

Anti-Racist HCI: notes on an emerging critical technical practice

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ABSTRACT

Our everyday technologies evidence clear examples of racial bias. Rather than attempt to eliminate bias through seeking fairness in algorithms, regulatory intervention or a race-blind stance, this paper seeks to correct the balance by adopting an explicitly anti-racist approach to the design of sociotechnical systems. As a research-through-design initiative, we bring techniques from critical technical practice to bear on revealing and inverting assumptions in HCI, attempting to produce alternative sociotechnical systems that aim not merely to reveal or correct but to destabilize or dismantle systems of oppression. We articulate core principles to guide such work and articulate four system prototypes to interrogate anti-racist HCI as a potential form of critical technical practice. We conclude with discussion of the challenges that face anti-racist HCI in terms of timing, reflection, and failure, addressing what an

anti-racist critical technical practice reveals about the enduring structural sources of inequity in the products and practices of HCI.

CCS CONCEPTS

• **Human-centered computing** → **HCI theory, concepts and models.**

KEYWORDS

antiracism, critical technical practice

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1 INTRODUCTION

An ample body of work demonstrates that everyday technologies produce racially discriminatory effects in the world, whether through reproducing societal biases via algorithms [31, 68], enrollment in carceral systems [5, 12], or emphasizing a culture of computing associated with certain kinds of racialized bodies [1, 28, 82] while erasing others essential to the technological project [64, 66].

Building racialized orders into technologies contributes to what sociologist Bonilla-Silva calls "racism without racists" [10] through the continual production of social orderings based on racial classification: as Ruha Benjamin puts it, "the new Jim Code" [6]. Current calls to address these shortcomings through an emphasis on dataset bias, algorithmic transparency, expanding participation from communities of color, or corporate responses to public gaffes are important steps but remain piecemeal [46]; meanwhile, technologies that aim for neutrality or avoid confronting racialization implicitly amplify the needs of the overserved [6]. The scale of the problem requires an ambitious new approach.

This is a manifesto for a re-envisioned form of HCI research and practice that centers anti-racism at its core. Over several months, our group of engaged scholar-activists with backgrounds in computer science, sociology, and African American studies, undertook an empirically- and theoretically-driven exploration of anti-racism as a stance for HCI and system design. We propose that addressing the problem of systemic racism not as a "glitch" [6] or an afterthought requires tackling the problem head-on through an alternative framework - a turn toward an *anti-racist HCI*. As our field grapples with the racial and global inequalities our precious technologies have wrought and perpetuated, we investigate how or whether we can draw on our field's rich history in critical technical practices to question our deeply held assumptions in HCI, using critical technical making and methods to counter hegemonic norms associated with our predominantly White field [30, 42, 71] located in a racially ordered world. This paper's goal is not to suggest that we can fix racism through technology, but rather to interrogate present methods and suggest alternative approaches to HCI, grounded in critical inquiry, seeking abolitionist opportunities for the mutual and ongoing entanglement of people and machinery. And while our design interventions are centered in the United States, a country whose history is intertwined with racial ordering and injustice, forms of racial othering are not limited to the American context. It is our stance in this paper that we must confront and even resist our deepest held assumptions in HCI if we are to design and build equitably.

1.1 Inspiration and Approach

We see this work as in line with emerging strands of HCI that call race and racism to our immediate, urgent attention. Bold new scholarship asks us to consider the hegemony of design practice [32, 50], ways to expand participation in participatory design [29, 40, 42], the inclusivity of our HCI community [30, 41], and the integration of critical race theory in HCI [71]. In extending this work we seek specific inspiration from design projects which seek to question and trouble the underlying assumptions in sociotechnical systems and methods for their development (under the general moniker of "critical computing" or "Critical Technical Practices"), and from scholarship in critical race theory and anti-racism.

Why turn entirely toward "anti-racist HCI" when we could 'just' exhort engineers and designers to critically interrogate their code, datasets, and algorithms? Because taking a systemic approach to racism in society - in *all* societies - requires a systemic intervention. Certainly we hope our readers will refrain from individual acts of racism! However, the injunction "(just) don't be racist!" assumes an

individualized responsibility in the face of overwhelming structural - and, arguably, infrastructural and sociotechnical - pressures [57]. In this, our objection to the aforementioned premise shares grounding with critiques of, for instance, sustainable HCI [24, 27], which places blame upon individuals for societal-level problems. Turning to critical technical practices as a first step allows us to hold our present assumptions under a microscope, and to ask ourselves what it would take to build differently. We see this as an essential first step for an anti-racist HCI, which must subvert present ways of knowing, working, and building to design against the grain.

Critical technical practices ask us to imagine and to build alternatives to mainstream systems by replacing various premises at the core of sociotechnical system development with alternatives [2, 58, 72, 73]. Among these, we took inspiration from five interrelated points of departure, taking care not to taxonomize among heterogeneous schools of thought. The first are system design approaches that trouble core premises in HCI and normalized rhetorics in computing systems. Early instantiations took aim at efficiency, individuation, task-orientation, or quantification by designing for playfulness [37], ambiguity or experience [36, 56]; recent turns in feminist HCI trouble easy binaries, disembodied systems (as in the "Feminist Data Manifest-No"), or adopt a posthuman stance [4, 16, 77]. The second is a form of reflexivity inspired by the design exercise and its results in reflective design, which asks us to build systems that inspire the user's own reflection upon generalized assumptions in technology [9, 80]. Third are approaches that center values in the design process, such as value-laden and value-sensitive design. These question the apparent objectivity of artifacts by making alternative values explicit and designing around these invocations instead [15, 33, 59]. Fourth, adversarial design centers the divisive political qualities of social life, asking us to design systems for the agonism and contestation that characterizes the public sphere instead of brushing conflicts under the rug [23]. Finally, participatory design has from its outset sought to dismantle the designer/user binary through co-design techniques [8, 65]. Taken together, these approaches are additionally informed by arts practices, critical theory, and social theory, producing provocative artifacts - such as Flanagan's collaborative Atari joystick or Jeremijenko's feral robotic dogs - that stand in opposition to present approaches in computing.

Importantly, in seeking to identify an explicitly anti-racist HCI practice we also interrogate which aspects of our current processes, institutions, and assumptions contribute to producing continued racialized sociotechnical effects. We ask, what could and should an explicitly anti-racist design practice look like? Which adjustments are necessary to our typical research, design, development, and evaluative processes? How can we design to bring the *systemic* aspect of systemic racism into clear view - *and take it down*? Seeking to be overtly, actively *anti-racist* in our design of technological systems thus requires us to confront and address core aspects of HCI's design practices, which we argue participate in the continued contribution of sociotechnical systems toward racialization.

This paper is the result of a 3-month group project to articulate premises for anti-racist design based on the oppositional approaches offered by the above-listed critical technical practices (CTPs), in conjunction with prominent theorists who take a structural view of race and society. While we do not take the above to be exhaustive,

we use CTP techniques as a departure point to determine potential synergies and departures between anti-racist HCI and CTP. True to the spirit of CTP, we engage in a research-through-design project to address problematics in design practices writ large, and to establish possibilities for anti-racist HCI as an additional strain of critical technical practice: one grounded explicitly in critical race scholarship from sociology, media studies, and cultural critique. We began by elaborating core principles for anti-racist design as a form of CTP, drawing upon leading scholarship on race theory and race and technology. We then place these premises into conversation with existing CTPs in the design and prototyping of four systems. Space precludes a full description of these systems: we instead discuss them as research-through-design exercises that reveal the challenges for HCI represented by the centering of anti-racism as orientation and practice. In particular, the specific failures of these systems as design exercises demonstrate precisely which aspects of mainstream HCI require change and redress if we are to produce not just "bias-free", but truly anti-racist systems.

2 DEVELOPING PRINCIPLES FOR ANTI-RACIST HCI

Critical race theorists provide a necessary vocabulary for understanding the structural conditions of racialized systems, and orientations toward the eradication of such systems under an anti-racist premise. There are multiple statements in this literature that offer important positionings for the field; for our part, we began with points of departure across sociology and technology studies. This includes Bonilla-Silva's articulation of racialized social systems, in which racialization based on phenotypes or ethnicities forms a core part of societal structure; the work of black feminist scholars that urges examination of "intersectional" identities such as black women [19, 45, 47]; and recent work on anti-racism which takes aim at the restrictive social structures that inhibit potential based on racial classification [57]. Alongside this scholarship, we reviewed work on race and technology, such as Benjamin's "New Jim Code" which examines how racialization projects are built into technical systems, Noble's injunction that intersectional identities matter on the web, Andre Brock's studies of Black creativity and joy in online spaces, and McIlwain's resurrection of forgotten figures in the history of Black computing [6, 14, 64, 68]. Weaving this literature together we relied heavily on a close reading of Ibram Kendi's text, *How To Be an Anti-Racist*, orienting its lessons toward interventionist technical practice.

From this literature we distilled thirty principles, italicized and summarized below and also listed in Appendix A, to guide potential anti-racist projects in HCI. Such critical principles do not take aim at specific practices or techniques, i.e. user studies or co-design. Instead, as is common to CTP, we aim to trouble the underlying assumptions of design and HCI as a whole by starting from a different set of premises altogether. This enabled us to view where our current design techniques fail in serving these communities of users who are typically forgotten or excluded, as well as the ways in which we must change current practices oriented toward inclusion and abolitionism.

Drawing from this work, our principles fall into several categories. Anti-racist systems should *address* instead of neglect racial

inequities, while assuming that *all racial groups are inherently equal*, with none requiring 'development' [57]. They must center *community and community-building* over hierarchy [57], especially bringing communities of color together with allies toward *co-liberation* [6]. They should reject *solutionism* by seeking deep solutions instead of aiming for *speedy* technical fixes [6, 88], and provide opportunities and spaces for *joy* [6, 13] and novel *imaginaries* for technical futures [39, 67]. Anti-racist technologies might also *counteract* existing sociotechnical systems, by *flagging* systems that are misused for racial discrimination, seeking *accountability* from leaders and institutions and holding them to account for biased implications of their technologies, and resisting or otherwise undoing technological *redlining*. They must redress the deep legacies of racism in *history* and in geographical *space* [63, 64, 76], and must *redistribute* power structures, including the unequal accumulation of wealth and power [57, 75].

Considering technological work in particular, we intervene in the roles of users, designers and data. Both *designers* and *users* must be pluralistically identified, with intersectional identities front and center throughout the design and persona process, without tokenizing users [19, 45]. We must also design for users across the *class* [19, 57] spectrum, with an appreciation for how class, gender, and race intersect in specific ways. Design teams must include Black, Indigenous, and people of color as creators in the process of creativity, equally, to go beyond diversity as a form of mere 'representation' toward full inclusion [42] in articulating and achieving processes and goals. Users or study participants should be treated both as *experts* in their domain, and receive *fair treatment*, including compensation. Designers themselves should be asked to confront their privileges, power, and inherited *biases* as part of the design project [71]. *Data* in use or accumulated must be balanced, when possible, or interrogated for sources of *data bias*; and data itself must be handled within the system in a way that manages the visibility of inherently vulnerable user populations [16]. The process must aim for *transparency* with many opportunities for feedback, and each stage of iterative *evolution* should be evaluated for advancement to antiracist goals and aims [88], with *mutual evaluation* assessing opportunities for growth [56].

Finally, anti-racist HCI cannot support *profit-maximization*, nor measure success through monetary gain [57]. This is important as a corrective to systems of racialized capitalism [18, 75], which profit from racializing projects. Anti-racist projects must seek and pursue alternative forms of enrichment and metrics for success. Like the Black farmer cooperatives in the 1930's that rose up against the financialization of sharecroppers' debt in white co-ops and banking structures, anti-racist systems must seek to change the game entirely. As such, anti-racist systems might seek to enroll novel *configurations* of actors in constructing just systems [3, 17, 61].

These orienting premises offer a corrective to racialized social structures not only through taking account of racial inequities in the design process, but through direct antagonism toward racialization projects. Reviewing them and putting them into practice reveals the depth of transformation necessary to design projects and to HCI more generally in order to achieve abolitionist goals. Contemporary HCI is deeply imbricated in a technology industry involving massive corporate partners and profits, implicated in the

education of prospective entrepreneurs, and infused with inherited ideologies in which information, assumingly, wants to be free. For many HCI practitioners, it may be unimaginable to conceive of alternative profit models, or to challenge the visibility and transmission of data, or to consider alternative embodied ways of being in the world. The fact that this already seems like a tall order indicates the problematic premises of our existing orientations, and makes sense of technology's current uncritical participation in racialized projects. This also suggests the potential power of a critical technical approach, despite the Whiteness of the field, as such practices undo and destabilize core assumptions in computing and research..

In the following section, then, we discuss four prototyped systems we developed in order to probe these challenges. Each system sought to associate one or more critical technical practice, with a well-researched issue of concern for racialized minority groups, guided by the premises discussed above and listed in Appendix A. We do not claim that these systems *are* anti-racist: rather, that in their construction, we interrogate what anti-racism means, how or whether anti-racist goals can be effected through the use of critical technical practice, and which challenges we observe to HCI when we center anti-racist premises in our process. As such, we discuss the key assumptions associated with design practices that each system revealed and conclude with implications for a theory and practice[26] of anti-racist HCI.

3 FOUR ANTI-RACIST DESIGN EXERCISES

3.1 Campus AR: Augmented Reality and Racial Iconography

Addressing the premises of *space, history, redistribution, accountability, and joy*, CampusAR sought to intervene in an Ivy League university's lineage as an exclusionary institution which persists in the manifestation of space: building names, monuments, portraits and other forms of campus iconography. The team was additionally troubled by the erasure of the contributions of Black, Indigenous, and People of Color (BIPOC) to the university, creating an implicit hierarchy of value and contributing to a negative sense of belonging [48, 49, 55, 81]. These concerns were amplified in 2020 and 2021, with the rise in anti-Black and anti-Asian hate crimes in the United States. The team therefore sought to address student's sense of belonging at the University (defined as "perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group or others on campus"[83]). Inspired by sociological work on "racialized emotions"[11], BIPOC joy on college campuses [87], and digital expressions of Black joy and creativity [13], the team turned to augmented reality to digitally alter the material conditions and iconography of campus spaces. They thus sought to rendered the campus familiar to, conducive to, and expressive of BIPOC belonging in a historically white college campus in which certain buildings and statues still commemorate former slave-holders and even committed white supremacists.

The project began with inspiration from reflective [79] art museum projects that challenged users to re-imagine interactions between art pieces and visitors; and from ludic principles of playfulness to inspire instances of joy [37]. Beyond reflection, however, the team engaged adversarial design in challenging the erasure of

BIPOC participation at a time when the Board of Trustees were actively debating campus iconography. The Board's report allowed the imagery to stand as testament to historical legacy: the app, meanwhile, challenges users to see and experience the university otherwise, and to question whether it is really so difficult to make such small changes that create such a noticeable difference in an inclusive campus experience (Figure 1). The team thus entangled joy and disruption together in critique.

A key challenge addressed early on was the question of data visibility and profit. The team investigated several AR systems, each of which was promoted by a large technology company: for ease of scaffolding and widespread use by the student body, they decided to use Instagram for proof-of-concept. Well aware of the monetization of users' data on the platform and the ownership of the data by the platform, the team delivered the AR images and videos to an open source repository such that they could not be claimed exclusively by the platform [18]. They aimed to redress the problem through development of alternative systems, although this notably takes time, expertise, and requires participation. Later, the group faced an additional challenge when college representatives, rejoicing at the project and its potential, asked to use it for student recruitment. While the emphasis on a more diverse student body appealed to the project team, they recognized bell hooks' articulation of "eating the other" [47] wherein a project imagined to express their own joy and belonging might be appropriated by a hegemonic group to support a 'White gaze.' The team chose to resist transferring the project to the purview of the recruitment team, seeking instead to shelter it under a campus center that supports diversity in student life. Here, they felt the project could continue to sustain belonging among student communities while belonging to those communities as well.

3.2 HOUSD: Confronting the Eviction Crisis

Inspired by the unequal distribution of evictions in America, especially under the pressures of Covid19, and by sociologist Matthew Desmond's claim that "if incarceration had come to define the lives of men from impoverished black neighborhoods, eviction was shaping the lives of women"[20], HOUSD attempted to produce a toolkit for housing resources in adversely affected areas. The platform aimed to combine data from the Eviction Lab project on concentration of evictions, with local resources and an interactive community element to connect the evicted. Copious prior work in the sociology of inequality indicates the link between prior systems of racial discrimination, such as Jim Crow laws and redlining, and continued discriminatory practices in unequal distribution of housing today lead to nearly 80 percent of evictions affecting Black and Latinx citizens [21, 22, 43, 76]. In particular, different cities have different access to resources based on civic initiatives and public datasets: powered by NYC OpenData, New York City presents publicly accessible maps, eviction rates, housing violations, and harassment data to empower tenants with information when looking for housing[69, 85, 86]. Meanwhile, other cities with even higher eviction rates such as Memphis, Tennessee (at a staggering 6.1 percent eviction rate compared to NYC's 1.61 percent) had tenant populations more in need of such resources. The team chose Memphis as a model city to develop a minimum viable tool for

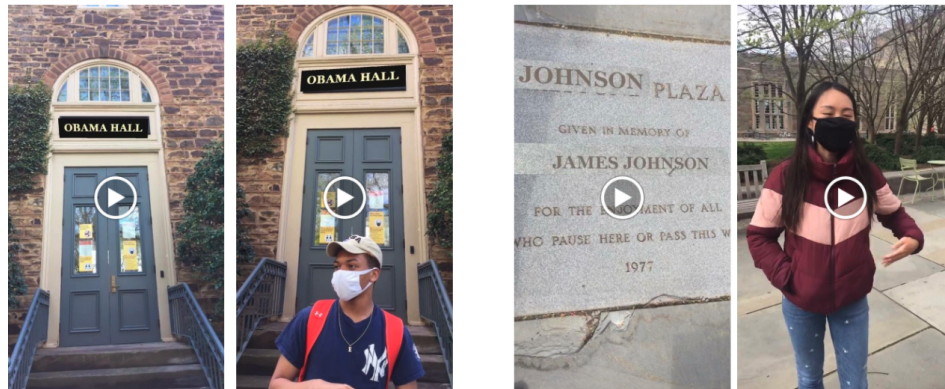


Figure 1: Examples of anti-racist augmented reality (AR) filters and first-person narratives located at different sites on the university’s campus. The buildings and plaza are renamed in AR after prominent alumni of color, replacing the names of a slave owner and a donor whose company profited from Black labor.

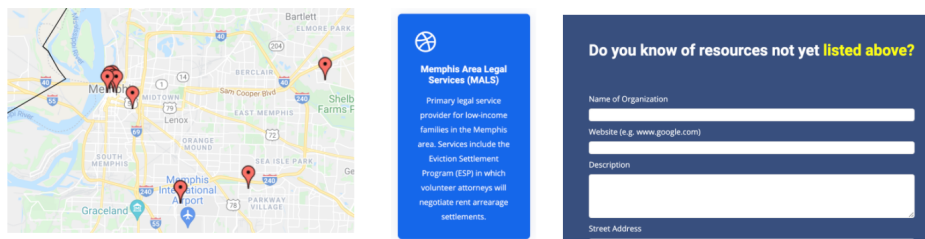


Figure 2: The HOUSD site displays local resources and opportunities for tenants to add their own points to the map. Not pictured: map layer indicating local eviction densities.

tenant and housing insecure resource distribution and empowerment: not only due to a scarcity of online resources for tenants and evicted populations, but also because in Memphis evictions affected minorities at 5 to 7 times the rate of whites during Covid19, and an eviction moratorium was struck down in March 2021[54, 60]. The team aimed to *counteract* systematic racism in the housing industry by exposing inequalities in the distribution of evictions in addition to supporting anti-racist solutions such as mutual aid and non-discriminatory housing; to *redistribute* power differentials between landlords and tenants through information access, for instance to tenants’ and landlords’ rights and legal information; and to *build community* through connecting tenants for discussion without fear of retaliation (Figure 2).

The team was inspired by recent invocations to address inequity in participatory practices through sustained community interactions [42, 88]; due to time, distance, and pandemic constraints, however, the team was only able to interact closely with the tenants’ rights organizations in Memphis and online eviction data. These interactions assisted in directing the team to core issues on the ground: conflict between tenants and landlords over lack of awareness about responsibilities and rights, lack of knowledge of resources for rent relief, legal aid, or lease options, and the ability to track data about whom is actually impacted by evictions. The final design aimed for portability to other jurisdictions, while retaining the local database of issues with respect to legal particulars. The

team hoped, once pandemic restrictions were limited, to be able to conduct in person participatory interactions, in no small part to build the community base for use of the platform.

The HOUSD team encountered severe challenges with respect to temporality and participation. First, it became abundantly clear that no true solution to a problem as deep and historically rooted as the housing crisis in America could be resolved in the short time frame required for a class project; or, analogically, for the short time frames typically assigned to MVP’s from hackathons to scrums to corporate product development. Just as Irani describes forms of entrepreneurial time, instantiated through the "hackathon", for instance, that bound politics or restrict essential footwork [51, 52], in this project we observed this problem as contributing to racialized capitalism. Paying homage to speed is in opposition to anti-racist techniques which must take their time to access those who are inaccessible, collect data that is unavailable, consult those who are not typically consulted, and to tie together disparate organizations and information among whom there is no umbrella organization to knit resources and people together, and indeed whose very disparity and invisibility is contributing to unequal outcomes. Hence the speed of capital and the ease required to bring products to market (and to be first to market) reinforces racialized orders rather than dismantling them. Second, the limits of participatory design are exacerbated during crisis such as a pandemic, or waves of eviction. Just as those who have sought to intervene in refugee crises or in

crisis informatics, how to locate or access people who are repeatedly dispossessed? When people are literally evicted from the possibility of community, are online tools enough to draw them together? What kinds of workshops would even enable them to adequately express their needs, and how would a technical system pale next to more urgent requirements like food, schools, or clean water?

3.3 School Redistricting: Mapping educational possibilities

Housing inequities also undergird substantive educational disparities in the United States, where school district funding is allocated from local districts, each with high differentials in real estate cost and taxable income. Inspired by systems that inquire into how gerrymandering electoral districts affect vote counts, especially systems like <https://districtr.org/> that let users draw their own electoral boundaries and observe changes in outcomes, this team sought to build a similar tool for school districts that would visualize differences in public school funding that would be made available due to shifts in districts. At the time, the state senate was considering a bill (NJ S3488) that proposed to consolidate school districts along the lines of municipalities. Despite being the fourth most diverse state in the country, the state's school districts are the sixth and seventh most segregated systems for Black and Latino students respectively; poorer communities in the state are predominantly Black and Latino. An adequacy budget determined by the state's Department of Education aims to provide equalization measures to districts to make up for the difference between local tax revenues and assessed baseline operating costs, but the state cannot always make up the difference. As a result, in 2020 Newark, one of the largest and poorest cities in the state, was under budget by 183.4 million dollars, while the nearby wealthy township of West Orange was over budget by 25 million.

In the absence of easy tools with which to manipulate district lines and associated calculations, the team sought first to build a comparative map that showed present funding allocations with racial and socioeconomic data for the area, versus projected future values under the new district lines. The team worked with Mapbox and harmonized National Center of Education Statistics with New Jersey Policy Perspective data to present information on school financial, enrollment, student composition, and expenditure information, as well as income and property values within a district boundary based on regional sales from which tax revenue is assessed. The project deployed a reflective design approach by aiming to inspire reflection among users about the inequities built into school resource distribution. It built on the anti-racist principles of redistribution, equity, and class. They sought to demonstrate how reallocation of education funding could be used to redistribute power to produce a more equitable system. The system visualized the impact that the new redistricting would have for enrollment distribution across races as well as an average equalized payment per student, thereby highlighting the existing class divides that might be bridged through new district financing (Figure 3). But while the design aimed to visualize a potential future with more equitable outcomes, there is much more to the story of Black and Hispanic students in underserved schools outside of school finance. Once again, the team confronted the notion that reflection is not enough,

and only intervention might change the statistics and outcomes they observed. Tying the project to a political discussion allowed the team to embrace a more agonistic framework by demonstrating the outcomes of two sides of a debate, instead of allowing users to investigate freely with redistricting tools and propose their own solutions to the problem. An even more powerful possibility might be to deliver the design to principals and superintendents in order to make decisions about resource allocation and conduct local story-telling about metrics for their systems; or to enable students to annotate or provide examples or discuss issues of race in their classrooms.

3.4 Adcountable

Centering the anti-racist values of accountability, flagging and transparency, "Adcountable" is a browser plugin that subverts the power structures in targeted advertising. The plugin replaces corporate ads on a web page with information about that corporation's ethical violations, especially related to racial or gender trauma. Presented with this information, the user is invited to click to learn more, and potentially get involved in action that takes the company to account, or to view the ad. The team hoped to create opportunities for *accountability* on the part of the advertised company by making injustices transparent to users, and providing users with a means of taking action in response to a company's malpractices. Allowing users to leverage information about the advertising company to decide whether or not to engage with the ad flips the power structure in which advertisers leverage user data with no opportunity for reciprocity, and in which advertising companies and platforms categorize users in such a way as to increase inequalities [38, 70, 89, 92]. Shifting the data used to populate the ad space engages the principles of *redistribution and counteraction* as well as developing novel *datasets* that run counter to unethical interests or the technologies of dispossession [62, 92]. Further, due to the longstanding racialization of targeted advertising that continues in online spaces [44, 90], intervening in personalized advertising provides another avenue for anti-racist action. While early versions of their application featured more reflection, the Adcountable team felt that more effective anti-racist systems should take direct action by intervening in the user's experience and forcing confrontation, as well as providing access to resources such as petitions or opportunities for organizing when users click to learn more (Figure 4).

But if the surveillance of the populace by companies has resulted in reams of data used for profit, *sousveillance* of these same companies by that very populace is a difficult task. The team faced the obfuscation of information early on in their project, as they confronted the cross-origin iframe requests deployed by Google Ads and similar platforms. As such, it proved impossible in limited time frame to identify the provider's served advertisement. The system was easier to implement on Facebook. Second, there is no existing database of ethical violations by companies; and assembling a thorough database on all online advertisers is a Borgesian task. The team therefore seeded the database with initial findings and sources as proof of concept, leaving open the opportunity for volunteers to contribute to this database. While they sorted unethical practices into categories such as racism, sexism, or child labor, they lacked

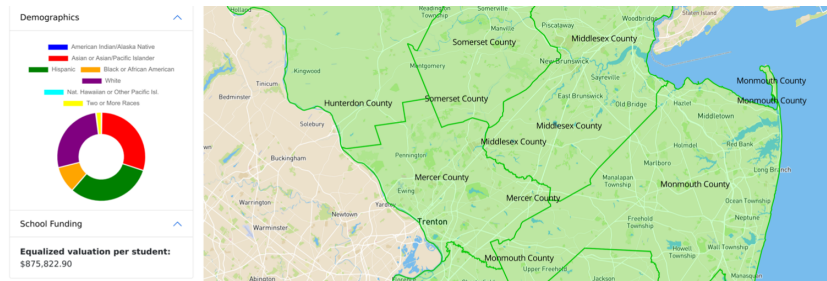


Figure 3: Example of dynamically produced demographic information and projected school funding for a redistricted area previously exhibiting high levels of inequality in funding per school.

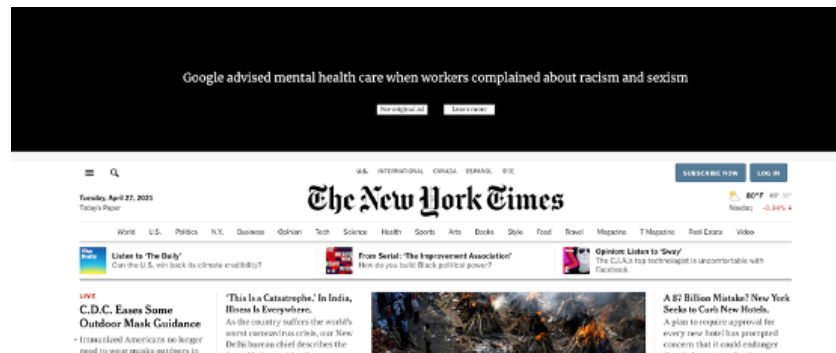


Figure 4: Screenshots of the Adcountable browser extension in action on the New York Times website, covering a Google-served advertisement.

the resources and action items to fully counteract corporate practices in these categories. They left such work for future developers whom might not only inform, but encourage engagement with community partners: another essential component of anti-racist design. Ultimately, surfacing what is hidden – more properly, what powerful entities *want to be hidden* – proved to be difficult and resource-intensive beyond the capabilities of the group.

4 REFLECTIONS AND DIRECTIONS FOR ANTI-RACIST HCI

As the teams discovered, adopting a truly anti-racist practice in HCI requires going beyond well-intentioned design principles. The process of research-through-design allowed us to articulate core problems and possibilities associated with the tensions in standard HCI practice: time and money; reflection and action; and failure and progress.

4.1 Time and Money

Our chief question at the outset was whether anti-racist design was even possible in an environment dominated by racist policies and systems. At the time we envisioned these problems as somewhat amorphous, structural inequities beyond our grasp. But we soon encountered a very tangible and significant aspect of this environment: the pressures associated with capitalist orientations to time and (by an extension made natural in capitalist systems) money. Each team found that the pressure to produce systems in a short

period of time with limited resources for research and development, inevitably led to cut corners: from using corporate platforms like Instagram for CampusAR to functioning prototypes for Adcountable without a robust database of sousveillant information, or HOUSD’s focus on tenancy organizations. In the corporate design context, or even within the time frame of a class project, we are more likely to double down on ready-to-hand solutions, from White user populations to Google documents, to support our research [92]. Like well-meaning engineers who hope to circle back to talk to minorities in a second round of interviews, we too relegated significant anti-racist elements of our project - the user-owned platform, the database of corporate violations, or the peer-to-peer component - to a later stage in the project.

Other theorists in HCI and at the intersection of race and technology have noted the importance of slowing down – resisting tech industry injunctions to, among other issues, "move fast and break things" [6, 16, 71, 88]. Confronting this barrier in our own work, our sensibility was to a form of capitalist temporality that [91], in HCI at least, contributes to a form of racial capitalism. This term more often describes the use of BIPOC bodies or creativity to power production and create surplus value in terms of goods, services, place-making [74, 75] – or in tech, data [7, 18] and social "innovation" [51]. We add to this that it takes time, resources, patience, and work to re-script sociotechnical systems and practices from the bottom up, to build lasting relationships with under-served communities instead of defaulting to the overserved [6] who appear (less expensively!) ready-to-hand. Such "investment" of time may

even be configured as a "cost" that our practice just can't "afford" due to "expense" (whether in dollars or in academic currencies like citation counts). While we must not delay acting on racial injustices and be proactive in seeking effective interventions, speed can be dangerous, preventing us from soliciting necessary participation or fleshing out ideas thoroughly, or even pushing us to gloss over complex issues with solutionism [88]. Until we can center these elements of our projects as essential and worthy *investments*, indicators of the time it takes to do it right, anti-racist goals will be actively undermined in our interventions.

4.2 Reflection Is Not Enough

An additional challenge throughout this process was the role of reflection in anti-racist design. Initially, we hoped that provoking reflection upon the ubiquity and structural nature of racial constructs could be a powerful design outcome. We therefore expected that reflective design's challenge to the wide-spread assumption of neutrality baked into sociotechnical systems, in particular, would align well with an anti-racist approach [80]. But while reflection is both necessary and important in dismantling racist policies and systems, in the process of developing these systems we determined that it was never enough. Anti-racist systems must provide actionable accountability - lead to opportunities for users to *act*[57]. "Mere" reflection might inspire a situation of "eating the other" [47] in which gentle contemplation of racialized social structures is an intellectual product to be consumed.

As such, the teams increasingly shifted orientation away from reflection as they developed their systems, and struggled within existing power structures to provide the data, actionable conduits, and opportunities for users to put reflection into meaningful action. They preferred to enroll participatory practices to ensure into account underserved voices and flipping the power structures inherent to data structures and research contributions, and adversarial stances to discourage user passivity or a sense of standing outside the system and its politics. Even "counteracting" a power structure proved troublesome, as team members worried about the concreteness of their interventions: Is the fix cosmetic? Unintentionally harmful? Sufficiently, *concretely* impactful? And are users presented with viable alternatives? Even as they worked to undermine institutions that contribute to racialized social systems, or whose organizational inertia makes radical change a considerable challenge (like universities or corporations), team members still expressed the hope that future anti-racist projects in the technology space might enroll these institutions as well as grassroots organizations, to take advantage of institutional resources and influence while creating change from the inside out. They also considered how to build an antiracist infrastructure to support this work outside of hegemonic institutions. Regardless, we suggest that such struggle with power structures might be a defining feature of anti-racist HCI practice, as it positions the designer or engineer in the battle against racism instead of relegating this stance to the user, and actively resists the notion of designerly neutrality.

4.3 Failure and Progress

Our final finding regards failure. At the outset of the process we were plagued with a fear of not doing enough - perhaps even not

being anti-racist enough. Our anxiety reflected the scale of the problem, in which any intervention feels like too little and it is impossible to know where to begin, inspiring what one author called "antiracist imposter syndrome." It also revealed truths about our own subjectivities as racialized individuals and aspiring allies. And in a social environment replete with racist structures, institutions, and sociotechnical systems, antiracist systems are admittedly not set up for success. Our attitude changed with the realization that when evaluated from an anti-racist stance, almost *all existing systems are failures*. What is generally considered "good design" practice "for" such racially structured environments would surely recreate the problem. As such, much of what we experienced as the shame of "failure" was in actuality just the experience of doing something different: it would be a greater failure to fail to challenge our deeply held assumptions and practices in HCI. Certainly, there is no mobile application or wearable device that can "solve racism" - or racism would not be the deeply ingrained problem that it is [34]! Designing to "fix racism" would merely reproduce technological solutionism, which our anti-racist principles warn against, and bring us back into the solutionism trap [78, 84]: a feedback loop of malformed problems and surface-level fixes that treat problems of race and marginalization in reductive and careless ways.

We therefore suggest that anti-racist HCI elevate an alternative approach to failure in design. First, anti-racist systems *should* cause discomfort because they disrupt the status quo. Deviation and non-conformity do not constitute failure: rather, opacity, solutionism, and presumption do. Second, our discomfort with failure reveals how solutionism is, to a large degree, baked into the HCI design and evaluation process. As such, in rejecting solutionism, we considered alternative approaches, such as whether myriad small-scale, well considered interventions might be more effective than a large-scale, ill-considered system at tackling the problem. Third, though failure is uncomfortable, we cannot let it overwhelm our desire to enable racial justice. Hence the possibility of failure should not paralyze potential antiracist designers: we should see failure as a warm invitation and a critical part of understanding anti-racist system design work in continual action.

5 AN INVITATION, NOT A CONCLUSION

"Anti-racist" is not a static adjective, but an invitation to actively, continually combat structures of oppression, and to adopt dynamic adaptations as the needs of the oppressed change. There is therefore no "anti-racist" system that can be built, evaluated, and let run its course without continual reflection, adaptation, and engagement. This demands alternative approaches to those made standard and comfortable in HCI, to be sure. To paraphrase the approach of postcolonial computing, then, antiracist HCI is an invitation to a conversation rather than a recipe [53]. Much as Gaver et al. suggest the necessity for a polyphonic evaluation built on engagement and accommodation [35], any responsible evaluation of anti-racism in a system must be as continual, intrusive and nuanced as racism is rooted and complex. Our own attempts to "couple critique with creative alternatives" led us to investigate overlaps between anti-racist approaches and critical technical practices, and to articulate a place for "anti-racist HCI" as itself a form of critical technical practice. Certainly our attempts to center antiracism in our system design

work revealed numerous critiques associated with standard HCI practices that require considered work to redress. Yet in the process of deploying a critical technical stance, we unveiled opportunities for alternatives. Our hope is that future work builds on these insights, establishing new practices, entanglements and imaginaries as HCI orients toward design justice [17, 25].

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A APPENDIX A: PREMISES FOR ANTI-RACIST HCI

- (1) COUNTERACT: Antiracist technologies recognize and counteract racist technologies or policies by implementing antiracist ones in their stead (i.e. algorithms that confront or change racist policies like gerrymandering)
- (2) REDISTRIBUTE: Antiracist technologies analyze and redistribute existing power structures, by redistributing and decentralizing rather than accumulating wealth or power
- (3) USERS: Antiracist technologies conceptualize the user with all sorts of identities in mind, including intersectional ones: not just cisgender, white, heterosexual male users. Antiracist

technologies are not rooted in gender binaries or heteronormativity. However, antiracist technologies also differentiate between representation and tokenization.

- (4) **DESIGNERS:** Antiracist technologies go beyond representation to make Black and Brown designers integral in the creation process. Antiracist technologies also center women and queer BIPOC as creators. Throughout design work all contributor's pay cannot be decimated because of their ethnicity, race, sexuality etc. They offer fair compensation.
- (5) **COMMUNITY-BUILDING:** Antiracist technologies give people a channel to use their antiracist power by offering their time or their resources. They center community over hierarchy. Antiracist technologies support full-stack problem solving. They can help bring people of color together without making it easier to discriminate against, marginalize, or target them.
- (6) **FLAG:** Antiracist technologies recognize, flag, and prevent racist misuse of a platform; and may remove or flag particular racialized technologies from market (i.e. snap filters that make your skin lighter); they inform users about existing policies that maintain or increase existing racial inequalities
- (7) **NEUTRALITY:** Antiracist technologies should not equate whiteness with neutrality. They are not designed for a "neutral" user but are actively designed to include people of color.
- (8) **DIFFERENCE:** Antiracist technologies do not capitalize upon biological differences (i.e. different skin tones) to activate or make a technology work better for one racialized group versus another. As such antiracist technologies act based on the lack of biological differences between all races.
- (9) **ADDRESSING:** Antiracist technologies are those whose purpose is pursued while addressing racial inequality, not neglecting the racism that exists for personal motives
- (10) **EQUITY:** Antiracist technologies express the idea that racial groups are equals and none needs developing, and support policies that reduces racial inequity. Antiracist technologies do not conflate technological progress for social progress.
- (11) **BIAS:** Antiracist technologies ask users to acknowledge their privileges and power, and where these privileges came from. Antiracist technologies also help people identify their own ethnic racist as ethnic biases can be less apparent and be harder to identify/realize.
- (12) **CLASS:** Antiracist technologies have designs that penetrate disunity between classes and bridge resource/opportunity gaps; they are accessible to people from all socioeconomic groups - affordability and accessibility are not obstacles to anyone. They will not enrich a powerful class at the expense (or even the enrichment) of another.
- (13) **ACCOUNTABILITY:** Antiracist technologies keep leaders, institutions, and people in positions of power accountable; Additionally technological designers and creators understand their accountability and take responsibility for any biased results of the technology they created
- (14) **PROFIT:** Antiracist technologies are not centered around profit and do not promote profit maximization as a progressive movement. Antiracist technologies change the measure of success from monetary values. They seek to change or avoid "the game" and may often "go down doing good," even as they seek alternative incentives, accolades, and social structures.
- (15) **DATA:** Antiracist design plays with visibility and invisibility, giving users control over their visibility to others and to opt-out of technical systems. They offer transparency and agency in how data is used; they do not sell user data and offer the highest protections as the default setting. Being seen/present doesn't mean you are understood or respected.
- (16) **DATA BIAS:** Antiracist technologies strive to use balanced datasets that are as representative as possible, to weed out bad data that's biased, or detect biased data that others might be utilizing, and work with all data prioritizing antiracism and equity regardless of how biased or unbiased we perceive it to be
- (17) **REDLINING:** Antiracist technologies actively undo technological redlining and actively protect social groups when doing any sort of local statewide distribution.
- (18) **SPEED:** Antiracist designers move slowly with purpose. They know that just because you can doesn't mean you should. They do not neglect ethical or privacy concerns in preference for cheapness or quickness. Evaluation may need longer than just a few weeks to see if a technology is "working".
- (19) **SOLUTIONISM:** Antiracist technologies surface deep solutions. They recognize nuance and progress and break echo chambers. They do not implement surface-level solutions for deep-rooted issues. Evaluations are ongoing and provide space for users to define how they are using technologies to resolve local problems.
- (20) **HISTORY:** Antiracist technologies investigate and understand the social impact of your technological predecessors, actively removing the racist qualities of past iterations
- (21) **SPACE:** Antiracist technologies must take into consideration racial equity between integrated and protected racialized spaces "which are substantiated by antiracist ideas about racialized spaces."
- (22) **EVOLUTION - anti racist technologies** are iteratively evaluated to ensure anti racism remains at the core of each development
- (23) **TRANSPARENCY:** People who develop anti-racist technology must be transparent about their processes (who's creating the tech, what data is being used, etc.) to ensure that there is an accessible avenue for feedback. This also means clarifying what steps are being taken to make tech more equitable
- (24) **JOY:** Anti-racist technologies seek and celebrate joy among communities; they aim to "couple critique with creative alternatives that bring to life liberating and joyful ways of living in and organizing our world."
- (25) **CO-LIBERATION - Antiracist technologies** do not simply enroll "allies," but understand that racism affects everyone, such that a push against racism is a push towards the liberation of all.
- (26) **EXPERTISE.** The people we study are experts on their own experience. Designers are not the experts. They should be compensated and respected accordingly

- (27) FAIR TREATMENT. Regardless of who, what, where, whenever we ask someone to provide their expertise or feedback, they must be treated and compensated accordingly.
- (28) CONFIGURATION. Anti-racist systems ask us to conduct heterogeneous engineering with new and different communities of people, machines, and objects in the world.
- (29) IMAGINARIES. Anti-racist systems center alternative futures produced by non-hegemonic, marginalized groups as possibilities for human-machine configurations.
- (30) MUTUAL EVALUATION. The development of anti-racist systems should inspire users and designers to change and grow through a mutual process, and respect expertise on all sides.

A.1 The Premises Re-Articulated: The Thou Shalts of Anti-Racist HCI

- Thou shalt recognize and counteract racist technologies and policies
- Thou shalt analyze, redistribute, and decentralize racialized power structures
- Thou shalt use "glitches" as beacons for systemic issues
- Thou shalt question false universals, like "flesh colored band-aids"
- Thou shalt accept the fact that anti-racist technologies may not thrive in racist worlds

A.2 The Premises Re-Articulated: The Thou Shalt-Nots of Anti-Racist HCI

- Thou shalt financially support the anti-racist technologies to help them compete in racist markets
 - Thou shalt consider whether your solution may in fact be racist or usable for racist purposes
 - Thou shalt use the power of your institutional position (i.e. in the tech industry) to embed requirements for use of technologies to support equitable ends
- Thou shalt not implement surface level solutions for deep rooted issues
 - Thou shalt not give data access to external companies or trust in "equitable" labels
 - Thou shalt not assume that technologies offer the best/only fixes.
 - Thou shalt not capitalize on and reinforce social differences and stereotypes
 - Thou shalt not shape data to support a conclusion you began with: assume that numbers are not everything!
 - Thou shalt not equate technological inventions or fiscal returns with social progress
 - Thou shalt adopt technologies and designs that promote personal and group joy, empowerment, and inclusion
 - Thou shalt convert hesitancy and fear of failure into principles to ground and guide action.