Forbidden Fruit
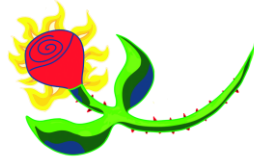
Impacts of White Supremacist Patriarchal Culture on Women of Color and the Gender Divide in Technology

for
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December 13, 2021

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Abstract

Reliance upon technology in daily life has forced industries into a new age of advancement to keep up with demand. There is a severe shortage of skilled workers in the fields of Computer Science (CS) and Information Technology (IT) and efforts toward professional recruitment and retainment have substantiated little progress. Despite the need for workers, women, notably women of color, remain vastly underrepresented in these fields compared to men. Many past studies on the gender divide in tech have reported similar findings; however, none have examined how the history of white supremacy and white patriarchal culture in the U.S. has shaped and suppressed the opportunities available to minority women today, including but not limited to the enslavement of Africans and gendered violence on African/ Black women, removal and displacement of Indigenous people from their native lands and male centered cultural values, manifest destiny and the belief in White superiority over Latinos, and sexual fetishization of Asian women from war propaganda and popular media.

While some of the root causes of discrimination toward women of color are invaluable to understanding their individual struggles working in CS and IT today, there are factors all women deal with because of gender bias: Domestic stereotypes, harassment, unconscious bias, and micro-aggressions.

The presence and influence of technology in the U.S. is only going to strengthen over time and has already drastically altered how people interact, communicate, and work. Instead of complying with the existing social structures that serve and benefit the few, this professional sphere that touches so much can help develop a more equitable world through diverse representation in corporate boards of directors, accountability, and relevant diversity and inclusion initiatives.

The actions of the past shape the future. Although progress has been made regarding gender equity it falls sorely behind other areas of advancement and signals that it is not only a problem in the job sector, but culturally and systemically.

Keywords: Technology, gender, white supremacy, patriarchal culture, United States

Introduction

A modern Eden has been discovered through the reliance upon automated, electronic, and cyber labor known as the 4th Industrial Revolution, or Industry 4.0 (Maghazei & Netland, 2017). Instead of fantastic beasts and lush plants this new garden offers a power previously thought attached only to the hands of God: Creation.

Through the fields of STEM (Science, Technology, Engineering, Math) humans have invented technology which can convert abstract language into code which machines process into content that live on the Internet of Things (IoT): The network of physical objects such as laptops, cellphones, e-readers, etc. used to access and communicate in this digitized Promised Land (Nick, Kovács, Kő, & Kádár, 2021). The rapid rise of IoT and Industry 4.0 has triggered a dramatic demand for qualified Technology professionals. According to the U.S. policy Institute, the Pew Research Center, the number of STEM bachelor's degrees awarded in the U.S. from 2010-2018 grew by 62% compared with 20% growth for all degrees, and the number of bachelor's degrees awarded in computer and information sciences doubled (101% increase) (Fry, Kennedy, & Funk, 2021). The U.S. Bureau of Labor Statistics reported that the fields of Computer Science (CS) and Information Technology (IT) are expected to grow at an average rate of 13% by 2030, surpassing the national average of all other job sectors (U.S. Bureau of Labor Statistics, 2021). With a garden as large as IoT caretakers must be appointed to tend to it, however, men disproportionately outnumber women despite an even divide between genders in the college-educated workforce (Fry, Kennedy, & Funk; U.S. Census Bureau, 2019).

Purpose

The purpose of this research is to highlight the racial and gendered inequities women and minorities face in the U.S. and the impact that they have had on job opportunities and retention in the Tech sector.

Methods

Sources used in this paper were gathered from reputable news organizations, scholarly websites, articles and scientific studies.

Problem

See Figure 1 at the end of this section for a visual representation of the U.S. Tech workforce by race and gender.

Women, especially women of color, are underrepresented in IT and CS. The non-profit organization AnitaB has collected and analyzed data on women working in Technology for over ten years. In their most recent annual report, "Top Companies for Women Technologists 2019-2020", statistics showed that 28.8% of technology workers are female, 14.2% identified as White, 9.6% Asian, 2.2% Black, 1.7% Latina, and 0.1% Native American (AnitaB.org, 2020). This statistic is slightly higher compared to findings from Pew, which stated that only 25% of Computer Scientists are female (Fry, Kennedy, & Funk, 2021; see also National Science Foundation [NSF], 2021). Black and Latina workers combined make up only 4% of women in tech even while they make up 11% and 17% of total employment in the U.S. (AnitaB.org; Fry, Kennedy, & Funk, 2021; see also U.S. Census Bureau, 2019). Recent political movements within the last five years like Black Lives Matter, #MeToo, and reproductive rights demonstrate

progress toward change while also proving that gender stereotypes and male authority continue to hold power over what women supposedly can and cannot do in society.

FIGURE 1

Tech workforce by race and gender

Tech Workforce by Race and Gender
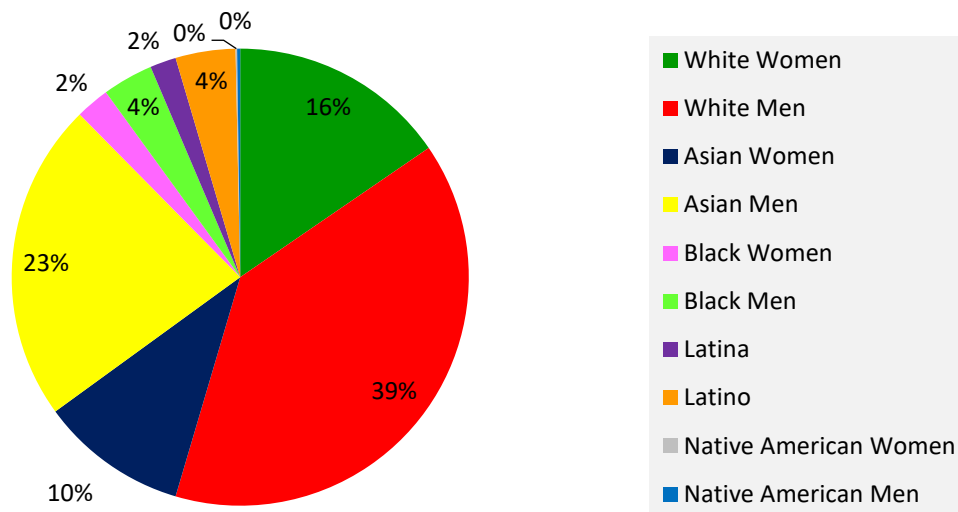
Notes. Data represented in this figure is based off of AnitaB.org, "2020 Top Companies representation of women and men by race/ethnicity" (2020), and has been rounded up to the nearest percentage point.

Domestic Stereotypes

Women have been subjugated by virtually all class societies, mentioned by Rodrigue through the cultivation of male heir lineage, insistence and obsession with female premarital chastity, and the exclusion of women from public life (Rodrigue, 2004). Religions like Christianity have helped to establish male prominence through myth and origin: The first woman Eve is recognized to be a lesser part of Adam because she was made from his rib, in his likeness, and for Adam. Eve was ultimately the one to disobey God because she was not as devout as Adam and was cursed to bear Adam's children and to obey only him. This domesticity of women has created a precedent for male groups in power to validate and hold onto their positions of authority; especially relevant to the male-dominated fields of CS and IT.

Women have been pressured or obligated by society to fulfil familial or domestic roles in lieu of an independent career. The Women's Bureau found that top occupations held by women in the U.S. in 1920 were Teachers, Typists, Secretaries and Laundresses (Women's Bureau, 2020). In 2019, after one hundred years of civilized and technological advancement, the top careers populated by women were Teachers, Nurses, Home-Health Aides, Secretaries and Cashiers (Women's Bureau). This trend toward low-wage, non-managerial positions in childcare and hospitality reflect the historic timeline of gender inequity where women are relegated to raising

children and caring for the home, even while they currently earn 57% of all bachelor's degrees and make up 50.2% of the college educated workforce (Fry, Kennedy, & Funk, 2021). Women are attempting to break out of the passive social roles inscribed unto them and are blocked by the same patriarchal structure which cursed Eve to a life of eternal domestic servitude when she chose knowledge over blind obedience. Technology is the new forbidden fruit that can release woman from her sheltered existence, however, it is closely monitored behind heavenly gates.

Harassment

All research on the gender divide in CS and IT found that harassment was a major contributing factor to the negative experiences and retention rates of women working in Technology. The prevalence of men over women creates an environment of acceptance of abusive behavior targeting women, recounted by eyewitnesses and major U.S. news outlets.

Sexual harassment and assault go unpunished due to the exclusive "boys club" culture of the Tech world. According to Women Who Tech, 43% of female participants cited instances of sexual harassment, and 70% felt that they were treated differently compared to male colleagues because of their gender (Women Who Tech, 2020). The Wallstreet Journal recently released an article on the gaming giant Activision and current CEO Bobby Kotick's failure to report several instances of sexual harassment and assault to board members, including the sharing of a photo of a female employee's vagina at a company party, staff-organized trips to strip clubs, inappropriate touching and comments on female employee's appearances in the workplace, even an instance of rape (Grind, Fritz, & Needleman, 2021). A lawsuit against one of the largest tech corporations in the world, Microsoft, mentions similar assaults on female employees; An intoxicated male employee pulled down the shirt of a female employee at a company function, a female employee was groped and sexually harassed by a male employee at team happy hour, a company party with scantily clad women dancing on tables, and a female intern who was raped by a male intern and forced to work alongside him even after reporting the incident to her supervisor and HR (Lieff Cabraser Heimann & Bernstein, 2018). Victims of abuse often remain silent or don't feel comfortable talking to human resources due to a lack of consequences for the perpetrator and the fear that their allegations will not be taken seriously, these examples validate that silence.

Unconscious Bias & Micro-Aggressions

Microaggressions are the (sometimes unintentional) racist or biased comments directed toward marginalized groups like women and people of color. Earles points out that they are often hard to prove or identify due to their fleeting nature, mentioned in conversation or on the fly (Earles, 2020). Micro-aggressions are a systemic problem along with unconscious or implicit bias, the internal prejudices people hold against others based upon common stereotypes. Unconscious bias and micro-aggressions are commonly encountered by female tech workers due to work environments populated by a majority of White males.

Women of color are four times as likely to experience microaggressions than White women (Burns, Huang, Krivkovich, Rambachan, Trkulia, & Yee, 2021). Participants in the Georgetown study, "Gender Divide in the Tech Sector", reflected on their experiences with microaggressions in the workplace and mentioned being interrupted when they spoke, their ideas not being heard or glossed over in favor of a male colleague's, men expressing the same ideas and having the ideas suddenly be valued, and having to prove themselves and their technical skills repeatedly, even as project managers or experts on their teams (Earles).

The impact of small, daily critiques that could be encountered at any time is not to be underestimated, and feeling unsupported has caused many female tech workers to leave the industry. According to Scott, Kapor Klein, & Onovakpuri, 20% of women left jobs due to being given work below their job level, over 30% of White and Asian women left due to colleagues taking and/or receiving credit for their work, and 30% of undereppresented women left after being passed up for promotions they were qualified for (Scott, Kapor Klein, & Onovakpuri, 2017). Retention of women in Tech is a serious problem, and seemingly minor interactions that perpetuate unconscious bias is a major contributing factor.

White Supremacy Culture

War, territorial conflicts, and immigration agendas all contributed to the promotion of White culture and negatively affected the racial groups they targeted. This is key in connection with minority representation in CS and IT because the world of Technology can be likened to that of pre-colonial America; As digital technologies continue to expand into new territories and advancement, so do opportunities for human creativity, knowledge, and prosperity for all (Nick et al., 2021).

The National Museum of African American History & Culture defines White Supremacy thusly:

> White supremacy is an ideology where white people are believed to be superior to nonwhite people. This fallacy is rooted in the same scientific racism and pseudo-science used to justify slavery, imperialism, colonialism, and genocide at various times in throughout history. White supremacist ideologies and their followers continue to perpetuate the myth of white racial superiority (National Museum of African American History & Culture).

Jen Okun emphasizes that white supremacy was used by early European settlers to unite White immigrants of different nationalities against the Indigenous and enslaved people who outnumbered them in the U.S. through one common denominator: White skin (Okun, 2021). White supremacy was instrumental in the creation of a gendered, racialized hierarchy of power that ensured white male elites remained on top, a structure that endures today despite the progress made in civil rights and gender equality (Okun; see also Pulido, 2015). Technology can transcend old power structures built for White males, and history can inform White allies of the inherited trauma and racial stigmas minorities in the U.S. must confront every day.

Early Key Historical Events Promoting White Supremacy

The historical events mentioned below are individually significant to Native Americans, Latinos and Asians in the U.S. and are meant to show how White supremacist ideals have targeted and affected different races over time. These events were chosen because of their prominence and familiarity in society and in no way constitute an exhaustive list of bias against minorities.

- 1830- Passage of the "Indian Removal Act" which legalized the annexation of Native Americans from their natural homes (Drexler, 2019; Indian Removal Act, 1830). This event culminated in the loss of thousands of Native American lives to disease and starvation, commonly referred to as the "Trail of Tears" and gave Whites unfounded legal claims to Native lands which sparked the cotton boom and steep demand for Black and/or African slaves (Saunt, 2020; Beckert, 2014).

- 1848- The Mexican American War and the Treaty of Guadalupe Hidalgo are pivotal cumulative events of Manifest Destiny, the American belief of White superiority and divine right to cultural ownership and expansionism of the North American continent (Diaz, 2001). The attainment of Mexican territory gave rise to Mexican immigration to the U.S., which the railroad and mining industries viewed as a source of cheap labor to do the work, "no white man will do" (Romero, 2014; Molina, 2006).

- 1875- "Page Law" effectively banned Asian women from immigrating to the United States, operating under the assumption that all Asian women immigrants were prostitutes due to a group of them traveling without husbands (Kramer, 2021; Lang & Cachero, 2021; see also Page Law, 1875).

Women of Color in CS and IT
See Figure 2 at the end of this section for a visual representation of the U.S. minority population by race and gender

Prior studies on gender inequality in CS and IT have noted the disparity between Whites and Women of color in the field but have not analyzed the effects historic White supremacist acts have had on the present and future job prospects of minorities. CS and IT are the fastest growing job opportunities in the U.S. with a current lack of, and demand for, qualified professionals. Despite this urgent need minority women continue to be severely underrepresented, and based upon systemic racism and gender bias it can be reasonably assumed that White supremacy has a large part to play in this misrepresentation.

Native American

When scholars have studied minority women in Computer Science, the focus has been on Black and/or Latina women (Varma & Galindo-Sanchez, 2006). Native Americans are often placed into the category of "other" or forgotten entirely because of their smaller population size (Varma & Galindo-Sanchez). This tendency towards exclusion mirrors the historic treatment and exploitation of indigenous people.

The 2020 U.S. Census asserts that Native Americans now account for 2% of the population, with Native American women making up 50% of all Native Americans (U.S. Census Bureau, 2019). Native people are some of the lowest represented in the IT industry: 0.1% female and 0.2% male respectively (AnitaB.org, 2020).

The cultural responsibilities placed upon Native American women may also contribute to their low numbers in CS and IT, inferenced in the article "Native Women in Computing" (2006):

> "They are likely to live in what has been called "two worlds": the world of Native American ethos, which holds that sharing, generosity, and thinking as a group contribute to tribal community survival, and the world of American ethos, which values independence, individualism, and competition to enhance individual success... Native American women hold family together by taking care of elderly family members and/or children. They are responsible for exposing children to their traditions and ceremonies, and teaching Native American languages (Varma & Galindo-Sanchez)".

The Tech industry is notorious in media headlines for rampant gendered harassment and discrimination against female workers. While Native women contend with White stigmatization based upon their cultural heritage, they must also balance the familial duties expected of them both from tradition as well as Western colonization.

The article "Decolonizong VAWA 2021: A Step in the Right Direction for Protecting Native American Women" notes the impact colonization has had on traditional Native matriarchal, egalitarian power structures[1]: "Hierarchy of authority did not exist within Native communities… Patriarchy has given men more power and control over Native women, which in turn, has significantly impacted women's roles in the community" (Weaver, 2009 cited in Gilbert et al., 2021). Rosay reported that more than four in five American Indian and Alaska Native women (84.3%) have experienced violence in their lifetime; 56.1% have experienced sexual violence, 55.5% physical violence by an intimate partner, 48.8% have experienced stalking, and 66.4% have experienced psychological aggression by an intimate partner (Rosay, 2016). These acts against Native women are often from people outside of their communities, a startlingly 97% of victims experienced acts of violence from non-Indigenous people (Rosay). The blatant abuse of Native women is only second to African-American women, tolerated because of the U.S.' historic violent tendencies toward Indigenous people. Cultural responsibilities combined with colonialism have made it difficult for Native women to enter the fields of CS and IT, and have damaging stereotypes attached to female tech workers.

African American

Slavery in the U.S. was a direct descendant of White supremacy, and African/ Black Americans were (and still are) heavily affected by it, notably in Tech. Black and/or African Americans make up 15% of the U.S. population, and Black women account for 52% of Black Americans (U.S. Census Bureau, 2019). Black women represent 2.2% of the IT workforce compared to 3.3% of Black men (AnitaB, 2020). White mass media has perpetuated negative stereotypes of Black women, influencing job prospects and retention in Tech.

Slave owners and medical establishments distinctly abused Black women for their reproductive capabilities well into the twentieth century (Prather et al., 2018). White dominant commercial culture continued to profit off of African American women through the depiction of "Mammy", explained by Pilgrim: A racial caricature of female black slaves that were the embodiment of White child rearing and house-keeping, who did not view their enslavement as an infringement upon their human rights and freedoms, but as a loving service performed with relish and gratitude to the higher Whites that owned them (Pilgrim, 2012). One of the most famous commercially successful Mammies was Aunt Jemima, the ageless "just-add-water" pancake queen of the South, who was very recently rebranded only after multiple nation-wide protests against police brutality and systemic racism against Blacks (Diaz, 2021; see also Patton, 1993; Pilgrim).

The likeness of Mammy (Aunt Jemima) and all the character has stood for has followed Black women into STEM, negatively influencing how fellow scientists and coworkers judge their capability to perform their job when it is not related to cooking or cleaning. According to Williams, Phillips & Hall (2014): "Black women (76 .9%) were more likely than other women to

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[1] "It should also be noted that there are over 500 federally recognized tribes in the U.S. (Wasserman, 2004 cited in Gilbert et al., 2021), each with their own traditions, cultures, and beliefs, and therefore, they should not be treated as a monolith (Gilbert et al.)."

report having to provide more evidence of competence than others to prove themselves to colleagues (Latinas: 64.5%; Asian-Americans: 63.6%; White women: 62.7%)" (Williams, Phillips, & Hall, 2014). Rankin, Thomas & Erete highlights the experience of a Black woman studying CS in Undergrad at a PWI (Predominately White Institution) where she was working on a group assignment with all White males who refused to listen to her ideas:

> …We were working on the project and we couldn't get it to work and I suggested approaching it in a different way and they were like no, no, no, no, no, no. And I was like okay, well, we can keep doing what you're doing, but I'm pretty sure this is not going to work. And like in my head, I knew the way they were trying to do it wasn't going to work, but I wanted to be a team player. I had done pitched something else and they said no. So I was like okay, but it was getting closer and closer to the deadline so I was like you know what, whatever. So I went home and I basically went – like recreated our project and did it all by myself, like the way I thought it would work. Then when I got it to work, I brought it back to the next team meeting we had, they were still struggling, trying to get their thing to work and I knew it wasn't going to work the way they were trying to do it, so I showed them what I did. And then they were like 'Oh my gosh, this is so great, this is so great. Why didn't we think of this the first time?' ...I was like 'Well, I tried to say it.' And I'm like 'Yeah, well, I tried to say we should take it this way' and then even then when I showed them something that was working, they were still like 'Oh, you know, yeah, this is kind of like what I said that one time.' And I'm like 'No, it's not (laughs). I'm not even going to let – I'm not going to let you do that.' But like that whole experience was really, really frustrating for me. (Rankin, Thomas, & Erete, 2021)

All women in CS experience some form of doubt of their ability to perform their job, however, prior survey findings combined with racial Mammy portrayals of Black women in media and marketing further substantiate the claim that Black women specifically must prove their competence more than other women of color or Whites in CS and IT.

Latina American[2]

Latinos as sources for low-wage, unskilled labor grew from the White supremacist belief of White dominance over people of color, specifically targeting Mexicans during the Mexican-American War and the resulting influx of Mexican migrants. U.S. companies took advantage of this position for cheap immigrant labor, and this stereotype has followed Mexican and Latino workers into present-day, highlighted in the low numbers of Latinas working in Tech. Hispanics or Latinos make up 18% of the U.S. population and Latina's account for 50% of Hispanic/Latino Americans (U.S. Census Bureau, 2019). Latinos account for 5.6% of the CS and IT workforce and Latina women make up 1.7% compared to 3.9% of men (AnitaB, 2020).

The Bureau of Labor Statistics found that Latinos are overrepresented in several service and blue-collar industries: "Painters, construction and maintenance 56%; miscellaneous agricultural workers 54%; and maids and housekeeping cleaners 49%" ((U.S. Bureau of Labor Statistics [BLS], 2020). Latinas especially (60%) worked in two major occupational groups: "Service and sales and office occupations—compared with 54% of Blacks, 47% of Whites, and 40% of

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[2] The term Latina broadly encompasses all women whose ethnic background emerges from Latin America or who have lived in a Spanish-speaking country (Tellez). "Latina" was used in all referenced materials and to maintain consistency Latina is used here, however, the historical information included in this section relates specifically to the Mexican American War and Mexican Americans, a subset of the Hispanic/Latino community.

Asians" (BLS). The cultivation of Latinos as people fit only for low-paid labor in the U.S. by government officials and corporations has negatively impacted their ability to access positions in management and higher paying jobs in general. This stigmatization has even followed Latinas into STEM according to the report, "Double Jeopardy? Gender Bias Against Women in Science": "A Latina bioengineer reported male faculty who "expected female faculty members to serve them tea or coffee or take notes (Williams, Phillips, & Hall, 2014)." Even while Latinas hold positions as researchers they cannot escape the patriarchal immigrant stereotype.

Along with unfair representation in the workforce, Latinas also face pay discrimination. The National Partnership for Women and Families found on average that the median wage for Latinas in the U.S. is $32,002 per year, and they are typically paid 47% less than white men and 31% less than white women (National Partnership for Women & Families [NPWF], 2021, cited in Cantos, 2020; see also U.S. Census Bureau, 2019). In CS and IT the wage gap is less pronounced, but still relevant considering that Latinas make up slightly less than 2% of the workforce. The medium salary of Latinas in CS is $80,000, Latino males earn $82,000, White women average $83,000, and White males medium is $105,000 (NPWF). The historic treatment of Latinas as low-wage workers fit only for blue-collar employment has negatively influenced their job prospects, exemplified in their underrepresentation in CS and IT.

Asian American

The hyper-sexualized view of Asian women perpetuated by the U.S. government, military, and sexual tropes defined in popular media have suppressed their advancement in society defined by White patriarchy. Even as they are second only to Whites in numbers of representation in Tech, they encounter obstacles to success in the field just like every other woman of color.

Asian Americans make up almost 7% of the U.S population and Asian American women account for 53% of all Asian Americans (U.S. Census Bureau, 2019; NSF, 2021). Asian American women represent close to 10% of technologists while Asian males represent 21% (AnitaB.org, 2020; see also Fry, Kennedy, & Funk, 2021).

This excerpt from the Gentleman's Quarterly (GQ) article, "Oriental Girls" is the result of century's worth of federally regulated propaganda cultivated to define Asian women as sexual objects (Woan, 2008):
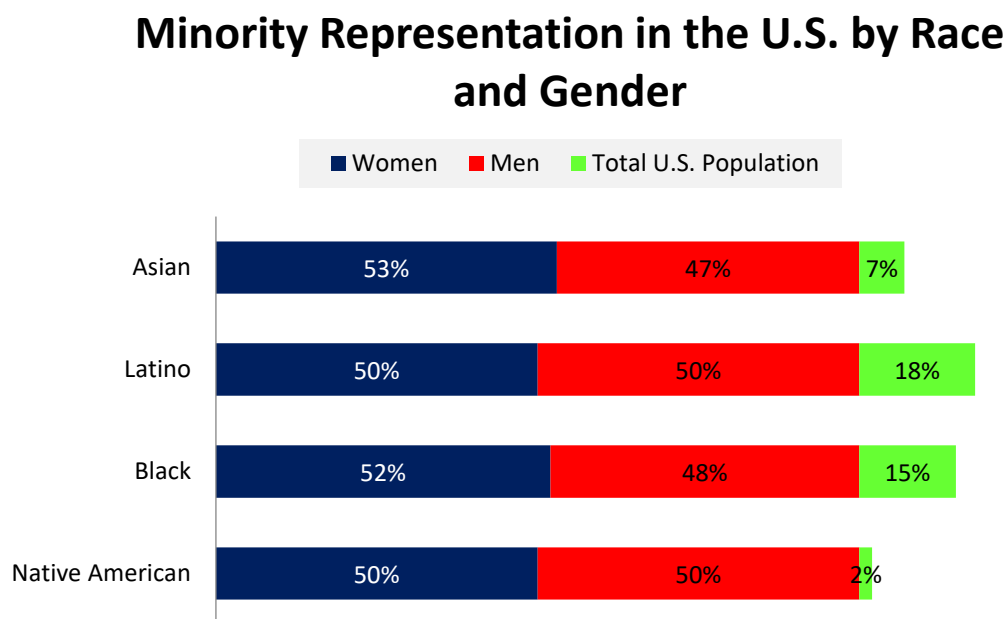
> When you get home from another hard day on the planet, she comes into existence, removes your clothes, bathes you and walks naked on your back to relax you ... She's fun you see, and so uncomplicated. She doesn't go to assertiveness-training classes, insist on being treated like a person, fret about career moves, wield her orgasm as a non-negotiable demand.... She's there when you need shore leave from those angry feminist seas. She's a handy victim of love or a symbol of the rape of third world nations, a real trouper (Rivers, 1990 cited in Woan, 2008).

The more recent 2021 Atlanta Spa Shootings that specifically targeted Asian women, and in which the suspect claimed he had a "sexual addiction" and wanted to eliminate his "temptation" (New York Times, 2021) prove that this stereotype is in effect today. The sexual tropes assigned to Asian women are especially problematic in IT and CS due to the "boy's club" culture that has allowed so many instances of sexual abuse and harassment against women.

While Asians are not exactly the most underrepresented in IT and CS, Asian women still report being alone in a room of males and are second to White females in the industry. According to the scientific study, "Double Jeopardy? Gender Bias Against Women in Science", "Asian-American women are more likely than women from other groups to be policed into femininity, and penalized for stereotypically masculine behavior… they had encountered pressures to play traditionally feminine roles such as office mother or dutiful daughter" (Williams, Phillips, & Hall, 2014). The Western ideals of what it means to be an Asian woman have negatively impacted their roles in CS and IT.

FIGURE 2

Minority representation in the U.S. broken down by race and gender

Minority Representation in the U.S. by Race and Gender

Legend: ■ Women   ■ Men   ■ Total U.S. Population

Race	Women	Men	Total U.S. Population
Asian	53%	47%	7%
Latino	50%	50%	18%
Black	52%	48%	15%
Native American	50%	50%	2%

Notes. Data represented in this figure is based off of the 2020 census, taken from the U.S. Census Bureau (2019), and has been rounded up to the nearest percentage point.

What can be done?

The overall representation of women in Technology has grown by almost 3% since 2018 (AnitaB.org, 2020). This growth is still significantly lower than in the 1990's when female representation was at an all-time high of 32% (Fry, Kennedy, & Funk, 2021). At this rate of growth, it will take twelve years to achieve equal representation compared to men, discounting the racial divide and pay inequities between genders (AnitaB.org). Commitment from the top down must truly be implemented to impose lasting change to the tech industry. Lip service is offered in support of gender equity but is severely underplayed or forgotten altogether, however, there are steps companies can take to change.

Diverse Representation in Leadership

Systemic patriarchal leadership has ensured that a small population of people, traditionally White men, holds positions of power in society. This is no different in the Tech sector.

The majority of women employed in Tech, 38.8% and 36.2%, are at the lowest rungs of the corporate latter, i.e. Interns and Entry-level positions respectively (AnitaB.org, 2020). More women than men over the last three years have been promoted, however, those promotions are concentrated in Mid-level positions, while more men have been promoted to Senior positions (AnitaB.org). 66.8% of board members are men, 12.3% of that number represent men of color, and there are no Native Americans on company boards of directors (AnitaB.org). The lack of diverse representation in Tech may contribute to the turnover rate of female employees. Scott, A., Kapor Klein, F., & Onovakpuri, U. cited unfair management practices as an overall contributing factor to Tech workers leaving an employer, costing companies over 16 billion dollars annually (Scott, Kapor Klein, & Onovakpuri, 2017). Sponsorship programs aimed at women and women of color have been proven to provide women an entry into the Tech field as well as provide them with a network to help them advance their careers. Below are a few hybrid programs aimed at reaching women of color interested in CS:

- [Latinas in Tech](#)
- [Black Women in Computing](#)
- [Anita Borg Institute for Technology](#)
- [Sisterhood of Native American Coders](#)

These are just a few of many CS programs focused on helping women achieve equal representation in Tech. Outside organizations, which know of the stigmatization against women in Tech and were founded to combat it, although necessary in providing opportunities and education, are not the ultimate solution to lasting change in the IT workforce. Companies must remain committed to diversity pledges and must follow through on promises which receive no follow-up guarantees.

Accountability

Companies which allow leaders found guilty of gender-based discrimination and/or harassment to retain their positions of authority, or, who let them go quietly without reprimand, validate the notion that these behaviors are acceptable, and contribute to work-place climates hostile to growth and diversity. Unwanted sexual attention is reported at rates almost twice as high among employees in the tech industry vs. tech employees in other industries (10% vs. 6%) (Scott, Kapor Klein, & Onovakpuri, 2017). Tech companies that truly wish to hire and retain women, as well as change inequitable ingrained systemic behaviors, must hold perpetrators accountable for their actions.

Sometimes employees resort to extreme measures to hold employers accountable. Liao reports that Activision workers are currently in a work stoppage to protest the sudden layoffs of studio contract workers, along with the history of sexual abuse and gender discrimination the company has neglected to address, citing that this is the third walk-out by employees in five months (Liao, 2021). Clark cited a similar instance of Google employees in 2018, protesting the $90 million dollar payout package awarded to Andy Rubin after accusations of sexual misconduct resulted in his resignation (Clark, 2018). Although worker solidarity can certainly make an impact and

produce results, employees should not have to resort to striking for companies to recognize wrongdoing and commit to change.

There are alternatives to standard sexual harassment trainings that are focused on creating allies rather than pitting genders against each other. Dobbin and Kalev highlights two methods, Bystander intervention and Management training programs (Dobbin & Kalev, 2020):

- Empowering fellow coworkers to report instances of harassment after receiving standard training creates a network of eyewitnesses and incentivizes the company to follow-through on commitments made to employees.
- Manager training gives leadership explicit knowledge of how to deal with harassment, and also makes it a requirement that all managers deal with the issue, not something to be handed off down the line.

Holding leadership and those in power accountable for their actions is one way to establish lasting change in CS and IT, and ensures a future compatible with a diverse workforce.

Relevant Corporate Diversity and Inclusion Initiatives

The #MeToo movement is praised as publicly shining a spotlight on perpetrators of sexual misconduct and has helped push major corporations into including diversity, equity, and inclusion (DEI) trainings for their employees, yet 55% of women and 48% of men believe that no change in company policy has resulted from #MeToo (Women Who Tech, 2020). Black Lives Matter (BLM) is another social movement that has gained traction within the last decade promoting equal rights for people of color, yet workers report that promoting social justice initiatives for the company falls on their shoulders, and is yet another responsibility to be taken care of, often unpaid (Jan, 2020). The answer is not to do away with diversity and inclusion training entirely, but to regularly incorporate it into the workplace and structure it in a way that proves to employees that it is relevant both at work and in personal lives.

Dell Technologies has implemented MARC (Men Advocating Real Change) for their employees, which takes a research-based approach on educating employees about the importance of diversity through expert-lead group sessions and online forums (Dell Technologies, 2019). They published findings that, "nearly 70% of employees have seen changes in their leaders' behavior and progress, while 82% of executives who attended MARC sessions said it changed how they think about diversity" (Dell Technologies). This is only one example of a major corporation pledging to do better, and which attempts to create allies in its employees, not villains.

Conclusion

There have been countless studies done on the gender disparity between women and men in CS and IT in the U.S. but most of them do not take into account the ways in which racism has shaped the U.S. as a nation. Computer Science and Technology have already altered labor and communication and will continue to evolve in the coming years. As technology becomes virtually inseparable from human life it is imperative to recognize the harm racial stigmatization and patriarchal systems of power have done to minority groups, especially women of color, as past racial atrocities continue to be reincarnated into present day news articles. Technology can help create a more equitable future by modeling a diverse workforce, through rejecting traditional power structures that have always valued suppressing the rights of women and minorities.

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