<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction: The Power of Algorithms</td>
<td>01</td>
</tr>
<tr>
<td>Chapter 1: A Society, Searching</td>
<td>04</td>
</tr>
<tr>
<td>Chapter 2: Searching for Black Girls</td>
<td>07</td>
</tr>
<tr>
<td>Chapter 3: Searching for People and Communities</td>
<td>11</td>
</tr>
<tr>
<td>Chapter 4: Searching for Protections from Search Engines</td>
<td>12</td>
</tr>
<tr>
<td>Chapter 5: The Future of Knowledge in the Public</td>
<td>14</td>
</tr>
<tr>
<td>Chapter 6: The Future of Information Culture</td>
<td>16</td>
</tr>
<tr>
<td>Conclusion</td>
<td>18</td>
</tr>
<tr>
<td>Discussion Questions</td>
<td>20</td>
</tr>
</tbody>
</table>
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Source: https://safiyaunoble.com/bio-cv/

**NOTE:** This Study Guide is only a quick glimpse into the amazing content of this book. We encourage you to support Safiya Umoja Noble and purchase Algorithms of Oppression, and use this guide as supplementary material.
Algorithms of Oppression examines the implications of digital decision making tools that deepen social inequalities. In the age of free-market capitalism, deregulation, and a shift from public ownership to private corporations, digital algorithms have the power to “reinforce oppressive social relationships and enact new modes of racial profiling” (1). Noble urges that the nearly universal application of digital decision making tools requires us to take a deeper look at what values are being prioritized (1). Whether intentional or not, “discrimination is embedded in our computer code” and the artificial technologies we are reliant on. Noble works to make the consequences of biased technology visible (1).

We like to think of big data and algorithms as unbiased, but they are quite the opposite. Algorithms are written by humans who hold all kinds of values, “many of which openly promote racism, sexism, and false notions of meritocracy” (2). Some of the very people designing and developing search algorithms promote sexist and racist attitudes at work and beyond. Meanwhile, “we are supposed to believe that these same employees are developing ‘neutral’ and ‘objective’ decision-making tools” (2).

This book is largely focused on dissecting the commercialization and co-optation of Black identities, experiences, and communities, in one of the most powerful tech companies we know today, Google (2). Noble explores the implications of digital algorithms for people who are already systematically marginalized and oppressed.
In 2015, U.S. News and World Report reported a “glitch” in Google's auto-tagging and facial recognition feature, whereby African Americans were automatically tagged as “apes” and “animals” (9). **Glitches caused by human and machine errors “are not without consequence”** and there are several instances that reveal how **“racism and sexism are part of the architecture and language of technology”** (9). In her book, Noble intends to highlight algorithmically driven data failures that detrimentally impact people and women of color. Algorithmic oppression is not a glitch, but rather, “fundamental to the operating system of the web” (10).

Information organizations such as libraries, universities, and governmental agencies are increasingly reliant “on a variety of web-based “tools” as if there is no political, social, or economic consequences of doing so” (9). In contrast to regulated information sources, **algorithmic decision making tools often lack social and human context.** With the “embrace of artificial intelligence in decision making,” we need to ask **“what is lost, who is harmed, and what should be forgotten”** (14). As a collective, there is no benefit “to organiz[ing] information resources on the web through processes that solidify inequality and marginalization” (14)

**NOTE:** This book was published in 2016. As such, some facts may not be an accurate reflection of today's search landscape. However, the learnings and takeaways remain relevant and powerful.
CHAPTER 1: A SOCIETY, SEARCHING

KEY THEMES

- Google is a commercial platform motivated by profit
- Top search engine results are often seen as objective and neutral, yet they are inextricably linked to paid advertising
- Google’s search engine perpetuates the marginalization of women and girls and people of color - people with the least social power who are most vulnerable to misrepresentation

A 2013 United Nations campaign by advertising agency Memac Ogilvy & Mather Dubai, presented “genuine Google searches” to highlight the negative public opinion about women and, perhaps unwittingly, to reveal the “incredibly powerful nature of search engine results” (15). The Google search included some of the following sexist ideas:

- Women cannot: drive, be bishops, be trusted, speak in church
- Women should not: have rights, vote, work, box
- Women should: stay at home, be slaves, be in the kitchen, not speak in church
- Women need to: be put in their places, know their place, be controlled, be disciplined (15)

It’s easy for one to think it’s not the search engine that’s sexist, but rather it’s the users of the search engines that are (15). Noble, however, wants us to think beyond sexist users and consider the search architecture itself and “the many factors that keep sexist and racist ideas on the first page” (16).
Ad series for UN Women by Memac Ogilvy & Mather Dubai

Another shocking interaction with racism in a Google search comes from a personal experience shared by Noble whereby she typed topics into Google’s search bar that she thought may be of interest to her preteen step daughter and nieces. In an attempt to engage them in conversations about things that were important to them, she searched for keywords that would reflect their interests, demographics, and information needs. To her dismay, a search on the keywords “black girls” returned HotBlackPussy.com as the top result (3). Noble was intending to “help the girls search for information about themselves” yet she “had almost inadvertently exposed them to one of the most graphic and overt illustrations of what advertisers already thought about them: Black girls were still the fodder of porn sites, dehumanizing them as commodities, as products and as objects of sexual gratification” (18).

**People put high trust in the information found in search engines, yet this information is entangled in paid advertising (38).** Information monopolies like Google have the power to organize web search results in the interest of profit. Google has the ability to promote “their own business interests over those of competitors or smaller companies that are less profitable advertising clients” (24) Even though search results exist in a highly commercialized context, the results are often “normalized as believable” and even “presented as factual” (25).

73% of search engine users reported that most or all of the information they find on the web is accurate and trustworthy (53). What happens when this so called ‘trustworthy’ information they find is racist, sexist, anti-semitic, etc.? There are material consequences for the perpetuation of stereotypes of historically marginalized groups. As Noble puts it, “structural inequalities of society are being reproduced on the internet, and the quest for a race, gender, and class-less cyberspace could only perpetuate and reinforce current systems of domination” (59).
It’s no secret that Silicon Valley, home to global tech companies like Google, Facebook, and Apple, lacks diversity. A Wired survey from 2019 estimates that **Black, Hispanic, and Indigenous people combined only make up 5% of the Silicon Valley workforce**. Meanwhile, programmer jobs that require expertise in ethnic, Black/African American, women and gender, American Indian, or Asian American Studies are non-existent (69-70). As a result, the **technologies that influence our everyday lives “are designed with a lack of careful analysis about their potential impact on a diverse array of people”** (66). In 2016, Google announced a partnership with Black Girls Code, an organization “dedicated to teaching and mentoring African American girls interested in computer programming,” with an overall goal to “ensure fuller participation [of Black women] in the design of software and to remedy persistent exclusion” (64).

**KEY THEMES**

- Silicon Valley tech companies need to focus on hiring people with a deep understanding of the histories of marginalized communities and systems of oppression.
- Stereotypes that sexualize and objectify Black women stem back to the treatment and exploitation of African women during slavery and persist on the internet today.
- Misrepresentation of Black women on the internet is tied to a greater history of White racial patriarchy.
- The internet has a powerful influence in forming opinions on race and gender in society.
Noble scrutinizes this partnership by highlighting that meeting a quota and “holding ‘future’ Black women programmers responsible for solving the problems of racist exclusion and misrepresentation” is not going to eradicate the issue on its own (65). She emphasizes the value of lived experience and the need to focus on hiring people with a deep understanding of the histories of marginalized people. It comes as no surprise that the traditional engineering curriculum of large research universities - universities that tech companies often hire from - do not include the history of media stereotyping or the nuances of structural oppression (70). Designing technology “without a detailed and rigorous study of people and communities make[s] for the many kinds of egregious tech designs we see that come at the expense of people of color and women” (70).

The perpetuation of certain narratives in search engine results reflect historically unequal distributions of societal power (71). To understand racial and gendered representations in new media, we must “draw on research about how race is constituted as a social, economic, and political hierarchy based on racial categories, how people are racialized, how this can shift over time without much disruption to the hierarchical order, and how White American identity functions as an invisible “norm” or “nothingness” on which all others are made aberrant” (71).

In 2016, Kabir Ali, an African American teenager from Virginia, tweeted a video of his Google Images search on the keywords “three black teenagers”. The results were of African American teenagers’ mugshots, perpetuating the stereotype that Black teens are criminals (80). Since then, Google has tweaked the algorithm to return more “wholesome” images of Black teens (80). Google typically denies responsibility for racial stereotyping in its products, yet this example shows that the company does have the ability to “tweak” or “fix” glitches (82). Similarly, a 2016 search for “professional hairstyles” brought up a series of white women, while a search for “unprofessional hairstyles” featured all Black women (83). Studies have shown the ways in which people of color are directly affected by these portrayals. Negative images of Black people in television, for example, can “adversely alter the perception of them in society” which leads to more racial discrimination (89).
In 2021, Google quietly updated its algorithms in an effort to promote more racially diverse results in image searches - the tech giant’s latest attempt to excise biases from the world’s most popular search engine.

The change is meant to present a variety of skin tones in image queries related to beauty, such as “beautiful skin” and “professional hairstyles,” as well as simpler people-related searches like “woman” or “happy family”.

While this long-overdue change is a step in the right direction, it’s not enough. When asked about next steps, the California-based company said it hopes to improve diversity of all people-related search queries but that the process requires many steps and it will launch improvements when they are ready.

Stereotypes that sexualize and objectify Black women stem back to the treatment and exploitation of African women during slavery (92). According to bell hooks in her essay, “Selling Hot Pussy” in Black Looks: Race and Representation, “women’s bodies serve as the site of sexual exploitation and representation under patriarchy, but Black women serve as the deviant of sexuality when mapped in opposition to White women’s bodies” (93). These practices in tandem with an understanding of how racial and gender identities are organized by Google, allow us to make sense of the trends that render “women’s and girls’ sexualized bodies as a lucrative marketplace on the web” (93). Back in the 1800’s, Sara Baartman, a South African woman exploited for her ‘exotic’ body was put on display “for entertainment and biological evidence of racial difference and subordination of African people (94). Noble argues that the “traditions of displaying native bodies extend to the information age and are replicated in a host of problematic ways in the indexing, optimization, and classification of information about Black and Brown bodies on the commercial web” (94-95). Other stereotypes used to besiege women were the Sapphire, the Jezebel whore, and the Mammay (98). During slavery, dehumanizing stereotypes like these were used to justify the sexual abuse of Black women by their property owners (96). The patriarchy’s control of the image, concepts, and values of Black women still exists today on the web. In fact, the rise of technology has brought with it “more commodified, fragmented, and easily accessed pornographic depictions that are racialized. In short, biased traditional media processes are being replicated, if not more aggressively, around problematic representations in search engines” (100).

The internet’s power and influence in forming opinions on race and gender can’t be overlooked (105). The men who make up the majority of the technological workforce, whether intending to or not, have further consolidated their social, political, and economic power in society to influence society’s perception of Black women (107). Men have shaped technology “to the exclusion of women, especially Black women” (107).
On June 17, 2015 in Charleston, South Carolina, White nationalist Dylann “Storm” Roof massacred a group of African American Christian worshippers at Mother Emmanuel African Methodist Episcopal Church, marking one of the most “heinous racial and religious hate crimes of recent memory” (110). Twitter user @HenryKKrinkle tweeted that a “racist manifesto” had been found at www.lastrhodesian.com, which documented many of the thoughts that informed the killer’s understanding of racial dynamics in the U.S. (110-111). According to the manifesto, Roof allegedly Google searched “black on white crime” to make sense of the Trayvon Martin story, a young African American teenager who was killed and whose killer, George Zimmerman, was acquitted for murder (111). Roof discovered information that confirmed a “patently false notion that Black violence on White Americans is an American crisis” (111). Noble finds it compelling that Roof’s alleged Google search did not lead him to Federal Bureau of Investigation (FBI) crime statistics on violence in the U.S. which show that most violence against white Americans is committed by white Americans (115). In fact, the Google search didn’t lead to any information that “dispel stereotypes trafficked by White supremacist organizations” (115). The information commercial search engines provide at the top of a page can clearly have detrimental impacts (115).
While there isn’t enough evidence to prove a direct correlation between search results and murder, we can’t ignore the fact that Roof reported that his own understanding of race “was cultivated online by searching a concept or phrase that led him to very narrow, hostile, and racist views” (117).

Moving forward, we need a way to “reframe, reimage, relearn, and remember the struggle for racial and social justice to see how information online in ranking systems can also impact behavior and thinking offline” (118). The ways in which search algorithms prioritize information sources for profits is compromising our ability to comprehend complex histories and realities (118).

### Key Themes

- Private corporations, rather than government funded and regulated institutions, have a large say in information production and what is “forgotten” online.
- Women face life changing consequences because of the leakage of sexually explicit content, either from the porn industry or from private sources. There is no escaping the past, as with the Internet, everything follows you.
In 2013, a middle school teacher from California was determined “unfit for her classroom” because old footage from her 9-month career in the pornography industry was discovered on the Internet (119). She was fired, even after she testified that she engaged in this work due to financial hardship (119). In 2011, a St. Louis high school teacher was fired because a student discovered her involvement as an exotic dancer in the 90’s (119). In a case of “revenge porn,” an award-winning high school principle was demoted after her ex-husband released sexually provocative photos of her that they took over the course of their marriage (120). In 2010, a website called IsAnyoneUp.com allowed users to post anonymous nude images of other people that included name, address, and social media profiles (120). Eventually, thirty-four states enacted revenge porn laws that address the distribution of sexually graphic images without consent (120).

Google exercises considerable control in what can circulate in perpetuity and what can be forgotten through deleting or unlisting “bad information” (123). *The right to be forgotten,* i.e. the right to have info about yourself be taken down from the internet, is an important tool for thinking about how misrepresentation can be impeded or stopped (123). Rights to anonymity include the right to be “who we want to be, with a sense of future” as opposed to being “locked into the traces and totalizing effect of a personal history that dictates, through the record, a matter of truth about who we are and potentially can become” (126). The endless archive of human action in the digital record disproportionately harms women and people of color. Like in the examples above where women were fired from their jobs, resulting in financial hardship. Google has consistently argued that the “right to oblivion” laws unfairly shift the record of “real human activity,” even when it is painful (130). Noble is ultimately calling for increased regulation, as the examples in this book prove that deep machine learning algorithms and AI have detrimental effects on society (133). *We need greater transparency as opposed to continuing to make the neoliberal capitalist project of commercial search opaque* (133).
In 2014, a group of Dartmouth students created “The Plan for Dartmouth Freedom Budget: Items for Transformative Justice at Dartmouth,” which included the ban of the terms “illegal aliens,” “illegal immigrants,” “wetback” and any other racially charged terms on Dartmouth-sanctioned materials and locations (134). They demanded that “the library search catalog system shall use “undocumented” instead of “illegal” when referring to immigrants (134). The effort to reclassify undocumented immigrants is a part of a long history of “naming members of society as problem people” (135). Information systems, which Noble argues extend from state-supported organization systems like the Library of Congress or internet, participate in “legitimizing the ideology of dominant groups to the detriment of people of color” (136). Nicholas Hudson, researcher at the University of British Columbia, found that during the Enlightenment, Europeans constructed “imagined communities” (136). The mental image of a ‘community of like-minded individuals’, sharing a ‘general will’ or a common national ‘soul’ was materialized through the expansion of print culture that gave access to a common literary tradition (136-137).
Classification systems can therefore be considered as part of the scientific approach to study people and societies, “and they hold the power biases of those who are able to propagate such systems” (137).

Historically, Native peoples were classified as “savage” to secure the European’s position as the “superior race”. According to Noble, “racial classification emerged in the eighteenth and nineteenth centuries as a paradigm of differentiation that would support the exclusion of native and African people from social and political life” (137). Such classification had material consequences - for a while, only White men were legally allowed to vote or own property. These laws were “assumed and legitimated” by classification systems (137). All in all, those who design the systems, classification or technical, have the power to prioritize their own interests (138-139). Internet information systems have adopted historical classification practices that are riddled with racial, gendered, and classist bias. The patriarchy, similar to racism, was “the fundamental organizing point of view of the Library of Congress Subject Headings” (LCSH) (139). Headings such as “Women as Accountants” instead of the preferred “Women accountants” were “consistently an aberration to the assumed maleness of a subject area” (139). LCSH also used problematic naming conventions like “Oriental” instead of “Asian” and placed Christianity at the top of the religious hierarchy, marking other religions as more “primitive” (140). Hope A. Olson, an Associate Dean and Professor at the School of Information Studies at the University of Wisconsin, Milwaukee, found that “the ordering of information provided in classification schemes tends to reflect the most mainstream version of these relationships because classificatory structures are developed by the most powerful discourses in society” (140). “The result is the marginalization of concepts outside the mainstream” (140). Mainstream, in this context, refers to White, heterosexual, Christian, and middle-class. The representation or misrepresentation of oppressed people often reflect and also maintain “the social contexts within which the subjects exist” (144).

Internet platforms prioritize dominant narratives and commercial interests, preventing their ability to serve as a democratizing tool for the public. We need to ensure that the “public has access to the highest quality of information available” (152).
As our information environments are increasingly controlled by corporations, public policy and regulations are more important than ever (12). In 2010, the U.S. Federal Communications Commission (FCC) implemented a ten-year broadband plan to make high-speed internet the common medium of communications in the United States (153). The goal of the plan was to help Americans’ ability to access vital information (153). The issue with this plan is that it doesn’t mention anything about the “role of search engines in the distribution of information to the public” (153). In other words, there are no efforts to regulate the type of information Americans are accessing and whether it’s viable or not. According to Noble, “access to high quality information, from journalism to research, is essential to a healthy and viable democracy” (153). Journalism and librarian undergo extensive vetting practices, including fact checking and curating information for the public according to professional codes of ethics. Privately funded corporations, on the other hand, are not held up to the same standards, even though these are the primary source of information for a lot of Americans (155).
Google's monopoly on information has caused several concerns. In 2009, Google embarked on a project to digitize over ten million books published around the world. France and Germany found this project to be “an infringement on the public good”, as the U.S.-based company would now have ownership of their nation’s works (157). Google’s digitization of a large percentage of the world’s heritage books means the world’s history, culture, and art will “be under the control of a single corporate entity” (157).

The gap between those who have access to modern information and technology and those who don’t, is known as the digital divide (160). These narratives emphasize three key aspects of disempowerment that have led to the divide, particularly between Whites and Blacks: 1) access to computers and software, 2) development of skills and training in computer technologies, and 3) Internet connectivity (160). What’s missing from this discourse are the nuances of power relations that precipitate such unequal access to social, economic, and educational resources. Thus, the context for discussing the digital divide in the U.S. is too narrow a framework that “focuses on skills and capabilities of people of color and women, rather than questioning the historical and cultural development of science and technology and representations prioritized through digital technologies, as well as the uneven and exploitative global distribution of resources and labor in the information and communication ecosystem” (160). In simpler words, providing universal access to the Internet and closing the digital divide does not fix the uneven racial and gendered power relations (161). Noble calls for a “prosumer” participation, as a way of conceptualizing how Black people can move beyond being simple consumers of digital technologies to producers of technological output” (161).

Silicon’s Valley lack of a “diverse and critically minded workforce” on critical race and gender theories “impacts its intellectual output” (163). African American identities are constantly exploited as a commodity in a network that “traffics racism, sexism, and homophobia for profit,” yet the onus of change is on their backs to learn how to code, “as if that alone could shift the tide of Silicon Valley’s vast exclusionary practices in its products and hiring” (165).

Bridging the digital divide between Blacks and Whites has not improved economic conditions. In fact, between 1984 and 2007, the wealth gap quadrupauled, making Whites five times richer than Blacks in America (167).
This gap is not the result of “moral superiority,” rather it is directly linked to biased algorithmic decision making that excludes Blacks, Latinos, and Native Americans from high paying jobs in the tech industry. It’s also a consequence of “digital redlining” in housing and educational markets (167). **We need more scrutiny on how artificial intelligence is implicated in “reversing decades of struggle for social, political, and economic equality” (167).** Claims that society is more equal today are undermined by data that prove a decline in access to home ownership, education, and jobs, “especially for Black Americans” (167).

**CONCLUSION**

Noble’s hope for this book is to “directly impact the many kinds of algorithmic decisions that can have devastating consequences for people who are already marginalized by institutional racism and sexism” (13). In today’s world, we have more data and tech than ever and more “social, political, and economic inequality and injustice to go with it” (171). The push to close the digital divide has particular impacts on Black/African Americans when “divorced from the context of how digital technologies are implicated in global power relations” (171).

To illustrate an example of these implications, Noble shares her interview with Kandis, a Black woman business owner in the U.S. whose business was rendered invisible because of the Internet. (172) She owned a hairdressing business near a University that was extremely popular through word of mouth within her Black community. With changing policies around affirmative action, the Black population in her community declined and Kandis recalled suddenly becoming a minority. Her usual customers no longer lived in the area and would be forced to drive thirty minutes to reach her, creating an unfair financial burden for them. To make matters worse, Kandis’ business was suffering because she wasn’t advertising on the web.
The Internet and Yelp were telling people that Kandis did not exist (175). Kandis explains that “algorithms don’t take into consideration communities of color and their culture of trusting in the web with our personal information out like that” (175). Yelp employees were not diverse and were not able to consider the needs of a minority and their language. Kandis had little control over Yelp’s algorithm and was unable to assert “her ability to be racially and gender recognized - a type of recognition that is essential to her success as a business owner” (179). Yelp’s attempts at creating a “colorblind algorithm in lieu of human decision making” had life changing consequences. In the case of Kandis, what the algorithm says and refuses to say about her identity and the identity of her customers has real social and economic impact” (179).

Automatic human decision making has seemingly disavowed our responsibility for the negative consequences of it. **We need public funding and adequate information policy to protect the rights to fair representation of all people, not just ‘default identities’ online.** Without public funding and policy, “an escalation in the erosion of quality information to inform the public will continue” (181).

“I encourage us all to take notice and to reconsider the affordances and the consequences of our hyper reliance on these technologies as they shift and take on more import over time. What we need now, more than ever, is public policy that advocates protections from the effects of unregulated and unethical artificial intelligence” (181)
1. Have you ever encountered negative stereotypes and/or misinformation about people of color on the web? How did this effect you?

2. How has this book changed the way you navigate the internet?

3. How much do you think search engines have progressed since this book was released in 2018?

4. What are some real-life impacts of negative stereotypes of Black women and people of color on the internet?

5. When you envision an anti-racist search engine, what does it look like? Do you think it’s possible for a commercial platform like Google to be anti-racist?