craswell. An introduction to neural information retrieval. *Foundations and Trends® in Information Retrieval*, 2018.

[96] B. Mitra, H. Cramer, and O. Gurevich. Sociotechnical implications of generative artificial intelligence for information access. In *Information Access in the Era of Generative AI*, pages 161–200. Springer, 2024.

[97] S. Mohamed, M.-T. Png, and W. Isaac. Decolonial ai: Decolonial theory as sociotechnical foresight in artificial intelligence. *Philosophy & Technology*, 33:659–684, 2020.

[98] S. Mondal and R. Karmakar. Caste in the time of the covid-19 pandemic. *Contemporary Voice of Dalit*, 16(1): 114–121, 2024.

[99] T. Monroe-White. Emancipatory data science: a liberatory framework for mitigating data harms and fostering social transformation. In *Proceedings of the 2021 on Computers and people research conference*, pages 23–30, 2021.

[100] J. Muldoon and B. A. Wu. Artificial intelligence in the colonial matrix of power. *Philosophy & Technology*, 36 (4):80, 2023.

[101] N. Neophytou, B. Mitra, and C. Stinson. Revisiting popularity and demographic biases in recommender evaluation and effectiveness. In *Proc. ECIR*, 2022.

[102] K. Nkrumah. *Neo-colonialism*. Nelson, 1965.

[103] M. O'Gorman. At the heart of artificial intelligence is racism and colonialism that we must excise. *The Globe and Mail web edition*, pages NA–NA, 2023.

[104] A. Papamichail. Reinscribing global hierarchies: Covid–19, racial capitalism and the liberal international order. *International Affairs*, 99(4):1673–1691, 2023.

[105] P. S. Park, S. Goldstein, A. O'Gara, M. Chen, and D. Hendrycks. Ai deception: A survey of examples, risks, and potential solutions. *arXiv preprint arXiv:2308.14752*, 2023.

[106] A. Patnaik, J. Son, A. Feng, and C. Ade. Racial disparities and climate change. *Princeton Student Climate Initiative*, 2020.

[107] G. K. Patro, A. Biswas, N. Ganguly, K. P. Gummadi, and A. Chakraborty. Fairrec: Two-sided fairness for personalized recommendations in two-sided platforms. In *WWW*, pages 1194–1204. ACM / IW3C2, 2020.

[108] B. Perrigo. Exclusive: Openai used kenyan workers on less than $2 per hour to make chatgpt less toxic. *Last accessed*, 19, 2023. URL https://time.com/6247678/openai-chatgpt-kenya-workers/.

[109] C. Pinney, A. Raj, A. Hanna, and M. D. Ekstrand. Much ado about gender: Current practices and future recommendations for appropriate gender-aware information access. In *Proceedings of the 2023 Conference on Human Information Interaction and Retrieval*, pages 269–279, 2023.

[110] E. G. Rau and S. Stokes. Income inequality and the erosion of democracy in the twenty-first century. *Proceedings of the National Academy of Sciences*, 122(1):e2422543121, 2025.

[111] P. Regulation. Regulation (eu) 2016/679 of the european parliament and of the council. *Regulation (eu)*, 679: 2016, 2016.

[112] E. Rubayita. Alberta first nation voices 'grave concern' over kevin o'leary's proposed $70b ai data centre. 2025. URL https://www.cbc.ca/news/canada/edmonton/alberta-first-nation-voices-grave-concern-over-kevin-o-leary-s-proposed-70b-ai-data-centre-1.7431550.

[113] N. Sambasivan, E. Arnesen, B. Hutchinson, T. Doshi, and V. Prabhakaran. Re-imagining algorithmic fairness in india and beyond. In *Proceedings of the 2021 ACM conference on fairness, accountability, and transparency*, pages 315–328, 2021.

[114] D. Saxena, P. Wall, and D. Lewis. Artificial intelligence (ai) ethics: A critical realist emancipatory approach. In *2023 IEEE International Symposium on Technology and Society (ISTAS)*, pages 1–5. IEEE, 2023.

[115] H. Scells, S. Zhuang, and G. Zuccon. Reduce, reuse, recycle: Green information retrieval research. In *Proceedings of the 45th International ACM SIGIR Conference on Research and Development in Information Retrieval*, pages 2825–2837, 2022.

[116] R. Shrivastava. Openai and microsoft sued by nonfiction writers for alleged 'rampant theft' of authors' works. *Forbes*, 2023.

[117] A. Singh and T. Joachims. Fairness of exposure in rankings. In *KDD*, pages 2219–2228. ACM, 2018.

[118] A. Singh and T. Joachims. Policy learning for fairness in ranking. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, editors, *Advances in Neural Information Processing Systems 32*, pages 5427–5437. Curran Associates, Inc., 2019.

[119] T. Smyth and J. Dimond. Anti-oppressive design. *Interactions*, 21(6):68–71, 2014.

[120] G. Stefani, J. Devine, A. Kelly, T. Heimer, J. Nguyen, H. O'Shea, C. Reiser, G. Rose, J. Sherry, J. Skene, et al. Indigenous leaders at the frontlines of environmental injustice and solutions. *Natural Resources Defense Council*, 2021.

[121] F. Sultana. *Confronting Climate Coloniality: Decolonizing Pathways for Climate Justice*. Taylor & Francis, 2024.

[122] C. M. Sum, F. Spektor, R. Alharbi, L. B. Baltaxe-Admony, E. Devine, H. A. Dixon, J. Duval, T. Eagle, F. Elavsky, K. Fernandes, et al. Challenging ableism: A critical turn toward disability justice in hci. *XRDS: Crossroads, The ACM Magazine for Students*, 30(4):50–55, 2024.

[123] H. Sun. Critical design sensibility in postcolonial conditions. *AoIR Selected Papers of Internet Research*, 2013.

[124] J. Tacheva and S. Ramasubramanian. Ai empire: Unraveling the interlocking systems of oppression in generative ai's global order. *Big Data & Society*, 10(2):20539517231219241, 2023.

[125] R. Tan and R. Cabato. Behind the ai boom, an army of overseas workers in'digital sweatshops'. *The Washington Post*, pages NA–NA, 2023.

[126] D. H. Taplin and H. Clark. Theory of change basics: A primer on theory of change. *New York: Actknowledge*, page 72, 2012.

[127] P. Törnberg and J. Chueri. When do parties lie? misinformation and radical-right populism across 26 countries. *The International Journal of Press/Politics*, page 19401612241311886, 2025.

[128] P. Vaghela, S. J. Jackson, and P. Sengers. Interrupting merit, subverting legibility: Navigating caste in 'casteless' worlds of computing. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, pages 1–20, 2022.

[129] P. Vaghela, R. K. Mothilal, D. Romero, and J. Pal. Caste capital on twitter: A formal network analysis of caste relations among indian politicians. *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW1): 1–29, 2022.

[130] Y. Varoufakis. *Technofeudalism: What killed capitalism*. Melville House, 2024.

[131] P. Verma. In the shadows of arizona's data center boom, thousands live without power. 2024. URL https://www.washingtonpost.com/technology/2024/12/23/arizona-data-centers-navajo-power-aps-srp/.

[132] J. Vincent. The lawsuit that could rewrite the rules of ai copyright. *The Verge*, 22, 2022.

[133] J. Vincent. Ai art tools stable diffusion and midjourney targeted with copyright lawsuit. *The Verge*, 2023.

[134] N. Vincent. Don't give openai all the credit for gpt-3: You might have helped create the latest "astonishing" advance in ai too, 2020. URL https://www.psagroup.org/blogposts/62.

[135] N. Vincent and H. Li. Github copilot and the exploitation of "data labor": A wake-up call for the tech industry, 2021. URL https://www.psagroup.org/blogposts/62.

[136] N. Vincent and H. Li. Chatgpt stole your work. so what are you going to do?, 2023.

[137] C. H. Weiss. Nothing as practical as good theory: Exploring theory-based evaluation for comprehensive community initiatives for children and families. *New approaches to evaluating community initiatives: Concepts, methods, and contexts*, 1:65–92, 1995.

[138] R. W. White and C. Shah. Information access in the era of generative ai, 2025.

[139] Wikipedia contributors. Theory of change — Wikipedia, the free encyclopedia, 2013. URL https://en.wikipedia.org/wiki/Theory_of_Change.

[140] A. Williams, M. Miceli, and T. Gebru. The exploited labor behind artificial intelligence. *Noema Magazine*, 13, 2022. URL https://www.noemamag.com/the-exploited-labor-behind-artificial-intelligence/.

[141] J. Williams. Why climate change is inherently racist. *BBC, accessed January*, 26:2023, 2022.

[142] R. M. Williams, K. Ringland, A. Gibson, M. Mandala, A. Maibaum, and T. Guerreiro. Articulations toward a crip hci. *Interactions*, 28(3):28–37, 2021.

[143] T. Williams and K. S. Haring. No justice, no robots: From the dispositions of policing to an abolitionist robotics. In *Proceedings of the 2023 AAAI/ACM Conference on AI, Ethics, and Society*, pages 566–575, 2023.

[144] P. Wolfe. Settler colonialism and the elimination of the native. *Journal of genocide research*, 8(4):387–409, 2006.

[145] E. O. Wright. *Envisioning real utopias*. Verso Books, 2020.

[146] H. Wu, B. Mitra, C. Ma, F. Diaz, and X. Liu. Joint multisided exposure fairness for recommendation. In *Proc. SIGIR*, 2022.

[147] H. Wu, B. Mitra, and N. Craswell. Towards group-aware search success. In *Proceedings of the 2024 ACM SIGIR International Conference on Theory of Information Retrieval*, pages 123–131, 2024.

[148] C. Xiang. Openai used kenyan workers making $2 an hour to filter traumatic content from chatgpt. *VICE*, 2023.

[149] A. Young, Y. Zhu, and V. Venkatesh. Emancipation research in information systems: Integrating agency, dialogue, inclusion, and rationality research. 2021.

[150] M. Zehlike and C. Castillo. Reducing disparate exposure in ranking: A learning to rank approach. In *Proceedings of the web conference 2020*, pages 2849–2855, 2020.

[151] S. Zuboff. The age of surveillance capitalism. In *Social Theory Re-Wired*, pages 203–213. Routledge, 2023.

[152] G. Zuccon, H. Scells, and S. Zhuang. Beyond co2 emissions: The overlooked impact of water consumption of information retrieval models. In *Proceedings of the 2023 ACM SIGIR International Conference on Theory of Information Retrieval*, pages 283–289, 2023.