



# DIVERSITY AND THE AGE OF AUTOMATION

Why the US has an imperative to bring a  
diverse workforce into the future through  
a responsible automation agenda



# Executive Summary

*The current COVID-19 crisis is disproportionately impacting marginalized communities in the workplace. As new AI and robotic technology acquisition across all industries continues to accelerate, disparities are likely to be further exacerbated. Companies have a responsibility to make intentional decisions to bring all constituencies of people along, not only as a social imperative, but also out of need. By hiring from the talent pool of women and under-represented groups, organizations will be better equipped for success post-pandemic and beyond.*

## Disproportionate Impacts on Marginalized Communities

COVID-19 has had disastrous effects on a number of industries across the US. In the subsequent analysis, we leverage Census data on the US workforce and home in on five key industries based on the high number of employees represented, and their potential risk exposure due to the nature of their work: food services, healthcare, retail, finance and education.

In three out of five of these industries, there's a higher-than-national-average representation of non-Asian people of color—especially Black and Hispanic Americans, and women, in roles that cannot be performed effectively in remote or mandatory lock-down situations. Practically, this means these communities are facing greater numbers of joblessness and underemployment. It's critical that they shift career pathways and upskill rapidly to remain employable. In the healthcare industry, 72% of Black and Hispanic workers fill positions that are considered high-risk for COVID-19 infection, compared with 65% of White workers, despite White people outnumbering Black and Hispanic people by more than two to one in the industry. Across all industries, non-Asian people of color (POCs) are more likely to be over-represented in high-risk roles than White people.<sup>i</sup> (Faethm Research on US Census Data)

## Digital Transformation Accelerates Existing Workforce Inequities

In light of the need to remove risk from work, companies have significantly increased their digital transformation efforts in order to effectively adapt to the uncertain environment of the global pandemic. In a recent Twilio study, 97% of executives said they've accelerated digital transformation as the result of COVID-19<sup>ii</sup>. Faethm's data shows many of those same marginalized communities hardest hit by the pandemic are also those that are most at risk of job disruption through AI/ robotic technology deployment.

This is particularly true for Black and Hispanic employees, for women, and women of color in our focus industries, as they tend to occupy roles with repeatable, repetitive and lower-skilled tasks which are prone to replacement by technology. This is especially pronounced for women in finance, where women across all races are almost 10 percentage points more likely than men to have portions of their role removed by technology<sup>iii</sup>. Practically, this means individuals in roles most prone to disruption may need to completely shift careers in order to remain employable in the market. Though all communities will require skills uplift in the future to remain competitive, these highly impacted communities will face the most near-term job disruption.



## We must act now, with a human-first mandate, to bring all Americans along in the evolution of work

Companies have an imperative to ensure that actions taken now reverse these trends. Employers must make data-driven decisions to explore the impact of technological transformation on diverse communities, and make direct interventions to counteract these trends.

As these impacts disproportionately affect marginalized communities, companies should take extra care to ensure their actions help, and don't hinder these groups. This should be driven not just by a moral imperative or even a need to meet diversity, equity and inclusion (DEI) targets, but because it is a necessary condition to bridge the forthcoming labor gaps in the market. Faethm recently co-authored a report with BCG titled 'The Future of Jobs in the Era of AI' on the anticipated labor market gaps in the US and beyond. This report can be accessed here. <https://info.faethm.ai/future-of-jobs>

## High-level methodology and data sources

The data for this paper comes from multiple sources across the US census, including from the Bureau of Labor Statistics (BLS), Occupation Employment Statistics (OES) and the Equal Employment Opportunity Commission (EEOC) for 2020.

In order to unearth meaningful nuances across industries and roles, we have normalized the number of full time equivalents (FTEs) depending upon racial categories. For example, to account for the fact that White people have the highest number of FTEs across industries, we have developed a mechanism to account for under or over-representation of certain groups compared to the mean.

More details are described in Appendix A.

## About Faethm

Faethm's SaaS AI platform was launched in 2017 and has grown rapidly to now serve Governments and Companies in 21 industries and 26 Countries from offices in Sydney, London and Austin. A sophisticated knowledge graph and multiple AIs underpin platform modules that deliver data and insights about automation, reskilling and redeploying workers for new jobs, economic and investment scenario modelling and COVID resilience and remote working.

In 2018 Faethm was one of the first companies globally to be invited to join the World Economic Forum's Centre for the Fourth Industrial Revolution. Awards since include the Tech Rocketship award for AI from the UK Government's Department for International Trade, an EU HR Excellence award for the Government of Luxembourg Skills Bridge program and Best New Tech Platform from the Australian Computer Society.

- i. This is based on original Faethm research of the US workforce using census data.
- ii. Koetsier, John. "97% Of Executives Say Covid-19 Sped Up Digital Transformation." Forbes, Forbes Magazine, 14 Sept. 2020, [www.forbes.com/sites/johnkoetsier/2020/09/10/97-of-executives-say-covid-19-sped-up-digital-transformation/?sh=4aa4dfe14799](http://www.forbes.com/sites/johnkoetsier/2020/09/10/97-of-executives-say-covid-19-sped-up-digital-transformation/?sh=4aa4dfe14799).
- iii. Faethm Original Research on the US Workforce using Census Data.



The unprecedented workplace transformation that occurred in 2020 as a result of the COVID-19 global pandemic impacted the workforce in a way not seen since the Great Depression <sup>1</sup>. Unfortunately, certain communities have borne the brunt of these economic and physical impacts due to a multitude of different factors, including the nature of work performed by individuals in these communities. Across the board, ethnic minorities and women, have experienced a disproportionate amount of the economic impacts of COVID-19 <sup>2</sup>. In particular, we have seen that jobs in industries with greater human interaction, and jobs with low and medium skill-levels, have been most vulnerable.

Given that the majority of positions in these categories tend to be held by women and non-Asian minorities, the majority of the underemployed or unemployed Americans are disproportionately comprised of these marginalized communities.

In addition to these trends, as organizations are dealing with the uncertainty of the recession, they are quickening technology adoption to counteract slowdowns associated with shutdowns. These actions are taken to de-risk work and the workforce and maintain viability in the uncertainty of the continued crisis. This expedited digital transformation is motivated by a range of factors, including cost savings in the face of severe economic downturn, reducing the level of human interaction/risk of exposure in certain roles, making work less human-dependent (e.g. self-service checkouts in grocery stores), or increasing and scaling speed of operations. <sup>3</sup>

*In a recent Twilio survey, 97% of executives interviewed say they've sped up digital transformation because of COVID, and 79% say they've increased their digital transformation budgets.*

*(Forbes, Sept. 2020)*

This tech adoption comes with a corresponding people impact, as workers are either automated out of roles (forcing them to shift career paths), or as workers are required to reskill and upskill in order to keep pace with the evolution of work.<sup>4</sup> Unfortunately, this faster pace of technology adoption is likely to only further increase inequalities in the labor market, unless intentional action is taken.

To put it simply, automation, or the replacement of a task with technology, and augmentation, the potential improvement of a task's efficiency through technology, may only further increase this inequity in race and gender demographics across the U.S. This is not because digital transformation is inherently biased, but because certain marginalized populations are more likely to occupy jobs in industries that have high automation potential. <sup>5</sup>

The following analysis demonstrates this point by leveraging data from multiple US government survey data sources (detailed in the appendix) and Faethm's proprietary analytics engine to demonstrate current state and projected impact on these diverse communities across the United States. The proceeding analysis provides information at the state level, however further information at the county level can be made available upon request.



To demonstrate the disproportionate impact of accelerated digital transformation in the US, we calculated the impact of potential automation and augmentation across a wide variety of industries, broken down by gender identity<sup>6</sup> and race<sup>7</sup>. Ultimately, we make the assumption that empowering the workforce through augmentation is favorable to replacing workers through automation. Although automation does not necessarily correlate to job loss, it often requires significant reskilling and, potentially, career changes for the individuals in those roles to be viable in the market.

In this paper, we also focused on a few industries which are the most populated and have been hardest hit by COVID-19 including retail, food services, healthcare and education. In addition, we've shown impact across the financial services industry given the industry has some interesting trends around ethnicity and gender diversity.

*There is nothing about a person's gender, race, or age that makes them more or less vulnerable to technology. These trends are all about the industries and jobs that populations work in, the roles they inhabit, and often the job opportunities that are available to them because of geographic or structural limitations.*

Figure 1  
Distribution of Risk of Exposure to COVID-19  
Top five most populated roles per industry



## COVID-19 is further marginalizing the most vulnerable

Ample research has been performed on the health and financial impacts of the global pandemic and resulting recession. Faethm's data corroborates this research and provides insights into underlying workforce and technology trends that contribute to, or influence, the impacts of COVID-19.

Unfortunately, the communities hardest hit by the pandemic are already vulnerable. Black, Hispanic/Latinx, Native American and Pacific Islander communities experience infection and death rates two to three times the national average.

While there are numerous causal factors<sup>a</sup> that contribute to these high infection rates in these communities, workplace data analyzed by Faethm suggests that a major causal factor is the type of role that's commonly filled by workers from marginalized backgrounds.

By and large, Black, Hispanic and other ethnic minorities tend to work in industries where the risk of exposure to COVID-19 is higher. Roles in healthcare, food services, education, and retail require workers to be in close contact with others. The graphic below elucidates this trend further.

Figure 2 shows that Black Americans have an above-average representation in the food services, healthcare and retail industries, and an under-representation in finance and education.

We can see this very clearly by comparing representation of 'non Asian people of color' against White/ Asian populations across the same remotability graph, as represented in Figures 3A and 3B.

*For the purposes of our analysis, we have used the racial categories provided by the US Census Office of Management & Budget's designations, including 'White, Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Hispanic or Latino.'*

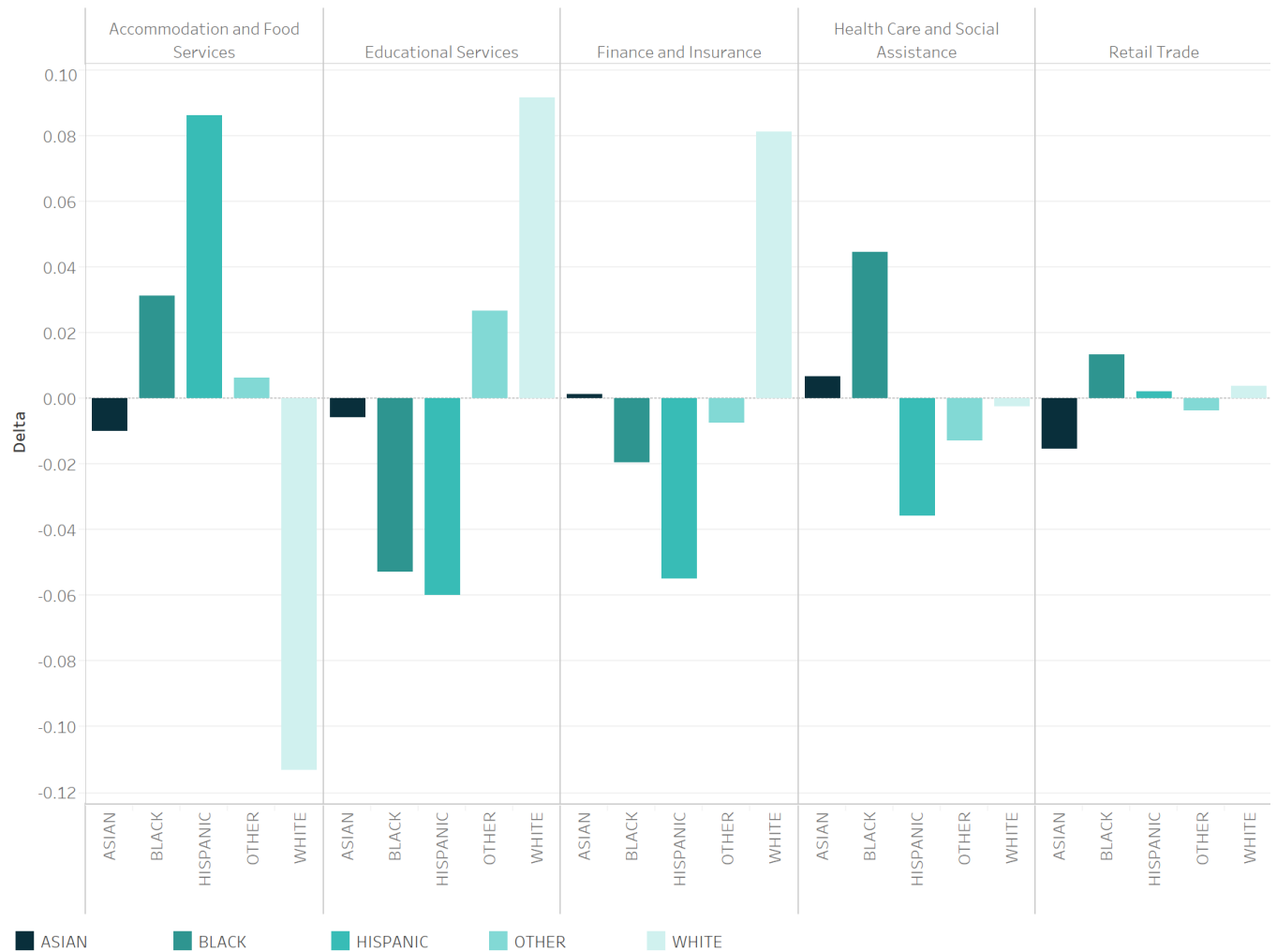
*Given the available data, American Indian, Alaskan Native, Hawaiian, Pacific Islander and multi-racial groups have been combined as an 'Other' category for this analysis. We recognize that this is imperfect and doesn't reflect the nuances of these unique communities of people. Follow-on reports from Faethm will include greater granularity on these racial groups.*



Figure 2

### Over or Under-representation of Racial Groups by Select Industries, Compared to National Averages °

Delta = deviation from the national population distribution.



*In the healthcare industry, 72% of Black and Hispanic workers fill positions that are considered high-risk for COVID-19 infection, compared with 65% of White workers, despite White people outnumbering Black and Hispanic people by more than two to one in the industry. In three out of five select industries, non-Asian people of color (POCs) are more likely to be over-represented in high-risk roles than White and Asian people.*

(Faethm Analysis on US Census Workforce)



## Comparing average remoteability between roles filled by non-Asian workers and roles filled by White and Asian workers.

Figure 3A

**Average Remoteability for Roles with non-Asian people of color**  
Roles where people of color are overrepresented in select industries

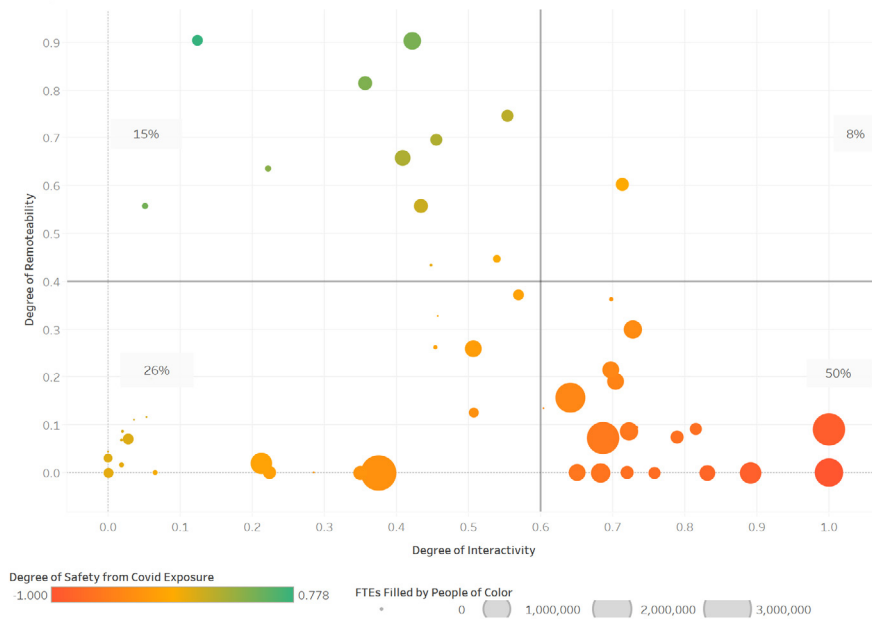
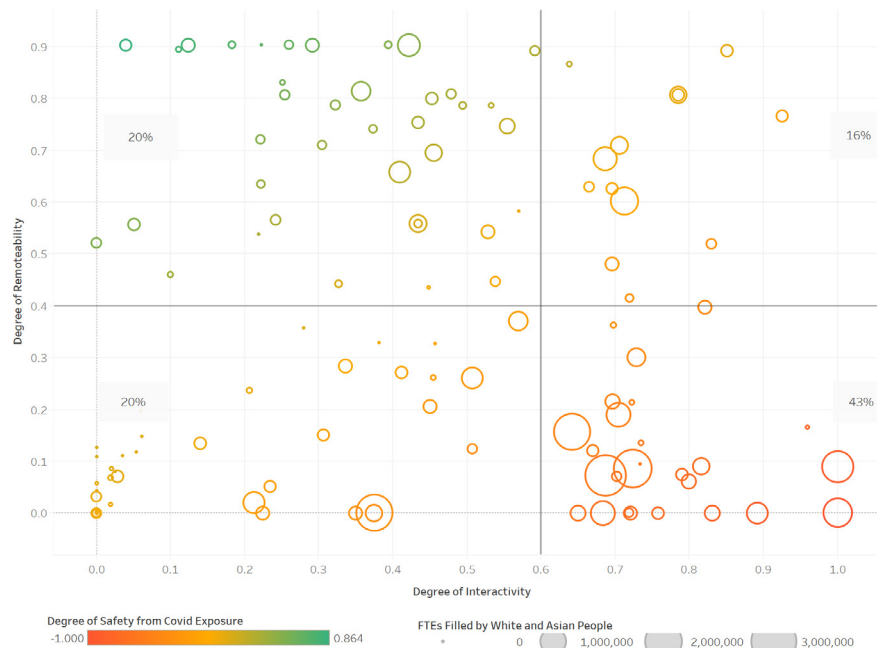


Figure 3B

**Average Remoteability for Roles with White and Asian people**  
Roles of White and Asian workers in select industries



Each bubble represents a role. The size of the bubble represents the number of people in the role. Placement on the graph represents the degree of human interaction and remoteability of a role, corresponding to potential exposure to COVID-19. 76% of non-Asian people of color occupy roles with higher risk of COVID-19 exposure (bottom two quadrants) compared to 63% of White and Asian people.





Not only are individuals within these industry sectors at higher risk of contracting the virus, but their work cannot be performed effectively in remote or mandatory lockdown situations. Practically, this means these communities face joblessness and underemployment, and have a high need to upskill rapidly and take hold of opportunities to change careers. In June 2020, Black and Hispanic people experienced 16%+ unemployment, three percentage points above the national average<sup>10</sup> and nearly four percentage points more than the White population.

Similarly, when we look at the impact of gender on these trends, women tend to dominate those industries that are most impacted by COVID-19 and joblessness. This resulted in a massive exodus of women from the workforce in the summer of 2020, at four times the rate of men<sup>11</sup>. One statistic cited that 100% of all job losses in the US were sustained by women<sup>12</sup>. Other compounding effects of job loss by women (and particularly women of color) are the closures of schools and daycare centers, leaving women without access to support systems that enable them to remain in the workforce.<sup>13</sup>

Table 1  
Percentage of Male and Female FTEs in Select Industries

Select Industries	Female	Male
Accommodation and Food Services	53.68%	46.32%
Educational Services	63.60%	36.40%
Finance and Insurance	60.52%	39.48%
Health Care and Social Assistance	78.90%	21.10%
Retail Trade	52.33%	47.67%

Women hold the majority of positions in all five of the industries that place workers at high risk of contracting COVID-19.

*"...layoffs and furloughs only explain part of the picture. Many women are leaving the workforce not because their jobs have vanished but because their support systems have."*

*—Time Magazine, October '20*

## Adding insult to injury – digital transformation is the great accelerant

In addition to the impact of COVID-19 on these marginalized communities, companies are now significantly increasing their digital transformation efforts in order to effectively adapt to the uncertain environment of the global pandemic. Thus, the disruptive impact of technology on the workforce has also accelerated, leaving companies and workers scrambling to adapt to a shifting employment landscape.

Faethm's data shows that many of those marginalized communities who have been hardest hit by the pandemic are also those that are most at risk of job disruption through AI and other robotic technology deployment. These trends were already in place prior to the rapid digital transformation uptick but are adding another layer of stressors and complexity on already hard-hit communities.



# Role transformation is unequal – non-Asian people of color face the double whammy of COVID-19 and tech job disruption

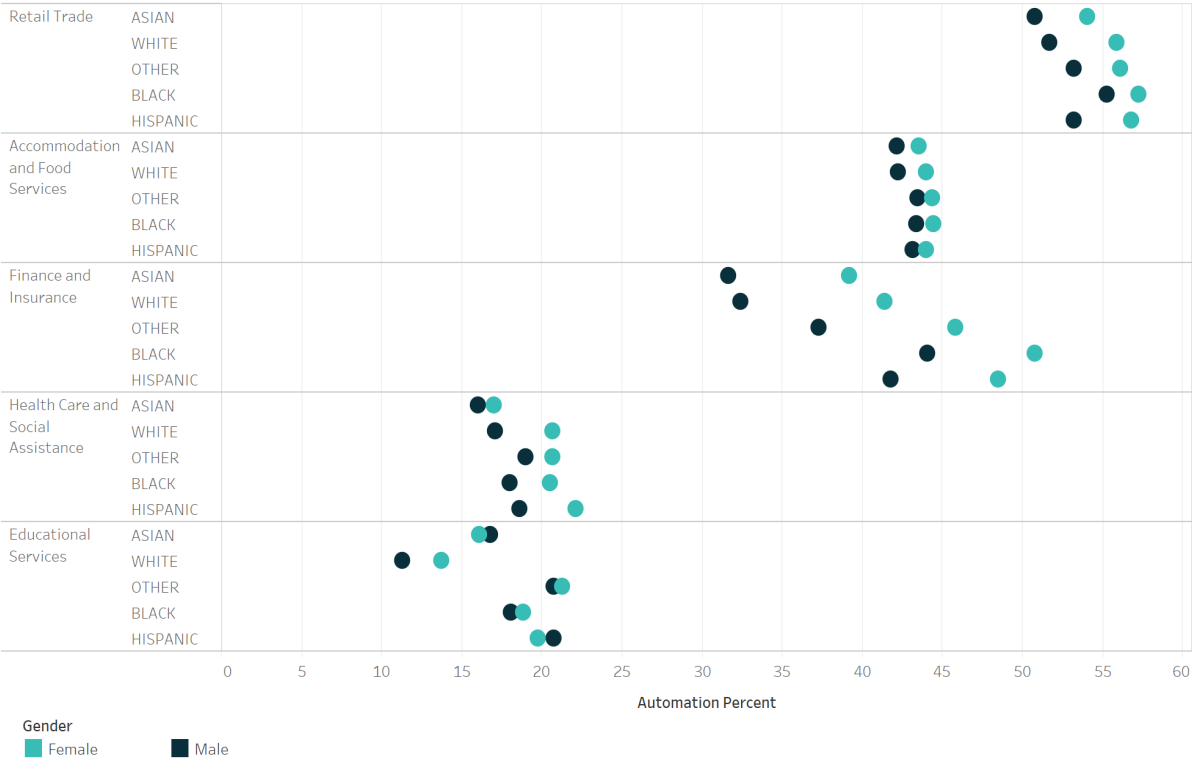
Faethm’s data tracks the impact of AI and robotic technology on the workforce across 16 technology categories. Roles are likely to be transformed by these technologies in one of three ways: by automation (the potential risk of replacement of a task by technology), augmentation (work made more efficient through technology) or addition (net new roles that could be added to the workforce to implement, maintain and use different technologies).

When we overlay technology trends onto the COVID-19 impacts on the workforce, we see similar trends of women, Black and Hispanic communities being more susceptible to job disruption through the replacement of tasks by technology.

Figure 4 shows that Asian men and White men hold roles that are consistently the least automatable across the select industries, while Hispanic and Black women hold roles with the highest risk of automation.

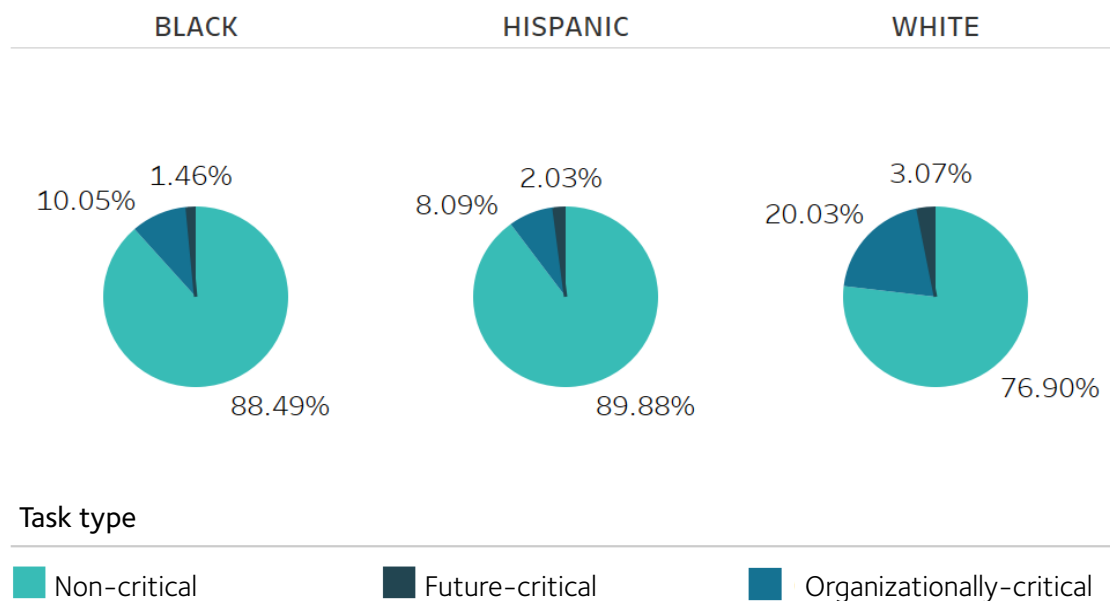
Why might this be the case? Some roles are inherently more automatable than others, due to the prevalence of repeatable, repetitive and generally low-skilled tasks. Unfortunately, the data show that these lower-skilled, automation-prone roles also happen to be occupied by Black, Hispanic, Native American and Multi-racial Americans.

Figure 4  
Automation Rates by Race and Gender in Select Industries, 2030



The numbers in Figure 4 represent the percent of potential automation risk of the select group and is calculated based on the availability of technology that could replace tasks. Women are in light blue and men are in dark blue. The further right the indicator, the more automatable the roles that group holds. Women of all races occupy roles at greater risk of automation across industries; Hispanic, Black, and other racial groups occupy roles that are at greater risk of automation than roles held by White and Asian populations.

Figure 5  
Comparing type of tasks for roles held by Black, Hispanic, and White populations in Healthcare



For example, if we deep dive on the healthcare industry, which has an above-average representation of Black Americans, we see that nearly 90% of the Black workers reside in roles with very easily replaceable skills, which puts them at greater risk of job loss. The same is true for Hispanic workers in healthcare. This is significantly different than White people in healthcare, with only 75% of populations holding easily replaceable skills.

Practically, this means individuals in roles most prone to disruption may need to completely shift careers in order to remain employable in the market. Though all communities will require skills uplift in the future to remain competitive, those in roles at greatest risk of automation may experience the most job disruption in the short-term. See page 12 to explore potential career transition pathways for these at-risk roles.

# Is the future female?

## How to make it so

The data in figure 4 show us that women (and, in particular, women of color) are at greatest risk of automation in these select industries, suggesting again that career transformation may be required to remain employable in the labor market.

The inverse also is true. Men, regardless of race, fill roles that tend to be more augmentable across industries, implying greater short-term career stability. Interestingly, there is only one industry where women show higher augmentation rates than men – education. Across all groups in this industry, women of color fill roles with higher augmentation rates than men. Why is this? It goes back to the nature of the work done by women in education.

Figure 6  
Augmentation Rates in Select Industries by Race and Gender, 2030

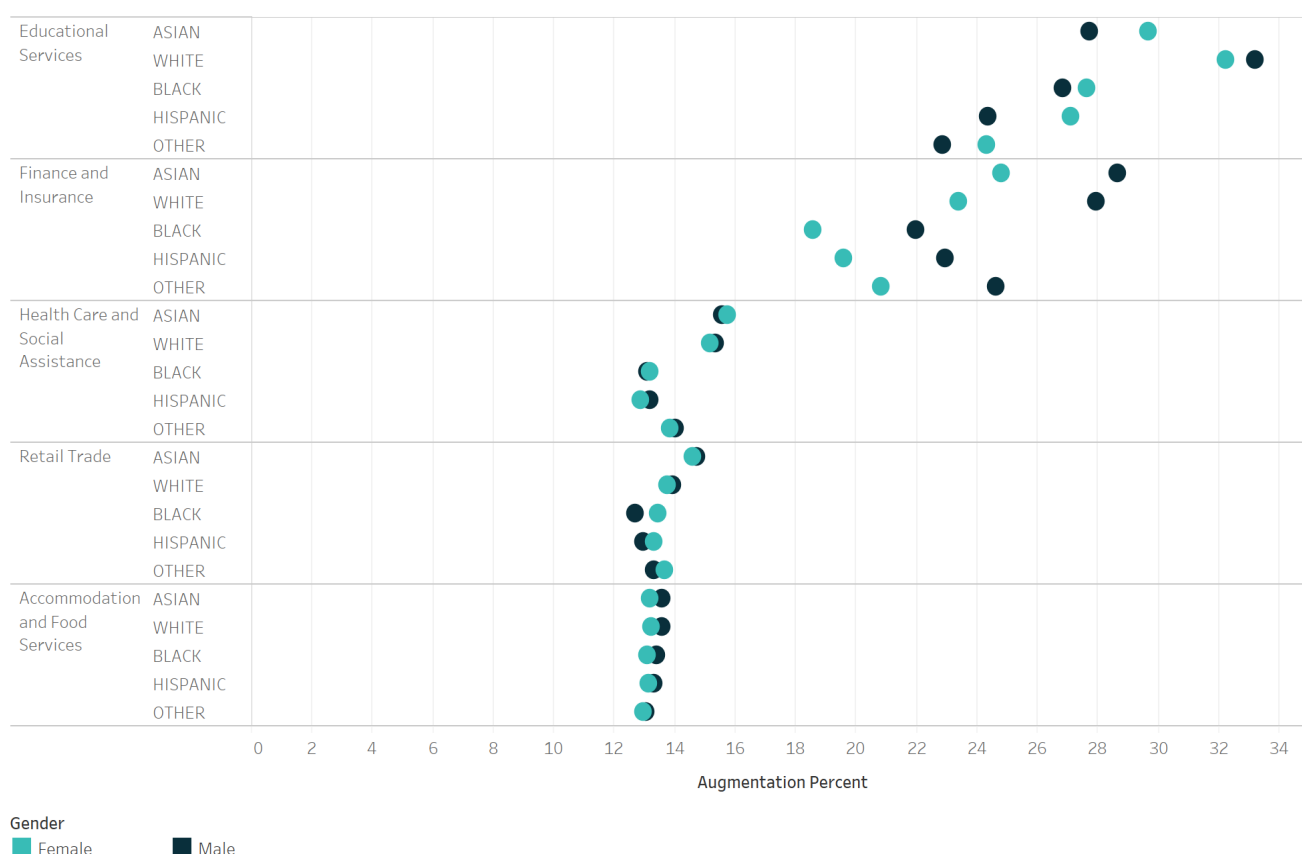
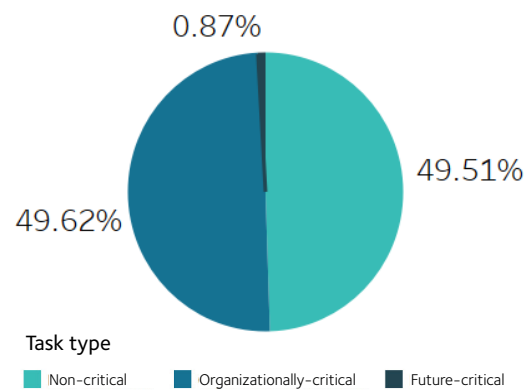


Figure 6 shows the percentage of augmentation across five key industries in 2031, comparing the augmentation rate by gender and race. Women are in light blue and men are in dark blue. The further right the indicator, the more augmentable the roles that group holds. Women of all races are less augmentable than men across industries, except for education. In finance again we see vast disparities between men and women.



Compared to the chart in the section above, which explores the types of roles occupied by Black men in healthcare, women in education occupy roles with higher-level skills which are harder to replace and are easier to augment. 50% of women in education occupy roles that can be made more efficient by technology and thus have longer-term future viability through upskilling.

Figure 7  
Type of Tasks for White women in Education



## Forewarned is forearmed – you need a diverse workforce

How then can we make sure more opportunities exist for diverse groups of people despite these disruptive trends? As digital transformation accelerates, we have an opportunity and responsibility to ensure these marginalized groups are intentionally invested in and reskilled/ upskilled into the future. Workforce diversity has tangible benefits. A diverse workforce improves productivity, innovation and employee retention, all strengths for every organisation.

But these facts alone are no longer an incentive. It's a necessity to have the supply of labor needed to return to our pre-pandemic levels of productivity. In a recent report entitled 'The Future of Jobs in the Era of AI,' Faethm and BCG found there will likely be significant labor market gaps in education, finance and healthcare by 2030, a deficit ranging from 1–2M people. Alternatively, Retail and Food Services industries are likely to experience labor surpluses of .6M to 2.5M respectively. This adds even more urgency to the call to reskill and upskill workers to maintain economies in this rapidly evolving labor market scenario.<sup>14</sup>

Companies and governments have a responsibility to develop career transition pathways to retain their most marginalized workers and put in place mechanisms to ensure worker employability into the future. Not only will this be a necessity for productivity and employability of American workers in the short-term but upskilling of these professionals is a necessary baseline to be able to be effective due to the evolving nature of work. Absent this upskilling, it will be hard for professionals to take on more complex (non-automatable) tasks in the future.



### These actions might include:

- Investing in upskilling and reskilling career transition pathways for the most impacted workers (see below)
- Taking advantage of the leapfrog effect—hiring for roles that will be needed in the digitally transformed world
- Heavily recruiting women and POCs post-pandemic
- Exploring supportive policies and benefits that will bridge support care gaps
- Increasing investment in cybersecurity and infrastructure to enable permanent remote work
- Promoting women and minorities to future proof positions, which are less likely to be impacted by technology

### Potential career transition opportunities using Faethm's Job Corridor

Two of the most automatable roles from the industries discussed in this paper are Tellers and Medical Administrative Assistants. These positions also happen to have a higher-than-average representation of Black Americans.

Faethm's Job Corridor suggests transitions to other, lower-risk roles with similar skills and attributes. Tellers (78% task automation by 2030) might consider careers as:

- Computer User Support Specialists
- Quality Assurance Analysts
- Change Managers

Medical Administrative Assistants (69% automation by 2030) might consider careers as:

- Home Health Aide
- Nursing Assistant
- Computer Systems Analyst

Companies have an imperative to ensure that actions taken now reverse these trends. Employers must make data-driven decisions to mitigate the impact of technology transformation on diverse communities and make direct interventions to counteract these trends.

As these impacts disproportionately affect marginalized communities, companies should take extra care to ensure their actions help, not hinder, these groups. This should be driven not just by a moral imperative or even a need to meet diversity, equity and inclusion (DEI) targets, but because it is a necessary condition to bridge the forthcoming labor gaps in the market.

They can do that by taking a human-centric view of technology projects, whether they are automating and augmenting, and to plan well in advance. Our collective inequalities arise from many small workforce decisions, but they do add up. The post-COVID economic climate makes it easier to forget that these small decisions have big consequences on our teams, colleagues, and in the bigger pictures, our societies and our collective social climate.



# Appendix A: Report Methodology

The geeky stuff

## Projection of the impact of emerging technology

Emerging technology can impact the Evolution of Work both indirectly and directly: indirectly by disrupting an entire industry, impacting part of an industry's value chain, or replacing an entire business process; or directly by impacting a job or job task. In this study, we have focused our analysis on the direct impact of emerging technology on jobs and work tasks.

The Faethm model begins with an assessment of whether a job is automatable or not. We apply a support vector machine (SVM) that learns from expert elicited labeling of jobs data. The SVM learns what skills are associated with being automated, and any job analyzed by the model is given a probability of Automation. In addition to the SVM, the Faethm model applies an analysis of work tasks and technology-to-task impact over time. A natural language processing (NLP) approach is used to assign one of 16 emerging technology types to a work task (see figure on Faethm's technology taxonomy).

The SVM is combined with the task model to identify which jobs and tasks may be impacted by a specific technology and whether a task is likely to be automated or augmented. Adoption scenarios over ten years are also applied to each technology-to-task combination and adjusted by industry-specific technology adoption rates.

The data we apply in Faethm modeling is collected from multiple respected sources. Our core jobs data is an extension of the most comprehensive dataset on jobs, O\*NET. Faethm's technology readiness and adoption rates across 152 countries and 19 industries are fuelled by research from WEF, INSEAD, Cornell, and McKinsey.

In this study of the US workforce, the Faethm model is applied to government-collected census and employment survey data: EEOC (at 2018) provides data on race, gender, occupation category and detailed industry headcount at the county level; OES (2019) provides detailed occupation, salary, and headcount for detailed industries and state; BLS (at 2020) provides detailed industry headcount at a national level. Automation and augmentation impacts are presented for 2030, ten years from now.



# Faethm Technology Taxonomy

Scope of Faethm model  
(predictable future)

Year 1

Year 15

## Programmed AI

Pre-defined technologies

### Process Automation

Code programmed to complete pre-defined, logical and rule based process tasks.

### Fixed Robotics

Fixed robots that handle and manipulate objects in a pre-defined way.

### Mobile Robotics

Mobile robots programmed to move between points in a controlled environment.

## Narrow AI

Reactive technologies

### Predictive Analysis

Tools that reactively use ML to conduct narrow analysis and make related predictions.

### Recognition Vision

Tools that reactively use ML and sensors to recognize and classify data meaningfully.

### Suggestion Provision

Tools that reactively use ML to prioritize data to identify relevant recommendations.

## Broad AI

Proactive technologies

### Sensory Perception

Systems that use ML and sensors to detect and extract meaning from external stimuli.

### Decision Generation

Systems that use ML to evaluate input data to determine the best course of action.

### Conversation Exchange

Systems that use ML and sensors to interpret and engage in conversation.

### Dexterous Robotics

Robots with flexible functions capable of adapting dynamically using sensors and ML.

## Reinforced AI

Self-improving technologies

### Navigation Robotics

Robots using RL and sensors to navigate autonomously in unstructured environments.

### Collaborative Robotics

Robot using RL and sensors to co-contribute to generating shared meaning.

### Solution Discovery

Agents using RL and sensors to digest and solve unstructured, complex problems.

### Generative Design

Agents using RL and sensors to interpret creative data and generate concepts.

### Creative Origination

Agents using RL and sensors to invent new and original concepts beyond known data.

### Assistive Robotics

Robots using RL and sensors to physically interact with humans in an emotive manner.

## Extent of human input

Dependent (relies on human ability)

Collaborative (works alongside human ability)

## AI maturity and existence

Commercialized (developed with widespread adoption)

In R&D (prototyped with limited adoption)





## Faethm's approach to data quality and validation

We consider data and model quality to be of the utmost importance to our clients. We have invested time in building a robust scientific approach to evaluation and validation that would be typical of high-impact academic research.

Briefly, we are conducting four programs of validation, now and ongoing:

1. **Element Analysis** – isolation of model components to test statistical validity of individual parts
2. **Ensemble Analysis** – to explore uncertainty from internal variability through comparison to alternative methods
3. **Proxy Analysis** – comparison to real observed outcomes; and finally
4. **Scientific Peer Review** – academic-quality technical white papers have been written and distributed for academic peer review

Our approach provides confidence in our modeling, where traditional time-series methods are not applicable. Overall, the Faethm model is determined to be a robust and validated approach to project the future impact of technology on work. For example, Faethm's machine learning algorithms are highly accurate with both precision and recall scoring in the range of 80% to 99%. This statistic tells us that our modeling is sound.

Excluding academic research, no product or service providing analysis of workforce data – that we are aware of – is evaluated or validated using scientific methodologies. Of particular importance is our peer-review process. All components of the Faethm model are written (or in the process of being written) with the required rigor of a scientific research paper and submitted for peer review. As with all academic research, peer review provides independent critique by domain experts. Such review ensures acceptance of our approach to modeling and model evaluation, and provides further validation. Research organizations we have worked with include Macquarie University; UNSW Sydney; University of Technology, Sydney; and University of Tasmania. Further, we have worked with global organizations who have assisted in reviewing and validating our modeling in a commercial context. These organizations include Aon, Toronto Innovation Acceleration Partners (formally MaRS), MIT, Servicenow, DXC, Qantas, Australian Computer Society, KPMG, and RMIT.

Recently, we have worked on a joint publication with the Boston Consulting Group (BCG) to assess the impact of technology on the US, German, and Australian workforces. As part of this collaboration, our data and methodologies were validated by a global team of BCG data scientists and economists, as well as the chief economic advisor to Angela Merkel.

Overall, the Faethm model is determined to be a robust and validated approach to project the future impact of technology on work. Our research paper further describes our approach to evaluation and validation.



## Page notes

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5. There are multiple reasons why this fact is true. At all stages of the employee lifecycle, there is ample evidence for why diversity in your workforce is valuable. Not only does this make good business sense (there have been countless research studies highlighting the benefit to an organization's bottom line if the workforce, senior leadership, and boards have gender and ethnic diversity), studies show at every stage of the employee lifecycle within the organization (from acquisition to retention), having diversity, equity, and inclusion (DEI) strategies lead to more positive outcomes. Strauss, K., 2018, More Evidence That Company Diversity Leads To Better Profits, Forbes, viewed 6 March 2020, <https://www.forbes.com/sites/karstenstrauss/2018/01/25/more-evidence-that-company-diversity-leads-to-better-profits/#3cfd2bec1bc7>.
6. Gender identity in this instance refers to a person's self-reported sex, male or female. More granular analysis can be performed on diverse gender identities once this is consistently reported.
7. Race is represented using standard categories from the US Census Office of Management & Budget's designation, including 'White, Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Hispanic or Latino.' Given the available data, American Indian, Alaskan Native, and multi-racial groups have been combined for this analysis. We recognize that this is imperfect and doesn't reflect the nuances of these unique communities of people. "US Census Bureau - About Race." The United States Census Bureau - About Race, 16 Oct. 2020, [www.census.gov/topics/population/race/about.html](http://www.census.gov/topics/population/race/about.html).
8. Lack of access to healthcare, co-morbidities like diabetes or obesity, housing instability, and discrimination in the healthcare system in the US are some often cited causal factors, outside of position. "Health Equity Considerations and Racial and Ethnic Minority Groups." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 12 Feb. 2021, [www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html](http://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html).
9. This chart shows the Delta values for the five industries selected for evaluation for this report. A Delta value represents the difference between a particular ethnicity's percentage of the overall population and the percentage of FTEs occupied by people of that ethnicity within an industry or role. For example, Hispanic people represent approximately 15% of the US population, but they occupy 24% of FTEs in the Accommodation industry, giving them a Delta value of 9. A positive Delta value indicates that the ethnicity in question is overrepresented in that industry, a negative Delta value indicates underrepresentation.
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11. "Layoffs and furloughs only explain part of the picture. Many women are leaving the workforce not because their jobs have vanished but because their support systems have. More than half of U.S. elementary and high school students are now attending online-only classes, according to a recent study by Burbio, a software company that aggregates school and community calendars. And roughly 40% of childcare centers surveyed in July by the National Association for the Education of Young Children reported that they were doomed to shutter permanently without significant government assistance—which never materialized." Vesoulis, Abby. "Women's COVID-Fueled Exodus From the Workforce Hurts Us All." Time, 17 Oct. 2020, [time.com/5900583/women-workforce-economy-covid/](https://time.com/5900583/women-workforce-economy-covid/).
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