BeyondHQ Knowledge

Best cities for diversity in the tech workforce

The BeyondHQ diversity ranking

Diversity in the workplace may be defined as the intentional inclusion of people of different ethnicities, nationalities, age groups, gender, and sexual orientation.

Employers in the technology industry are making a concerted effort to apply diversity metrics to their hiring practices. They often ask which communities should they consider for expansion that would make it easier for them to meet their diversity goals.

In this BeyondHQ Diversity Ranking we look at how cities in the United States with the largest presence of technology workforce are performing with respect to diversity in their employed talent today. A lower rank in no way suggests that an employer couldn't hire for diversity in that city. It may actually be an opportunity to become an employer of choice in such communities by instituting a deliberate and targeted recruiting program.

We have considered only those communities that have at least 20,000 technology workers in their workforce across all industries.

Employers have to design their organizations for inclusion and equity. Diversity by itself doesn't guarantee inclusion. We have merely looked at what different workforces look like today in different cities.

This analysis has considered three aspects of diversity:

Race / ethnicity: we have explored the presence of different racial groups in the population and their representation in the tech workforce

Gender: In technology occupations the participation of women is lower than in many other occupations. We have explored which cities perform better on women's labor participation in the technology industry.

Age: They say "tech is a young person's game". The recent hyper-growth in the tech economy has brought more workers, mostly millennials and now Gen-Z, into the workforce than any generation before them. Therefore it is expected that the tech workforce would be more youthful. However, this has also led to complaints of ageism, which is discrimination against older workers in hiring practices. In our study we have only considered presence of tech workers older than 55 years of age to see which communities hire experienced workers proportionate to their presence in the population.

We have not considered LGBTQ workers in this study. Data for this group is inconsistent across cities. However, we will include this information in upcoming publications and updates.

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Diversity ranking methodology

We compare communities on **Raw Diversity**, which is the sheer size of the minority workforce, women and mature workers, with **Representative Diversity**, which measures how well a local demographic is represented in the tech industry.

Representative Diversity considers the following variables for scoring and ranking communities:

- The ratio of minorities in the local tech workforce and minorities in the entire local workforce

- Proportionate representation of different ethnic groups as reflected in the local demographics. (*The data is weighted with the national distribution percentages of these groups*)

- The distribution of different racial/ethnic groups in the local workforce. *(Representation of more groups is rated higher than an overrepresentation of one minority group)*

- The proportion of women in the local tech workforce as compared to the total women in the local population

- Participation of workers 55+ years of age in the tech workforce. In a youthful workforce, ageism is a real and present issue. We look at the participation of mature workers as compared to the local population.

Raw Diversity disregards equitable distribution of different groups; instead, it looks at the sheer size of the collective minority workforce, female participation, and inclusion of mature workers, all weighted equally.

The following occupations were considered in determining the technology sector:
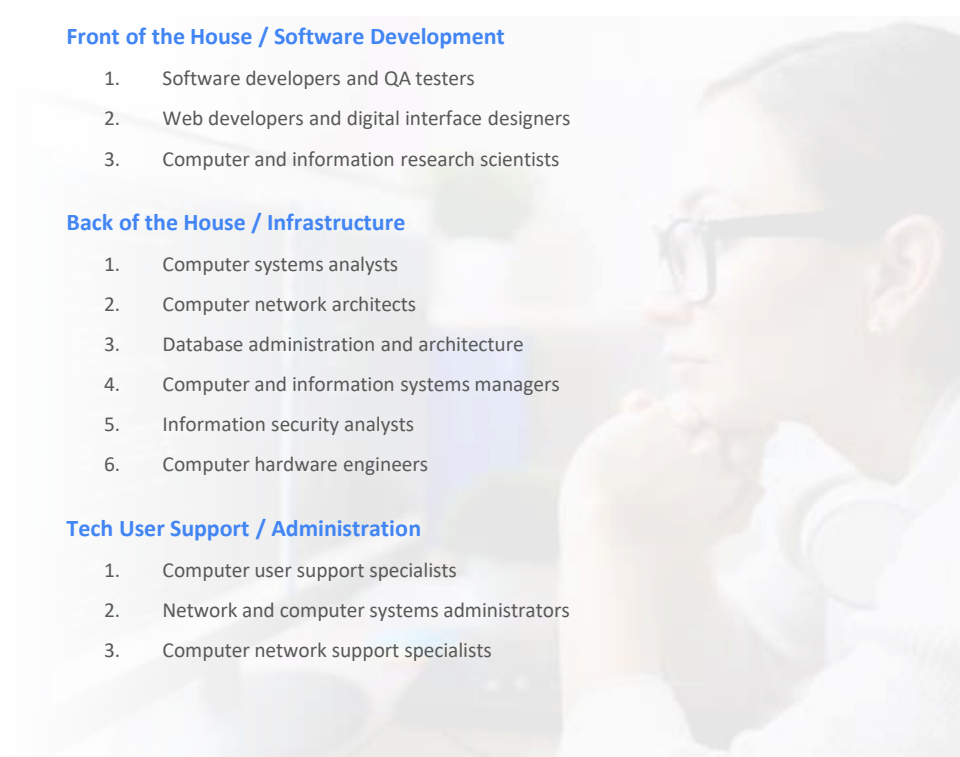
Front of the House / Software Development

1. Software developers and QA testers
2. Web developers and digital interface designers
3. Computer and information research scientists

Back of the House / Infrastructure
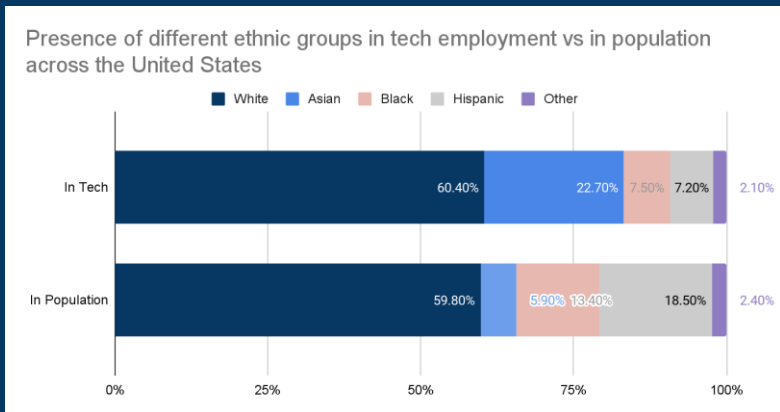
1. Computer systems analysts
2. Computer network architects
3. Database administration and architecture
4. Computer and information systems managers
5. Information security analysts
6. Computer hardware engineers

Tech User Support / Administration

1. Computer user support specialists
2. Network and computer systems administrators
3. Computer network support specialists

How this ranking is different

Presence of different ethnic groups in tech employment vs in population across the United States

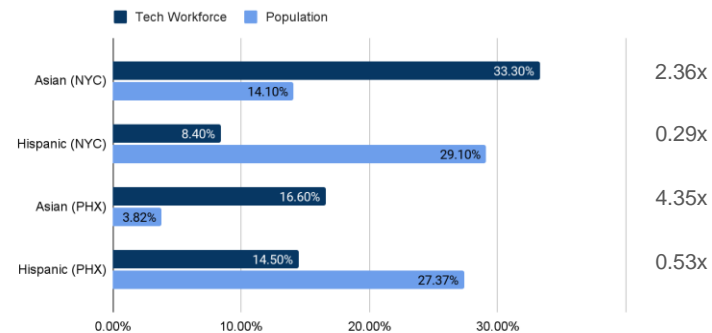|	White	Asian	Black	Hispanic	Other
In Tech	60.40%	22.70%	7.50%	7.20%	2.10%
In Population	59.80%	5.90%	13.40%	18.50%	2.40%

Nationally, the White tech workers are equitably represented in the tech industry, Asian workers are disproportionately overrepresented, while Black and Hispanic workers are significantly underrepresented as compared to their presence in the population.

In our ranking model, the closer a group's representation in the tech workforce is to its presence in the population, the higher it is scored.

This is not a commentary on overall diversity of a city but rather how well its tech industry represents the local population.

Tech Workforce vs Population (NYC vs PHX)

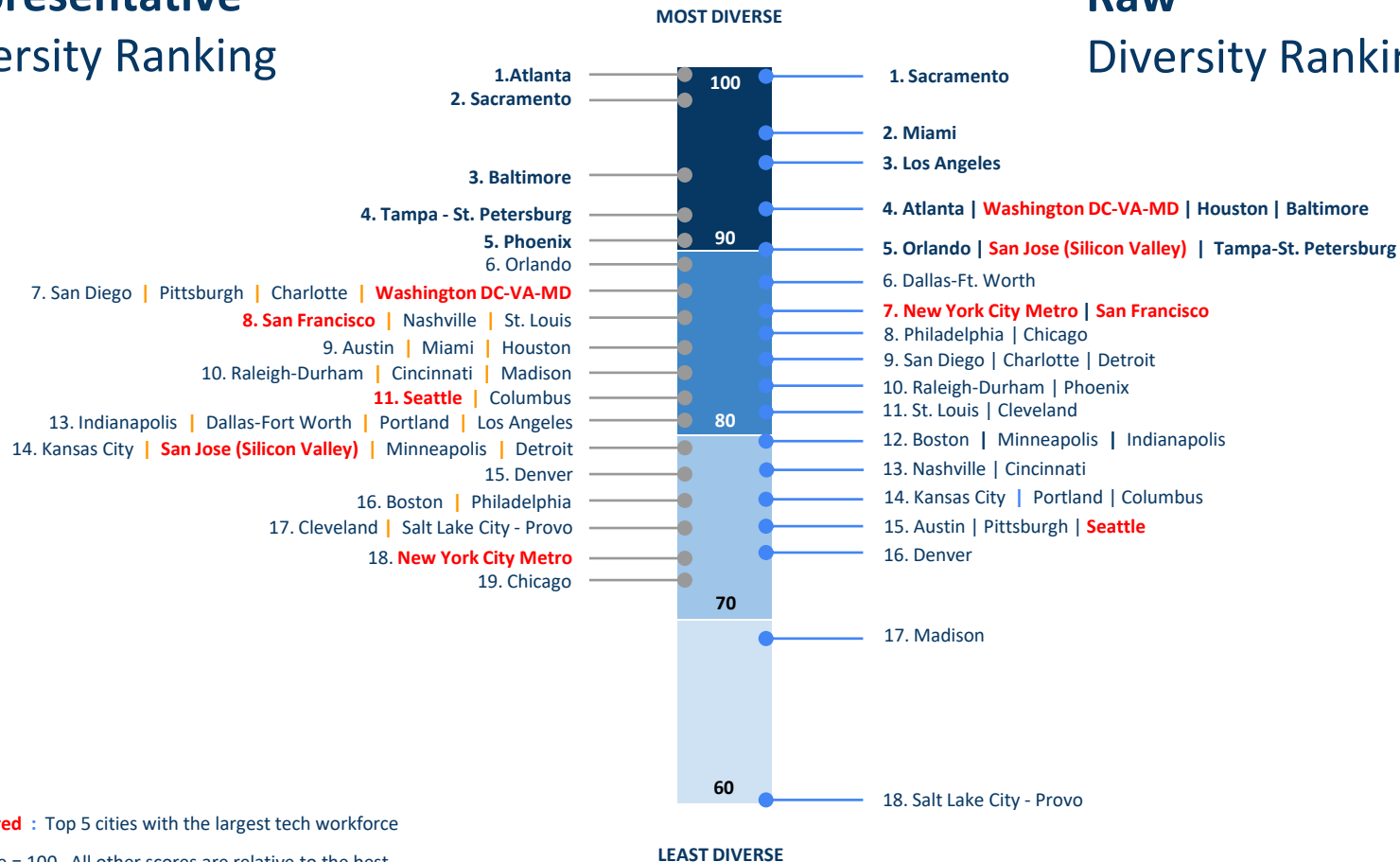|	Tech Workforce	Population	
Asian (NYC)	33.30%	14.10%	2.36x
Hispanic (NYC)	8.40%	29.10%	0.29x
Asian (PHX)	16.60%	3.82%	4.35x
Hispanic (PHX)	14.50%	27.37%	0.53x

It may be counter-intuitive that Phoenix is more diverse than New York City in our rankings; the above example may clarify that. Sheer numbers would make New York look more diverse, however, a greater proportion of the Asian population is represented in the tech workforce in Phoenix (4.35x) than in New York (2.36x), although the Asian population in Phoenix is less than 4% compared to over 14% in New York. The same is true for Hispanic tech professionals although New York has a greater proportion of Hispanics in its population.

This means that Phoenix is performing better for minorities in the workforce than New York. Similarly, we have analyzed how well a community has performed for each ethnic group, women in tech, and experienced workers above the age of 55.

Representative
Diversity Ranking

Raw
Diversity Ranking

MOST DIVERSE

1. Atlanta — 100 — 1. Sacramento

2. Sacramento

2. Miami

3. Los Angeles

3. Baltimore

4. Tampa - St. Petersburg — 4. Atlanta | **Washington DC-VA-MD** | Houston | Baltimore

5. Phoenix — 90 — 5. Orlando | **San Jose (Silicon Valley)** | Tampa-St. Petersburg

6. Orlando — 6. Dallas-Ft. Worth

7. San Diego | Pittsburgh | Charlotte | **Washington DC-VA-MD** — **7. New York City Metro** | **San Francisco**

8. San Francisco | Nashville | St. Louis — 8. Philadelphia | Chicago

9. Austin | Miami | Houston — 9. San Diego | Charlotte | Detroit

10. Raleigh-Durham | Cincinnati | Madison — 10. Raleigh-Durham | Phoenix

11. Seattle | Columbus — 11. St. Louis | Cleveland

13. Indianapolis | Dallas-Fort Worth | Portland | Los Angeles — 80 — 12. Boston | Minneapolis | Indianapolis

14. Kansas City | **San Jose (Silicon Valley)** | Minneapolis | Detroit — 13. Nashville | Cincinnati

15. Denver — 14. Kansas City | Portland | Columbus

16. Boston | Philadelphia — 15. Austin | Pittsburgh | **Seattle**

17. Cleveland | Salt Lake City - Provo — 16. Denver

18. New York City Metro

19. Chicago — 70

17. Madison

60 — 18. Salt Lake City - Provo

LEAST DIVERSE

Cities in red : Top 5 cities with the largest tech workforce

Best score = 100. All other scores are relative to the best

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What this ranking tells us

This ranking may seem counterintuitive when otherwise diverse cities get lower rankings or some obviously less diverse locations get a higher than expected rank. This ranking is only about the technology workforce as defined by the twelve occupations listed earlier.

Representative Diversity ranking show how these cities perform on equitable distribution of jobs with respect to local working populations. Raw Diversity looks at the sheer size of the different groups without any consideration of fair representation.

Metropolitan Areas that maintain higher ranks in both lists are truly diverse as they are not overly affected by either methodology.

Cities that do well in Representative Diversity but fall in Raw Diversity rankings have smaller parts of their populations that comprise of minorities but those groups are well represented in the workforce.

Cities that rank low in Representative Diversity but rise in Raw Diversity tend to have large parts of their population that are made up of minorities but are not equitably employed in the tech workforce.

Key findings

We find that White workers are quite fairly represented in the tech workforce and Asian workers are generally overrepresented in all 36 cities. Therefore, Black and Hispanic workers along with women in tech - groups that are underrepresented in the tech workforce, are the drivers of city diversity rankings.

Atlanta and Sacramento maintain high rankings in both representation and raw diversity and are therefore truly diverse in tech employment.

While Atlanta has a better representation of black and hispanic tech professionals, Sacramento has the highest female participation in its tech workforce and an above average presence of workers above the age of 55 years, while having a healthy representation of minorities.

San Jose (Silicon Valley), the apparent heartbeat of the tech industry, performs poorly in representative diversity. Asian workers have an oversized presence but other groups are highly underrepresented. Among the top 5 largest tech markets, Washington DC Metro outperforms Silicon Valley on diversity.

New York has the largest tech workforce in North America, but it is one of the least equitable when it comes to representation of minorities. Even in raw diversity numbers, New York performs uncharacteristically below par considering that it has one of the most diverse populations in the country.

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Photograph: Wil Stewart
Sacramento

Revealing statistics

At **21.40%** of the tech workforce, San Jose (Silicon Valley) ties with Salt Lake City region for the lowest female participation rate in the industry. Sacramento tops the list at **29.40%**, which tells us that the lack of women in tech is the biggest area of deficiency for diversity in the tech industry.

Our hypothesis was that in a youthful industry, older workers may face ageism. However, technologists in the age group of 55+ years seem to be valued and are employed on average at **1.22 times** the size of that working demographic. Seattle and San Francisco are the only locations where experienced workers are underrepresented at an index of less than **0.85.**

New York Metro Area may be the most diverse population in the entire United States but proportionately it has the highest representation of White professionals in the tech industry at **1.53 times** the local population. The national average stands at **1.07** in our study. Seattle and Sacramento underrepresented White professionals at **0.88** and **0.84** respectively.

Hispanics make up a little over **41%** of both Los Angeles and Miami's working populations. However, Hispanics make up only **16%** of the tech workforce in Los Angeles but nearly **28%** of the tech workforce in Miami, which is the highest in the country.
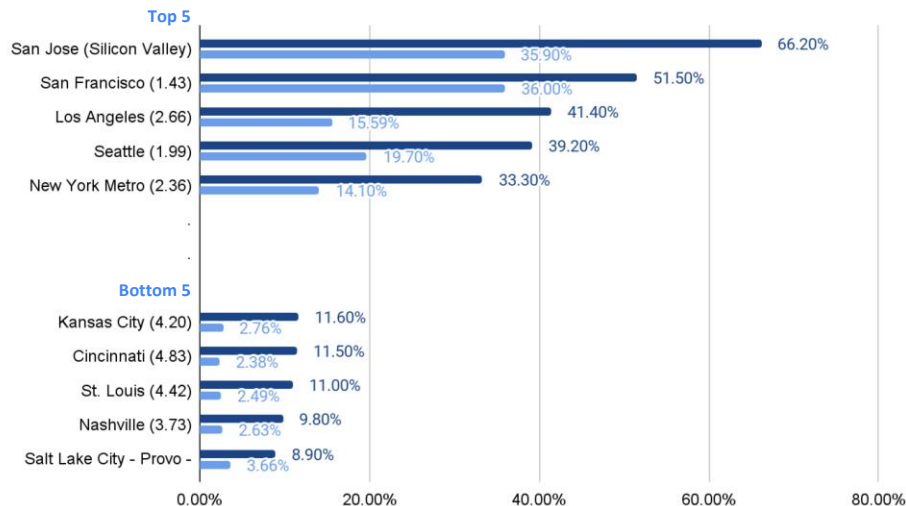
Atlanta and Baltimore, in keeping with their local demographics, have the highest percentage of Black tech workers. However, Phoenix and Austin are more equitable in representing their local Black population in their tech workforce at indices of **0.93** and **0.84** respectively.

Photograph: Christina @wocintechchat

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Tech workers of **Asian heritage**

■ % of Tech Workforce   ■ % of Local Population

Top 5

San Jose (Silicon Valley)	66.20% / 35.90%
San Francisco (1.43)	51.50% / 36.00%
Los Angeles (2.66)	41.40% / 15.59%
Seattle (1.99)	39.20% / 19.70%
New York Metro (2.36)	33.30% / 14.10%

Bottom 5

Kansas City (4.20)	11.60% / 2.76%
Cincinnati (4.83)	11.50% / 2.38%
St. Louis (4.42)	11.00% / 2.49%
Nashville (3.73)	9.80% / 2.63%
Salt Lake City - Provo -	8.90% / 3.66%

0.00%   20.00%   40.00%   60.00%   80.00%

San Francisco and Silicon Valley, a moniker for San Jose and its surrounding suburbs, have the most number of tech workers of Asian heritage. Overall, the San Francisco Bay Area accounts for the largest Asian population of any urban area by proportion, and consequently, the largest Asian tech worker population as well.

Asians make up 5.9% of the entire US population. St. Louis, Nashville, and Salt Lake City have the lowest Asian tech worker population as well as local Asian population. Almost half of the Asian population lives in the western half of the country, with the highest concentrations in the west coast cities.

Overall, people who identify as Asian make up a disproportionate part of the tech workforce everywhere in the United States. If 1.0 is the national average where an ethnic group is represented in the exact proportion of its presence in the local population, the lowest representation is 1.43 in San Francisco, and the highest in Pittsburgh at 5.51 times the local presence. The national average for the group is 3.48. It can be said that the Asian tech professionals are have a much higher representation in the tech workforce than any other ethnic group.

Six origin groups that make up 84% of all people of Asian descent in the United States
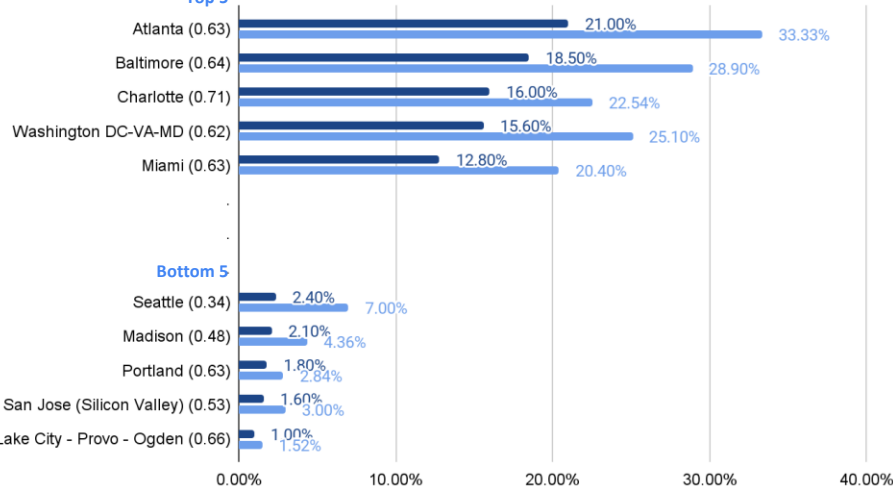
			Vietnamese	Japanese		
23%	20%	18%	9%	8%	6%	16%
Chinese	Indian	Filipino		Korean		Other
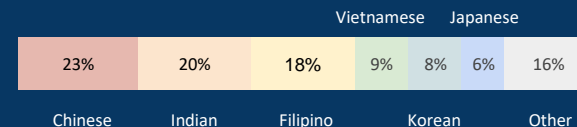
Pew Research analysis of 2019 American Community Survey

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Tech workers of **Black heritage**

■ % of Tech Workforce   ■ % of Local Population

Top 5

City	% of Tech Workforce	% of Local Population
Atlanta (0.63)	21.00%	33.33%
Baltimore (0.64)	18.50%	28.90%
Charlotte (0.71)	16.00%	22.54%
Washington DC-VA-MD (0.62)	15.60%	25.10%
Miami (0.63)	12.80%	20.40%

Bottom 5

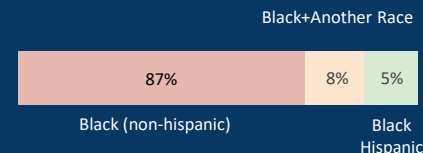| City	% of Tech Workforce	% of Local Population
Seattle (0.34)	2.40%	7.00%
Madison (0.48)	2.10%	4.36%
Portland (0.63)	1.80%	2.84%
San Jose (Silicon Valley) (0.53)	1.60%	3.00%
Salt Lake City - Provo - Ogden (0.66)	1.00%	1.52%

0.00%   10.00%   20.00%   30.00%   40.00%
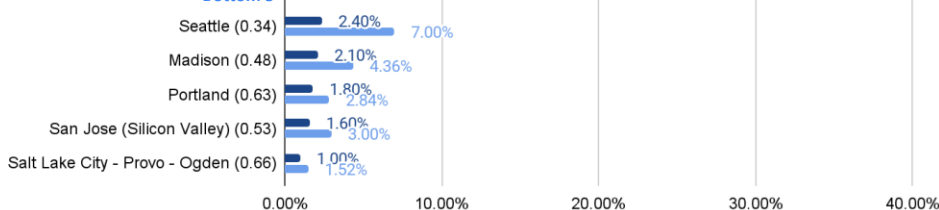
Black Americans make up approximately 12.5% of the national population. In that context, Atlanta, Baltimore, Charlotte, Washington DC-VA-MD and Miami lead in employing a tech workforce of Black heritage. **However, compared to their local populations, all the cities featured in the BeyondHQ Diversity Index under-represent their Black population.**

If 1.0 is the ideal average, where workforce is exactly representative of local population, then most cities are well below 1.0 for Black employees in tech occupations. Cities that have done well in representing Black professionals in their tech workforce are Phoenix (0.93) and Austin (0.84).
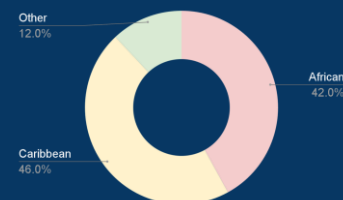
Over half the population that identifies as Black lives in the south of the country. Overall the Black population is underrepresented in the tech workforce. The average representation across the featured cities is only 0.58, which is about half of what is should be.

How the Black population of the United States identifies itself
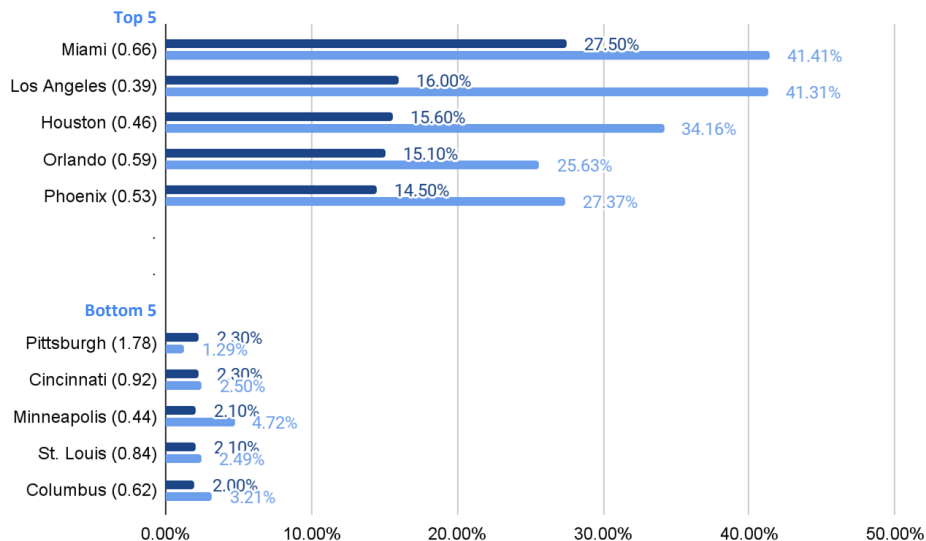
Black+Another Race

87%	8%	5%

Black (non-hispanic)   Black Hispanic

Pew Research analysis of 2019 American Community Census

Recent Black Immigrants

Other 12.0%
African 42.0%
Caribbean 46.0%

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Tech workers of **Hispanic heritage**

■ % of Tech Workforce   ■ % of Local Population

Top 5

City	% of Tech Workforce	% of Local Population
Miami (0.66)	27.50%	41.41%
Los Angeles (0.39)	16.00%	41.31%
Houston (0.46)	15.60%	34.16%
Orlando (0.59)	15.10%	25.63%
Phoenix (0.53)	14.50%	27.37%

Bottom 5

City	% of Tech Workforce	% of Local Population
Pittsburgh (1.78)	2.30%	1.29%
Cincinnati (0.92)	2.30%	2.50%
Minneapolis (0.44)	2.10%	4.72%
St. Louis (0.84)	2.10%	2.49%
Columbus (0.62)	2.00%	3.21%

0.00%   10.00%   20.00%   30.00%   40.00%   50.00%

Hispanic (Spanish speaking) and Latino (from Latin America) Americans make up 18% of the U.S. population, which translates to over 60 million. The top states by share of Hispanic population are California (26%), Texas (19%) and Florida (9%). Predictably, Miami, Los Angeles, Houston, Orlando, and Phoenix lead in the Hispanic share of tech workforce. **However, it is in cities that have more modest Hispanic populations where their representation in the tech workforce is proportionately greater than in the local population.** These cities are Baltimore, Cincinnati, and St. Louis, all of which index above or close to 1.0.
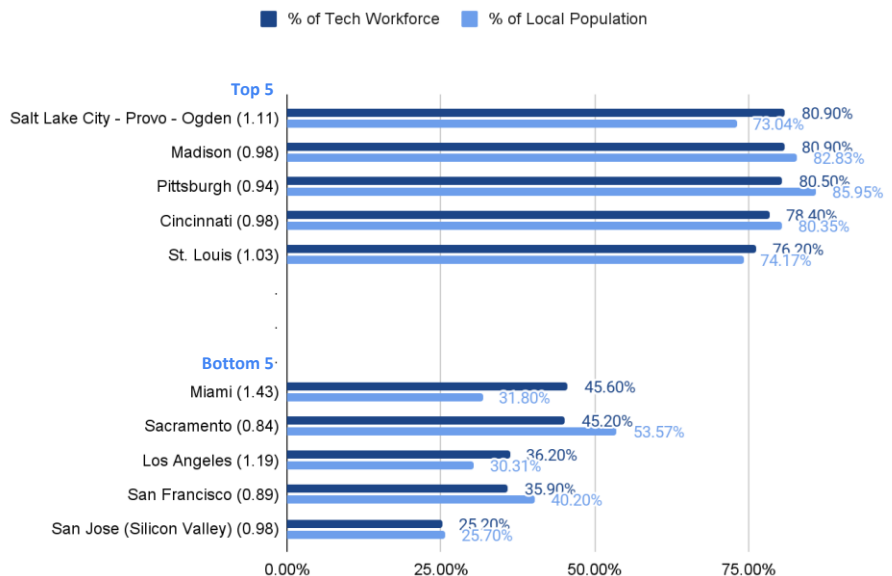
Overall, people of Hispanic origin are underrepresented in the tech workforce, the national average being 0.55 (1.0 being fully representative). Ironically, the largest tech markets of Silicon Valley (San Jose Metro) and New York have the lowest proportion of Hispanic workers in technology related occupations in the country.

Hispanic population of the United States by origin

					Dominican	
				South American		
	Puerto Rican					All Other
61%	10%	8%	5%	4%	3%	1%	3%
Mexican		Central American		Cuban			
						Spaniard	
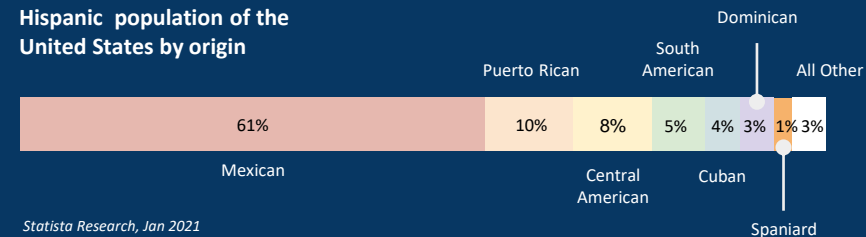
Statista Research, Jan 2021
Pew Research, Sep 2019

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White American tech workers

% of Tech Workforce   **% of Local Population**

Top 5

City		
Salt Lake City - Provo - Ogden (1.11)	80.90% / 73.04%	
Madison (0.98)	80.90% / 82.83%	
Pittsburgh (0.94)	80.50% / 85.95%	
Cincinnati (0.98)	78.40% / 80.35%	
St. Louis (1.03)	76.20% / 74.17%	

Bottom 5

City		
Miami (1.43)	45.60% / 31.80%	
Sacramento (0.84)	45.20% / 53.57%	
Los Angeles (1.19)	36.20% / 30.31%	
San Francisco (0.89)	35.90% / 40.20%	
San Jose (Silicon Valley) (0.98)	25.20% / 25.70%	

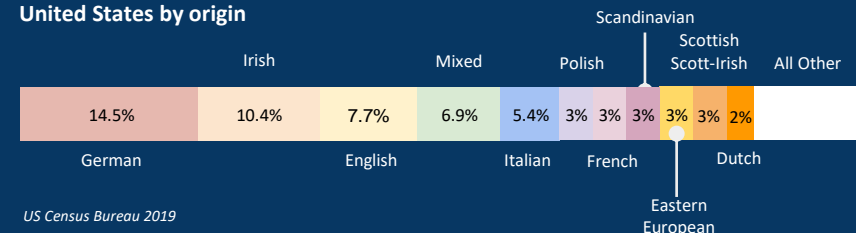0.00%   25.00%   50.00%   75.00%

The Census Bureau defines White people as "a person with origins in the original peoples of Europe, the Middle East, or North Africa". They are also referred to as Non-Hispanic Whites, who make up 60% of the population of the United States. All self-reported white people make up 71% of the US population.

In the technology occupations, White Americans are an overall majority, but at an average of 1.07 in our study, are moderately overrepresented in the tech workforce (proportionate representation being 1.0).

Cities in the mountain states, like Denver and Salt Lake City and cities in the Midwest like Chicago and have the highest representation of White workers. However, that is a reflection of the local demographics.

Ironically, New York, one of the most diverse cities in the country, has the most disproportionate overrepresentation of White workers in the tech workforce at 1.53. On the other end, Seattle, where two-thirds of the local population is White, they are the second most underrepresented in the tech workforce of any city in our study, at an index of just 0.88. In Silicon Valley, the center of the technology industry, White tech workers are proportionately represented.
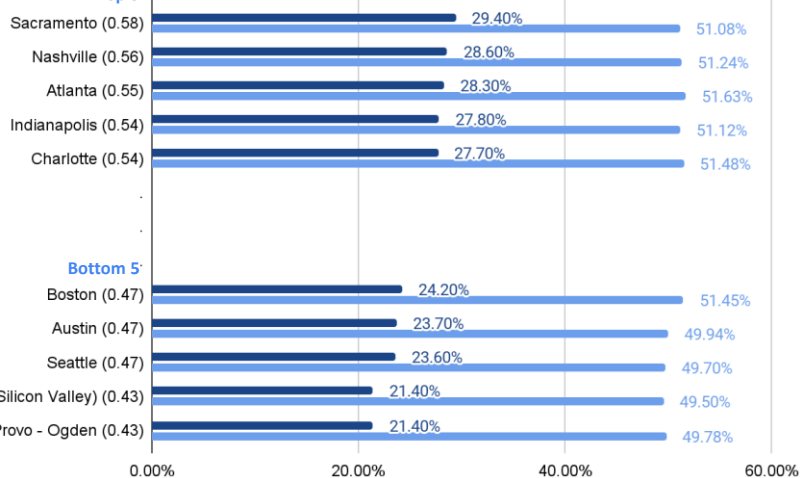
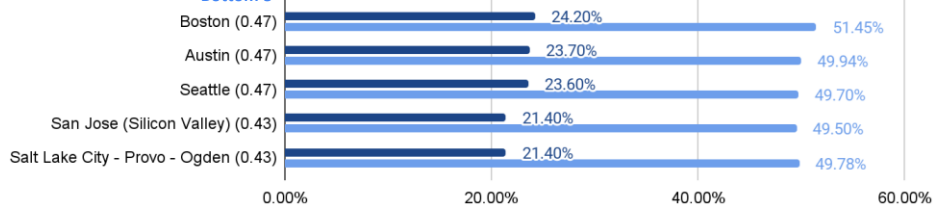**White population of the United States by origin**

German	Irish	English	Mixed	Italian	French	Polish	Eastern European	Scandinavian Scott-Irish	Scottish	Dutch	All Other
14.5%	10.4%	7.7%	6.9%	5.4%	3%	3%	3%	3%	3%	2%	

US Census Bureau 2019

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Women in tech workforce

■ % of Tech Workforce   ■ % of Local Population

Top 5

City	% of Tech Workforce	% of Local Population
Sacramento (0.58)	29.40%	51.08%
Nashville (0.56)	28.60%	51.24%
Atlanta (0.55)	28.30%	51.63%
Indianapolis (0.54)	27.80%	51.12%
Charlotte (0.54)	27.70%	51.48%

Bottom 5

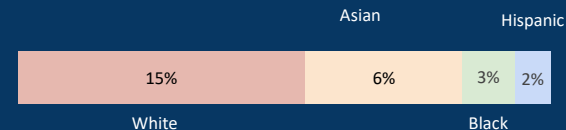| City	% of Tech Workforce	% of Local Population
Boston (0.47)	24.20%	51.45%
Austin (0.47)	23.70%	49.94%
Seattle (0.47)	23.60%	49.70%
San Jose (Silicon Valley) (0.43)	21.40%	49.50%
Salt Lake City - Provo - Ogden (0.43)	21.40%	49.78%

0.00%   20.00%   40.00%   60.00%

In software development and systems design and engineering occupations, which are the most highly valued skills in the technology industry, women make up 22% of the tech workforce. This is true for cities where there are at least 10,000 tech jobs in the above occupations.

If all tech occupations are considered then the female labor participation rises to a still abysmal 26% nationwide, which would also include smaller communities. Overall, across all occupations, women make up 53% of the workforce in the United States.
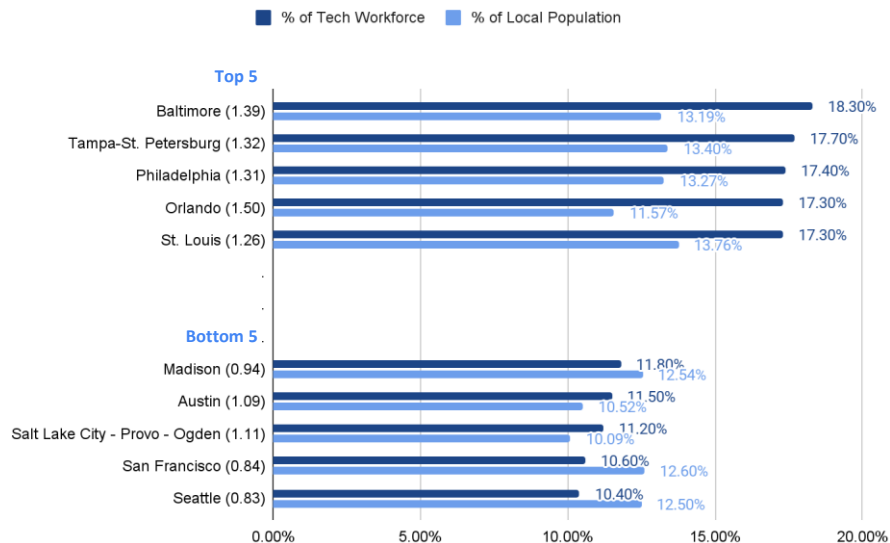
In our study, we found that Sacramento at 29.4% had the highest female labor participation in core tech occupations. Nashville, Atlanta, Indianapolis, and Charlotte followed close behind at an index of roughly 0.55.

Boston, Austin, Seattle, San Jose (Silicon Valley) and Salt Lake City, were at the bottom of the table with below average female labor force participation in tech occupations. Silicon Valley has the lowest female participation in tech roles of any market. In the same region, San Francisco does much better at an index of 0.52.

Breakdown of the 26% female representation in core tech occupations by race

		Asian		Hispanic
15%		6%	3%	2%
White			Black	

Statista 2021

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Mature workers in tech workforce

■ % of Tech Workforce   ■ % of Local Population

Top 5

Metro	% of Tech Workforce	% of Local Population
Baltimore (1.39)	18.30%	13.19%
Tampa-St. Petersburg (1.32)	17.70%	13.40%
Philadelphia (1.31)	17.40%	13.27%
Orlando (1.50)	17.30%	11.57%
St. Louis (1.26)	17.30%	13.76%

Bottom 5

Metro	% of Tech Workforce	% of Local Population
Madison (0.94)	11.80%	12.54%
Austin (1.09)	11.50%	10.52%
Salt Lake City - Provo - Ogden (1.11)	11.20%	10.09%
San Francisco (0.84)	10.60%	12.60%
Seattle (0.83)	10.40%	12.50%

0.00%   5.00%   10.00%   15.00%   20.00%

Over 60% of technology workers are between the ages of 22 and 44. **Older workers reportedly face age related discrimination and find it hard to get hired.** We looked at how well the 55+ age group was represented in the tech industry to understand if ageism results in disproportionate under-employment of seasoned workers.

In our sample of 36 metro areas, tech workers over the age of 55 makeup 15.1% of the tech workforce. On average, the 55+ demographic makes up 12.4% of the population across these metros. Therefore we find that this demographic is actually a bit overrepresented in the industry. However, this does not disprove ageism in the workplace in any way. Older workers could still face lower upward mobility and find themselves excluded from important decisions. This is not the scope of our study but we will address it in upcoming research.

Even though the 55+ demographic is well represented, it is not so uniformly across occupations or locations. San Francisco and Seattle are two locations where the 55+ workers are very underrepresented. These two cities have a younger demographic, however, there is also a severe shortage of talent. This fact makes underrepresentation of experienced workers even more glaring.

Baltimore, Tampa-St. Petersburg, Philadelphia, Orlando and St. Louis lead in employment of experienced workers.

55+ workers are found in greater proportion in back of the house / infrastructure jobs and are more likely to be underrepresented in front of the house / software development jobs.

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Key takeaways

Overall, Asian tech workers are overrepresented in the tech workforce. Black and Hispanic workers are highly underrepresented. Women are the least represented group in tech workforce. Surprisingly, White tech workers are quite overrepresented in the large cities like New York, Chicago, Houston, Miami, and Orlando, that otherwise have highly diverse working populations.

Workers over the age of 55 are slightly overrepresented in the tech workforce, even in the face of reported ageism in the workplace. Seattle and San Francisco are the only two major tech markets that fail to employ this age group fairly.

Women in tech are highly underrepresented in all markets. Although Sacramento, Nashville, and Atlanta fare better than other metros, they still have a long way to go to be equitable with women in tech. The biggest tech markets of New York and Silicon Valley are some of the worst offenders when it comes to female participation in the tech industry.

New York metro has the largest tech workforce of all metropolitan areas and the most diverse working population of any city in the country. This makes it even more egregious that Black and Hispanic workers and women are some of the most underrepresented in the New York tech workforce, while White professionals are overrepresented at 1.53 times the local working population. (1.0 is equitable)

On the other extreme, Seattle's overall workforce is roughly two-thirds white, a reflection of its demographics, but the tech workforce underrepresents this group at an index of only 0.88.

Points to ponder for employers

Achieving meaningful diversity in the workplace is a goal of most employers. Here are some inferences from this study for developing a workforce strategy:

- Larger tech markets mostly perform poorly in achieving diversity in the tech workforce. Small and mid-sized markets may be the key to achieving overall workforce diversity targets.

- If supply of talent among some groups is small, then it may serve the tech companies' interest to build skills through cooperation with community colleges along with apprenticeship / co-op programs, instead of relying on traditional supply of graduates.

- In markets with severe shortage and high demand for talent, employing more experienced workers (55+ age group) should be made a priority.

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BeyondHQ is a technology company that is making the corporate location decision making process more accessible and efficient. For complex decisions companies hire consultants, but a majority of location decisions are made internally by the companies themselves. BeyondHQ enables better decision-making in a shorter period and at a lower cost.

We bring employers and communities together.

About the Author

Rajeev Thakur leads workforce strategy and consulting services at BeyondHQ. Trained as an architect and urban planner, Rajeev has facilitated corporate location decisions across industries and geographies for over fifteen years.

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