

NOVEMBER 2021

# THE STATE OF CHICAGO TECH TALENT

Strategies to Build a More Inclusive  
Tech Workforce for Chicago



**P33 & Chicago Tech  
Talent Coalition**



# Background

**T**echnology and business leaders launched P33 as a non-profit in 2019 to grow Chicago's technology economy and make Chicago the country's most inclusive technology city.

Expanding and diversifying our technology workforce is one of our two priorities, alongside efforts to support Black and Latinx tech founders in Chicago. Ultimately, P33's Talent Solutions team works to ensure that Chicago companies are thriving with a tech workforce that reflects the city.

Our efforts emanate from the Chicago Tech Talent Coalition that we launched in 2020 with influential Chicago companies who wanted to help shape new talent solutions, and who understood that some efforts can only achieve large impact if done together. These companies committed the time of C-suite technology and talent leaders, and a willingness to help develop, test and scale solutions. As of November 2021, the Talent Coalition includes 39 companies representing \$1T in global revenue, and over 100K Chicago-area employees.

Most of our efforts have been focused on designing and launching new solutions to attract talent to Chicago, building stronger talent pipelines, and diversifying the tech workforce. This report is a recognition that P33 also has a critical role to play in providing market intelligence to Chicago's educators, business executives, and public officials, to clarify the challenge we face, and highlight solutions we can pursue individually and collectively to advance inclusive growth.

In particular, this report answers two questions we get from our partners across the city:

- “How can we help more Black, Latinx, female and low-income individuals get access to these great tech jobs? What even are these jobs? And what profile should somebody have to get them?” We hear this question from colleges, training providers, government officials and philanthropies.
- Companies ask us, “How can we hire, retain and develop more Black, Latinx, and female tech employees?”

The audiences for this report are several: Companies, Colleges, Educators, Workforce Development professionals, philanthropic foundations, and elected officials.

And this report is a unique asset because it has real data drawn from local companies and colleges, and is Chicago-focused in context and its conclusions. We drew on five key sources:

- A survey of 25 of our Tech Talent Coalition companies, who shared insight and data not previously captured for Chicago at this scale with this detail;
- Four strategic planning and solution-design sessions with company executives;
- Three topic-focused forums with groups of 15–20 technology and talent executives;
- 100+ one-on-one conversations with these corporate and start-up leaders; and
- Deep analysis of college enrollment and graduation data disaggregated by academic major, as well as student race, ethnicity and gender.

# Chicago Tech Talent Coalition

accenture Allstate. AON ASCENT AVANT CATERPILLAR CDW CIVIS

Cognizant CONAGRA FACEBOOK G2 Google GRAINGER GROUPON HCSC

JPMORGAN CHASE & Co. kin. KPMG M M Microsoft MORNINGSTAR

MOTOROLA SOLUTIONS narrative science NORTHERN TRUST OCIDENT

provi Relativity Rheapy salesforce

slalom SPOT HERO TransUnion UL

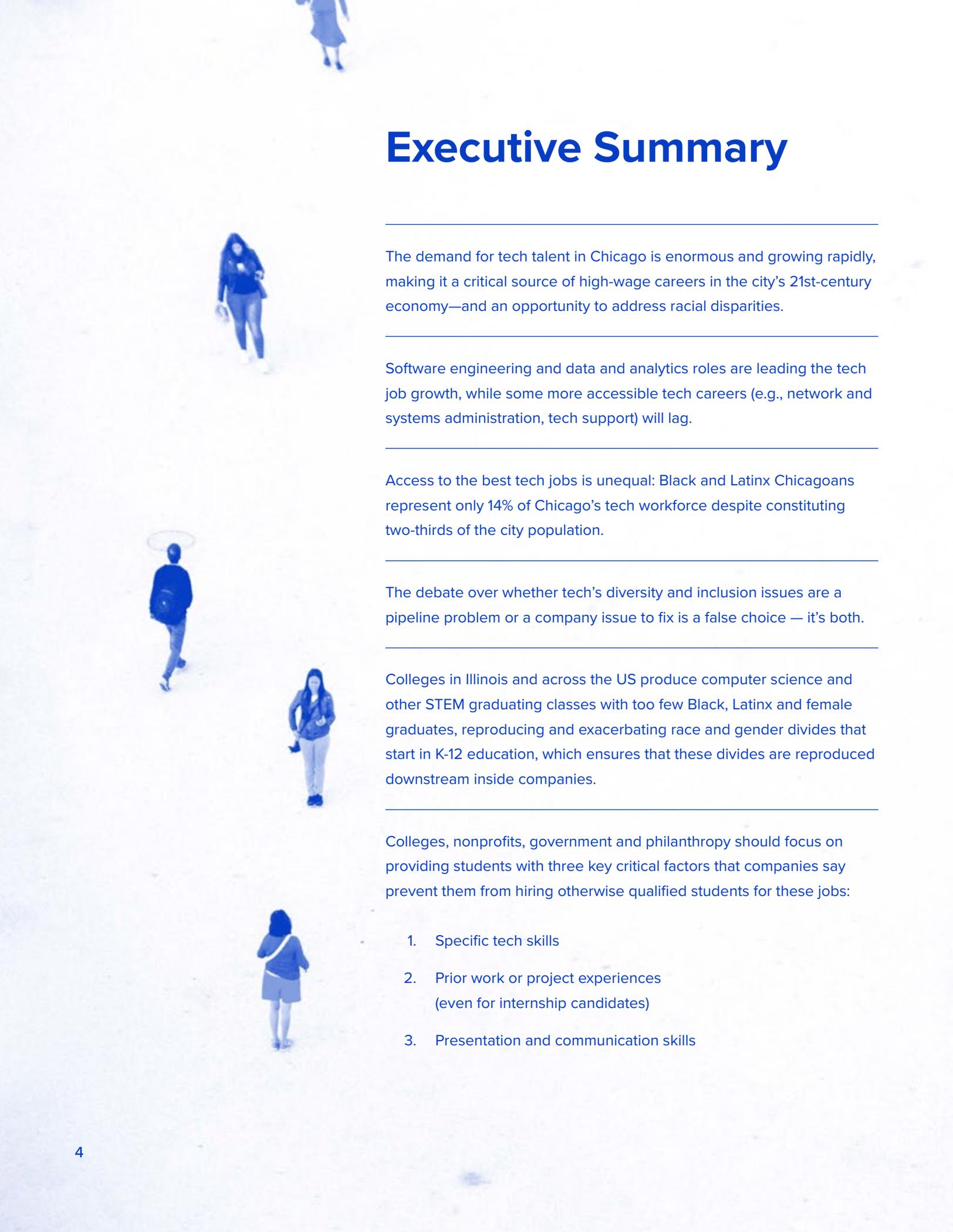
UNITED AIRLINES US FOODS wolverine ZEBRA

39

Companies

100K+

Local Employees

An aerial, high-angle photograph of a city street, likely in Chicago, showing several people walking in various directions. The image is in a light, desaturated color palette, possibly blue or grey. The people are scattered across the frame, with some closer to the foreground and others further away. The street is wide and appears to be a pedestrian-friendly area.

# Executive Summary

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The demand for tech talent in Chicago is enormous and growing rapidly, making it a critical source of high-wage careers in the city's 21st-century economy—and an opportunity to address racial disparities.

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Software engineering and data and analytics roles are leading the tech job growth, while some more accessible tech careers (e.g., network and systems administration, tech support) will lag.

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Access to the best tech jobs is unequal: Black and Latinx Chicagoans represent only 14% of Chicago's tech workforce despite constituting two-thirds of the city population.

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The debate over whether tech's diversity and inclusion issues are a pipeline problem or a company issue to fix is a false choice — it's both.

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Colleges in Illinois and across the US produce computer science and other STEM graduating classes with too few Black, Latinx and female graduates, reproducing and exacerbating race and gender divides that start in K-12 education, which ensures that these divides are reproduced downstream inside companies.

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Colleges, nonprofits, government and philanthropy should focus on providing students with three key critical factors that companies say prevent them from hiring otherwise qualified students for these jobs:

1. Specific tech skills
2. Prior work or project experiences  
(even for internship candidates)
3. Presentation and communication skills

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Companies should take five actions to address their own persistent diverse talent challenges and to help Chicago become the most inclusive tech city:

- **Make it your business** to provide diverse and low-income undergraduate students with project opportunities and exposure to professional tech environments.
- **Source talent from a wider network** of colleges than you currently use. While it is true that colleges do not graduate classes that represent the population, most companies focus recruitment at schools with even less diversity than average, nearly ensuring that entry-level hires skew heavily White and Asian.
- **Review hiring requirements and screening practices** that disadvantage underrepresented groups while causing you to miss out on enormous talent that had to navigate more challenges to get to and through college.
- **“Do the work” on your internal culture**, and improve diversity in the leadership ranks, to ensure diverse hires want to work for your company, that they thrive there, and that they want to stay.
- **Capture and share data**—at least internally—on diversity and inclusion, to enable focusing investments on the biggest challenges and opportunities, and to mobilize multiple internal stakeholders to get involved in building solutions.

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# OUR CHOICE TO MAKE: WILL TECH ADDRESS OR EXACERBATE CHICAGO'S INEQUITIES?

## PART 01

**C**hicago should prioritize preparing young people for technical occupations because they are the most promising source of high-paying stable careers, they facilitate economic growth, and they have the potential to make a big dent in income and wealth inequality in Chicago.

The demand for tech talent in Chicago is enormous and growing rapidly. This is not just about the “tech” sector; software engineers, DevOps, and data architects are in high demand from insurance to industrials, FinTech start-ups to 100-year-old banks. Chicago is famously a well-diversified economy, but all of our industries share this need for tech hires. Government data projects it. The big consultancies predict it. Online job boards see it clearly. And the companies here in Chicago tell us directly.

Seven of the top ten jobs on Glassdoor’s list of the “Best Jobs in America” based on salary, number of jobs, and job satisfaction are tech or tech-adjacent.<sup>1</sup> The highest-paying job on the U.S. Bureau of Labor Statistics’ list of fastest growing occupations is software development, with a median wage of over \$100,000.<sup>2</sup> And McKinsey Global Institute predicts a growing importance to tech in the labor market overall, projecting 60% growth in the number of work hours dedicated to the use of technological skills.<sup>3</sup>

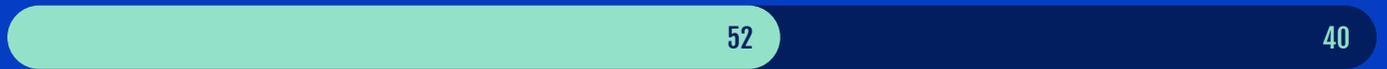
# Like it or not, tech is where the good jobs are going to be.

## Chicago's Digital Workforce Dynamics

Percent of respondents predicting an increase in demand for given technical occupations over the next three years in Chicago.

Significant Increase █ Some Increase █

### Software Engineering



### Cloud Computing



### Data & Analytics



### DevOps



### Cybersecurity



### Product Development



### Network & Systems Admin



### Tech Support



Source: Survey of Chicago Tech Talent Coalition companies by P33, 2021; n=25

A person wearing a dark hoodie and a cap is seen from the side, looking over the top edge of a tall, light-colored corrugated metal wall. The wall has a vertical ribbed texture and shows some signs of wear and discoloration. The background is a plain, light sky.

**P**33's research with our Chicago Tech Talent Coalition companies echoes these themes. Business leaders at companies new and old, large and small, "tech" and otherwise, have shared that engineering and data talent are the largest areas of hiring need, with nearly constant job openings. And they all expect the tech talent crunch to get worse. The demand for these roles is driven by the launch and growth of tech-centric start-ups on the one hand, and by digital transformations at established companies on the other hand. The COVID-19 pandemic has only exacerbated the issue by accelerating digital transformations.

If Chicago wants to create intergenerational economic mobility and address racial inequities, it must diversify access to these high-wage tech jobs.

# Access to the best tech jobs is unequal.

# 14%

## Median First-Year Salary, Computer Science Graduates in Illinois

**Top 3 Institutions** 5% Black & Latinx

\$109K

**All Other Illinois Institutions** 15% Black & Latinx

\$62K

Black and Latinx Computer Scientists are **3x less likely** to receive a degree from the three Illinois colleges whose students receive \$100K+ salaries in the first year out of college.

Source: Board of Higher Education; US Department of Education College Scorecard

The majority of Chicago’s population is Black or Latinx, but those groups hold only 14% of the best tech jobs in the city, according to data that companies shared with us.<sup>1</sup>

This reality results from shortcomings in the education pipeline as well as barriers erected—intentional or not—by company practices. With companies focused on hiring already-experienced technical talent or cherry-picking the “best” talent from a post-secondary education system that itself produces inequitable outcomes, current practices compound the problem. Opportunity is cumulative, and so is the opportunity gap.

Companies are making progress: intern and entry-level hiring classes are more diverse than companies’ full technical workforces.<sup>1</sup> If companies provide the environments, culture and support to those younger staff to thrive, overall tech diversity in the city should improve each year, and tech’s growth can take Chicago closer to inclusive growth with the whole city thriving.

But there is a long way to go. And if the city’s response is unequal to the challenge, tech’s growth will exacerbate Chicago’s economic and social fissures.

**P**rogress has been made toward gender diversity, driven by a combination of high female college enrollment and intentional business efforts. More than 40% of entry-level hires for tech roles in Chicago are currently women. Yet due to the time it takes to counteract decades of gender bias, and higher attrition out of these roles (for several reasons), women remain underrepresented: only 30% of Chicago's technical workforce is female, per company data.<sup>1</sup> Note, established corporations are performing better on this metric than start-ups.

The story on race and ethnic diversity is more bleak. Black and Latinx populations remain dramatically underrepresented in Chicago tech roles; companies would need to increase the size of Black entry-level hiring cohorts by 3.3x to match population demographics, and 2.6x for Latinx populations. Bold measures applied at a large scale are necessary to address these disparities.<sup>1</sup>

## **It's not only a pipeline problem, but it is a pipeline problem.**

Too few of our education and workforce efforts and investments focus on expanding access to the best tech jobs, and it is doing a disservice to young people and those not born affluent and well-connected. To identify the pipeline as part of our tech DEI challenge is not to blame the individuals, but to highlight the persistent failure of multiple systems—you might say society.

# 600

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We estimate that the state of Illinois is losing out every year on 600 Black and Latinx graduates in computing—600 diverse computing professionals every year that our companies are so hungry for and that we are failing to produce.<sup>2</sup>

**T**he gap is the result of systemic failures across the college-to-career pipeline: under-enrolling underrepresented minorities in bachelor's degree programs, then into computing majors, and then supporting them to graduate with those degrees. As a result, fewer than 4% of bachelor's degrees in Computer Science recipients from Illinois colleges (excluding for-profit institutions) are awarded to Black students and fewer than 12% to Hispanic students—despite these groups making up more than 30% of Illinois' population.<sup>3</sup>

We focus here on college, but the pipeline leaks earlier: very few high school students receive quality computer science exposure, and too few students of color receive proper preparation in the math needed to succeed in post-secondary STEM programs. Illinois high schools graduate 85% of their Black students without meeting college readiness math standards, and with only about 1% “exceeding” the basic standards (the rest “meet” the basic standards).<sup>4</sup> Hispanic and Latino students fare slightly better: 3% exceed college readiness math standards with 73% not meeting the basic standards.<sup>1</sup> If students are entering colleges without competence and confidence in math, they are unlikely to enroll and succeed in quantitatively rigorous tech majors. Focusing on Chicago, where more than 70% of residents under 18-years-old are Black or Latinx, it is clear that addressing these education challenges is an existential issue for the city.

# Diversity hiring initiatives are an insufficient response from business.

**T**he sobering math statistics of the STEM education pipeline makes clear that diversity sourcing alone will not address companies' talent and DEI challenges, nor will it move the needle for Chicago. Companies need to be engaged earlier in the talent development pipeline to grow the talent pool and reduce inequities.

George Floyd's murder and the social unrest around racial inequity in 2020 motivated companies to seek more diverse hires and create new partnerships with organizations that promise access to Black and Latinx talent in particular. Many of our company partners are especially interested in P33's potential to help them find diverse early-career talent. That appetite is spiriting and creates an opportunity. But if this amounts to 40 companies hoping somebody can find them the Black female engineering graduate that nobody else happened to find, this is a losing game for everybody. Literally: Illinois institutions only awarded bachelor's degrees in Computer Science to 19 black women in 2020.<sup>5</sup>

Company efforts generally intervene too late or at too small of a scale to have much impact on tech's DEI challenges or to materially improve opportunity in Chicago—or even to improve individual company diversity in a meaningful way. Company diversity hiring efforts are further undermined by entrenched hiring practices that devalue nontraditional backgrounds and set arbitrary requirements for consideration.

Companies must be involved earlier in the education journey, helping develop talent and providing opportunities for underrepresented students to build social capital in tech.

**“COMPANIES  
CAN'T WAIT FOR  
TECH TALENT,  
THEY MUST HELP  
DEVELOP IT.”**

# For Chicago to thrive with equity in tech, everybody has a role.

## Companies

Get involved earlier in the education pipeline, sharing some young professional time to provide opportunities for students of color to work on relevant projects, to get exposure to the companies and job types that are available in Chicago, and to help students build social capital in a field too oriented around White and Asian men. P33 can help find the way into a partnership that works for your company.

- Start-ups have a unique opportunity to embed transformative D&I practices and culture into the organization before it grows habits and systems that are hard to change.
- Large corporations can create huge impact quickly due to their size if they revise the hiring requirements and screening practices that lead to homogenous interviewing slates – experiment with more open approaches to talent sourcing.

## Colleges

Embed in existing curriculum the specific skills, languages, and methodologies that companies screen for in hiring—whether Javascript for engineers or SQL for aspiring data and analytics professionals.

## Government, Philanthropy, Nonprofits

Rebalance your investments to support systems- change and programs that will help young people of color get access to high-skill roles in software engineering and data that can provide intergenerational impact on income and wealth. Tech Support and Systems Administrator roles can be great stable jobs, but they are not growing and do not offer as much economic upside. We as a city should be working on creating equal access to the best jobs.

# DEMYSTIFYING DEMAND

## PART 02

**S**oftware engineering and data-centric roles are driving tech talent demand growth in Chicago and the demand consistently outpaces supply.

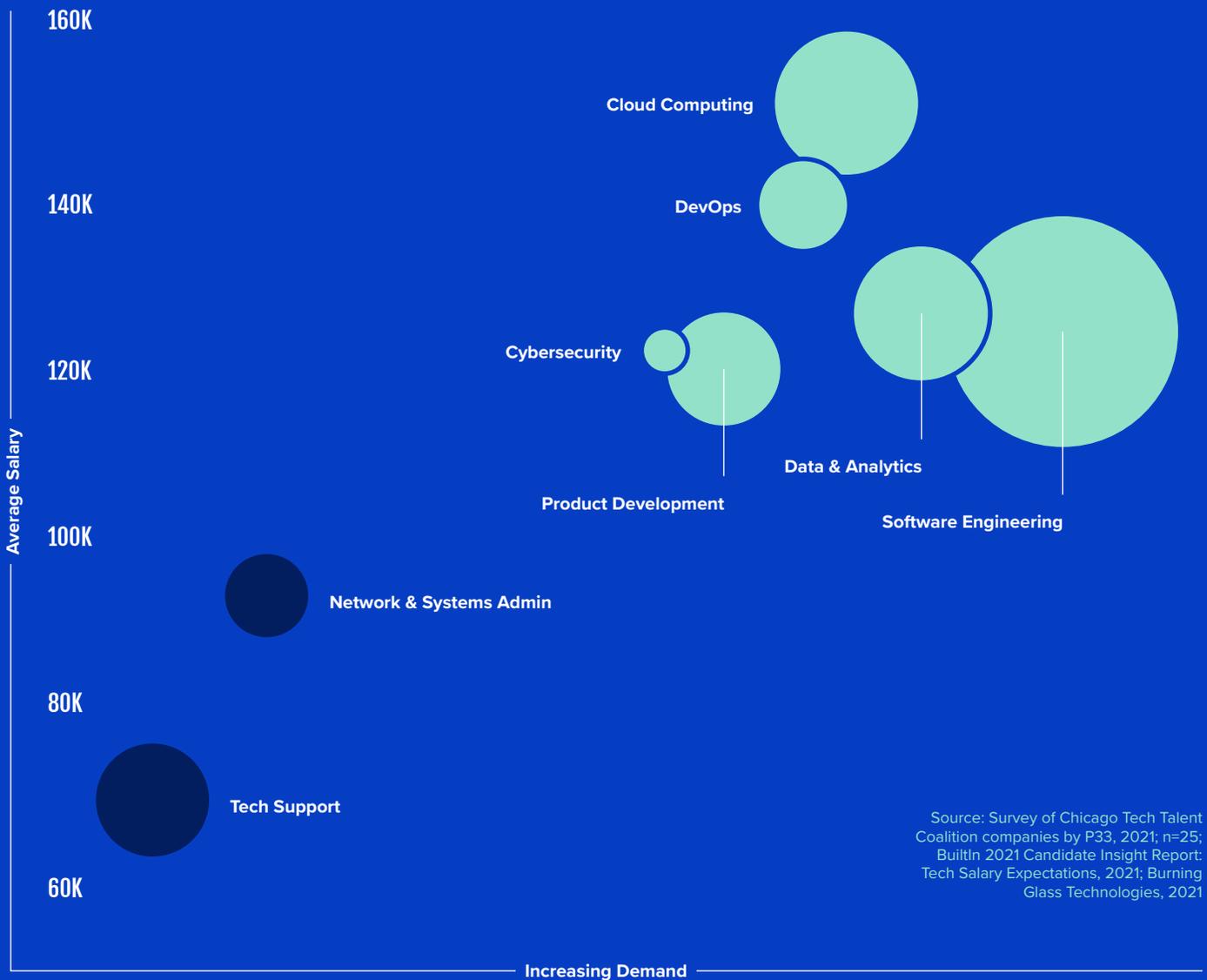
We surveyed our company partners on eight categories of jobs: software engineering, data and analytics, cloud computing, cybersecurity, product development, DevOps, network and systems administrators, and tech support. These job categories are broad, and include some things that sound the same to the general audience but are quite different in practice. For instance, data and analytics includes roles such as data architects and data engineers on the one hand, and data scientists and business analysts on the other—these are different career tracks and require different backgrounds. But these job categories give us a strong sense of the direction of hiring within Chicago tech, and point us to where there will be opportunity to invest in preparing young Chicagoans with the most in-demand skill sets for tech careers.

# Software and data are the keys to career opportunity.

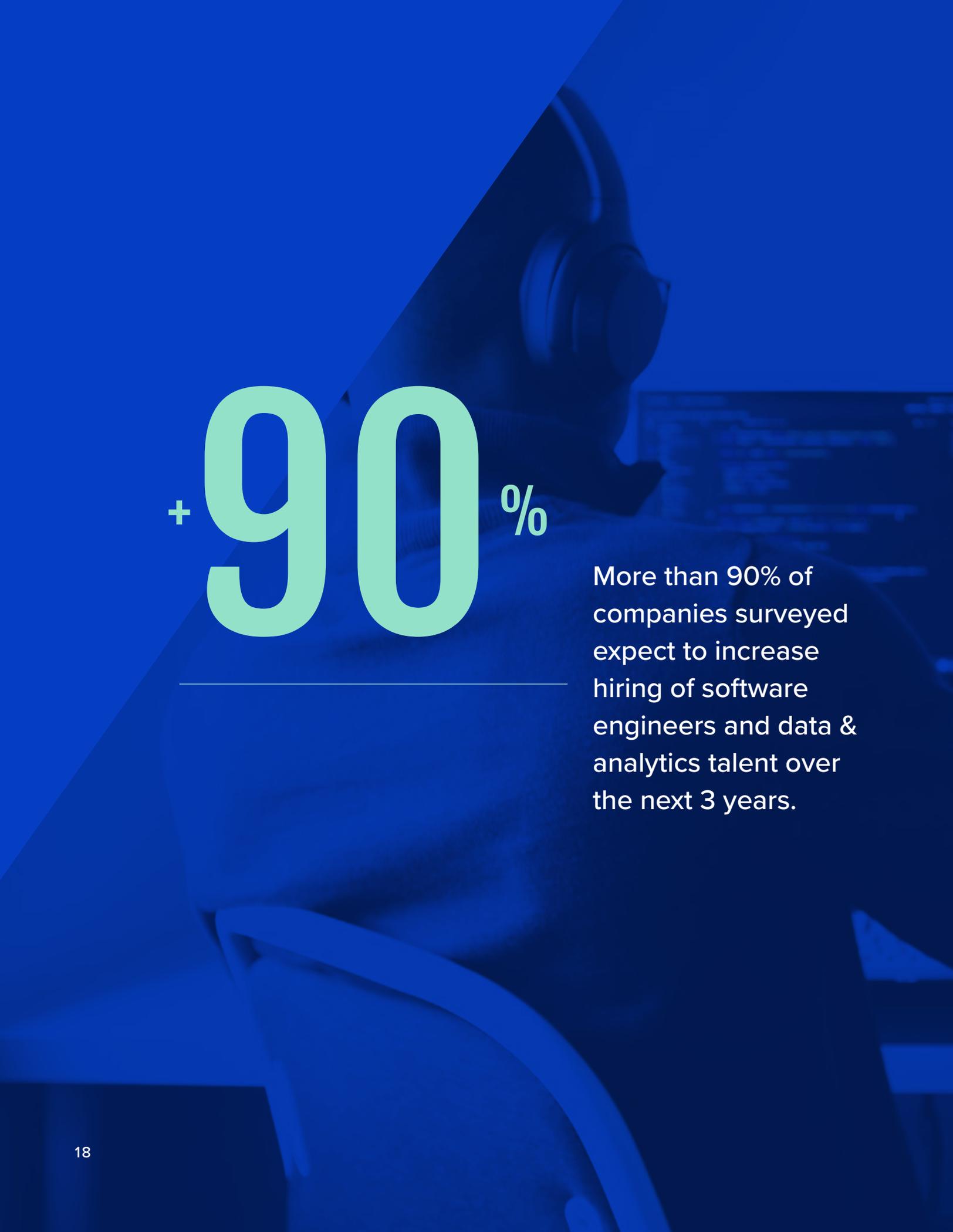
## Chicago's Digital Workforce Dynamics

Bubble size equals size of tech workforce in Chicago.

High-wage, high-growth roles 



Source: Survey of Chicago Tech Talent Coalition companies by P33, 2021; n=25; BuiltIn 2021 Candidate Insight Report: Tech Salary Expectations, 2021; Burning Glass Technologies, 2021



+90%

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More than 90% of companies surveyed expect to increase hiring of software engineers and data & analytics talent over the next 3 years.

A person in silhouette is pointing at a computer monitor that displays lines of code. The background is a solid blue color with a diagonal white line separating the top-left and bottom-right sections.

**S**oftware engineers constitute the largest share of the tech labor force in Chicago and also will enjoy the largest growth in new roles over the next three years. 92% of companies surveyed expect to increase employment of software engineers over the next three years in Chicago, with 50% of companies anticipating a significant increase. Other roles that involve engineering competencies—such as Cloud Computing and DevOps—are also projected to grow rapidly. This underscores the importance of colleges and workforce programs equipping learners with some foundational software fluency.

Data and Analytics roles are also poised for robust growth. 96% of all companies surveyed expect an increase in these roles over the next three years, with 33% of companies anticipating a significant increase. This reflects the data-centricity of both large corporations and start-ups, and should be read by colleges, high schools and students as an urgent call to ensure that students are graduating with quantitative literacy as well as familiarity with some key data management and analytics tools in widespread use.<sup>6</sup>

# Access is restricted.

**D**igging deeper into the tech growth story unearths at least three dynamics that make it more difficult for some Chicagoans to take advantage of lucrative tech opportunities, and that will make it more difficult for companies and the city to achieve shared goals around diversity and inclusion in tech: (1) flat or declining demand for the most “accessible” roles; (2) a much larger focus on hiring experienced talent than entry-level talent; and (3) hiring practices that reinforce inequities.<sup>7</sup>

## **Accessible roles are declining.**

Only two roles we explored—network and systems administration, and tech support—are expected to see flat or declining demand. These roles, which tend to have lower requirements for educational qualifications and technical competencies—and offer significantly lower salaries—than the other roles we explored, are more accessible entry points to tech for those without traditional backgrounds, and so tend to be where much of the I.T. workforce training efforts nationally and locally are focused. But the data from the Talent Coalition companies’ projections suggest that this is not an employment growth area and might provide only minimal lift to economic advancement efforts.<sup>8</sup>

This reality will also hinder companies’ ability to increase diversity in their tech workforce, since these roles generally have a higher share of Black and Latinx staff than other technical roles. For companies to reach their stated representation goals, and for Chicago to develop a tech workforce that reflects the regional demographics, companies will need to focus more on interventions in engineering and data-related career paths.

## Hiring practices reinforce inequities.

Degree requirements, GPA requirements, sourcing from a small and nondiverse set of colleges, preferencing those who had access to earlier career development opportunities, and a tendency to hire people similar to oneself with similar background and skills all serve to disadvantage students of color and low-income students in the tech internship and job search. Students not at the three top-ranked schools in Illinois have much less access to tech career development resources, and much less access to companies.

In testing new recruiting models with the Coalition companies, we see companies expressing an interest in hiring more diverse talent, but falling back on habits and practices that lead them to reject the résumés of diverse candidates. This has led to productive, difficult conversations with those companies, some of which—to their credit—have rethought their position and expanded their talent aperture. But at most companies, a gauntlet of challenges face candidates without a “traditional” background.

# Experienced talent is getting the attention.

**M**ost recruitment effort right now is focused on experienced talent, as this is where companies face the most difficulty in trying to fill key roles. We asked survey respondents to highlight the three roles (considering function and experience level) where they are having the most difficulty filling roles. The top six responses were all at the experienced level (2–8 years relevant experience) and not at the entry level (less than 2 years of relevant experience), and roughly 75% of respondents highlighted only experienced roles.<sup>9</sup>

This is not a problem in its own right, but it partially negates what might seem to be an opportunity: companies are most open to considering new sources of talent, and making new investments in talent development, when they are struggling to fill critical roles. But to the extent that those hard-to-fill roles are for experienced talent, companies are less likely to invest in new on-ramps into tech careers. Moreover, conversations with some talent leaders at our partner companies indicate a low opinion and frustrating past experience with some talent development programs intended to help adults with work experience transition newly into roles such as software engineering. These “alternative on-ramp” models face an uphill climb, but some of our partner companies are interested in trying or expanding their use, and if Chicago can deliver these models effectively, at substantial scale (at least several hundred per year), it would enable a material advance towards shared diversity and inclusion goals.

## Most Challenging Hiring Areas

Companies were asked to select three roles/tenures where they are having the most difficulty hiring today.

Entry-Level ● Experienced ●

### Software Engineering



### Cloud Computing



### Data & Analytics



### Cybersecurity



### Product Development



### DevOps



Source: Survey of Chicago Tech Talent Coalition companies by P33, 2021; n=25

# Business interest in diversity creates an opportunity—maybe.

**C**ompanies tell us they are able to fill their intern classes and college hires with quality talent, but that they would like more diversity—especially women, and Black and Latinx hires. This creates an opportunity.

Most Talent Coalition companies reveal that they have recruiting partnerships at only a few regional schools—and generally those with lower student diversity. Individual companies have taken steps to redress this, setting up new partnerships with HBCUs as well as local colleges serving higher proportions of Black and Latinx students.

**Most companies have also taken other actions over the last 18 months to attract, support, and advance diverse talent: <sup>9</sup>**

**91%** of companies have established or grown employee resource groups

**83%** have increased DEI or unconscious bias training

**83%** have established a DEI committee, taskforce, or role within the organization

**74%** are investing in talent pipeline programs

**56%** have leadership programs for diverse managers/executives

**Yet they also acknowledge that this is insufficient.**

While we argued earlier that there not enough Black and Latinx tech graduates entering the workforce to produce hiring classes that reflect the region, it is also true that the diverse graduates we are producing struggle more than others to obtain high-paying tech jobs. More can be done by companies to ensure that Chicago’s diverse graduates of college tech programs are placed in the best tech jobs to launch their careers and succeed.

# The Successful Candidate Profile

**W**e found surprising thematic parallels between the qualities that prevent entry-level and experienced candidates from receiving an offer—with a higher, and more role-specific bar for the latter. Experienced candidates are expected to have very specific technical skill sets, programming languages, and expertise; prior experience deploying those skills in a similar industry or company type (e.g., start-ups); and strong communication and presentation skills. The requirement for prior experience using specific skills in a relevant context is what makes adult retraining efforts difficult for these high-wage software and data roles.

For those building technical pipelines of early-career tech workers, the future is software engineering, and data and analytics. Here we detail the primary factors companies are looking for when hiring these roles.

**Three things prevent otherwise qualified candidates from receiving an offer: <sup>10</sup>**

01

**HAVING THE RIGHT  
HARD SKILLS**

02

**HAVING PRIOR  
RELEVANT WORK OR  
PROJECT EXPERIENCE**

03

**BEING EFFECTIVE  
COMMUNICATORS AND  
PRESENTERS**

# The Right Technical Skills

The most commonly identified gap that prevents otherwise qualified candidates from receiving offers in software engineering or data and analytics is having the right technical skills.<sup>11</sup>

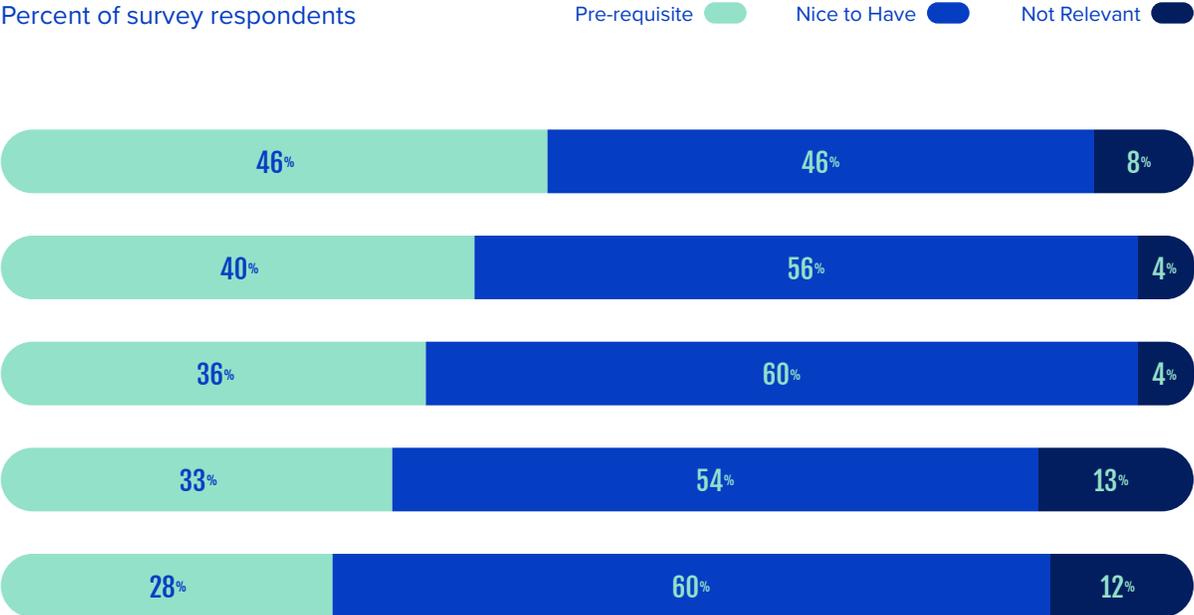
## Software Engineering

Nearly 75 percent of companies surveyed identified at least one technical skill that was a pre-requisite for hiring. The most common pre-requisite was Java, with 46 percent of respondents listing as a pre-requisite for hiring; followed by Javascript (40 percent) and HTML/CSS (36 percent).

Note that different types of companies highlighted different needs: pure tech companies and startups are four times more likely to list HTML/CSS as a pre-requisite than tech-enabled corporations. But the needs of tech-enabled corporates in industries like finance and insurance should not be overlooked, as they provide a large share of the inroads in tech careers for entry-level talent.

### Skill Requirements for Entry-Level Software Engineering Roles

Source: Survey of Chicago Tech Talent Coalition companies by P33, 2021; n=25



## Data & Analytics

The most commonly identified gap that prevents otherwise qualified candidates from receiving offers in data and analytics roles is having the right technical skills. Note, this category includes data engineering and architecture, as well as data science and traditional business analysis and analytics roles. However, certain skill expectations are shared across the category:

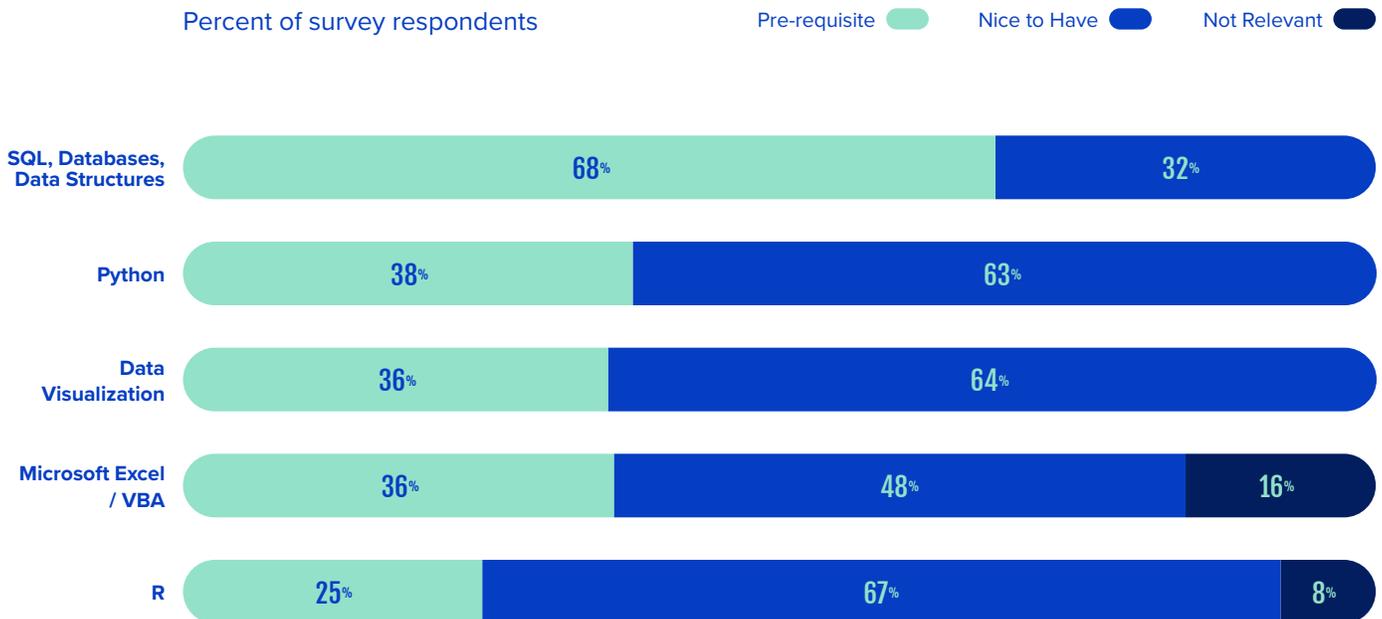
- SQL, data bases and data structures experience are the foundation of competitive candidates. 68% of companies highlighted SQL/databases/data structures as a prerequisite for hiring in entry-level positions.
- All companies also think Python and Data Visualization are attractive technical skills for candidates, although the majority think it is a nice-to-have skill rather than a prerequisite.

Some differences exist by company type and stage:

- Tech-enabled corporations value skills like Microsoft Excel/VBA or data visualization far more than pure tech companies; whereas
- Tech companies and start-ups look for programming skills such as R and Python.

### Skill Requirements for Entry-Level Data & Analytics Roles

Source: Survey of Chicago Tech Talent Coalition companies by P33, 2021; n=25



# Prior Project Experience

**S**uccessful candidates will need to demonstrate their relevant programming language and analytic toolkit in applied settings—particularly prior internship experience or project-based experience.<sup>12</sup> Conversations with talent acquisition staff and survey data make clear that the lack of prior work or project-based experience keeps many otherwise attractive candidates from getting an interview or receiving an offer. This is true even for third-year college internship candidates—a reality that underscores the importance of providing college underclassmen with rich work-based learning opportunities to get early “at-bats” and to have projects to discuss in interviews.

**68** %

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of survey respondents stated that prior work or project experience was a common gap for otherwise qualified software engineering candidates, with 16% identifying it as the most common gap among nine options provided. It was the second most common gap identified after programming skills.

**56** %

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of survey respondents stated that prior work or project experience was a common gap for otherwise qualified data and analytics candidates, with 24% stating it is the most common gap among 12 options provided. Prior work or project experience was the #1 most common gap for otherwise qualified data and analytics candidates.

## Communicating and Presenting

It is not enough for students to have technical skills and project-based experiences—the third most frequently cited barrier to employment for entry-level candidates is communication or presentation skills.<sup>13</sup> Students need practice communicating or presenting their work, and this practice should be incorporated into the same programming that gets students the project-based experience they need to be successful.

In sum, we know the three critical ingredients for students successfully launching tech careers, and Chicago has a clear opportunity to act on this knowledge to ensure our students learn the in-demand technical skills, work on meaningful projects to hone those skills, and have authentic opportunities to present and communicate their work. This will require collaboration between companies and colleges, but the path forward is clear.

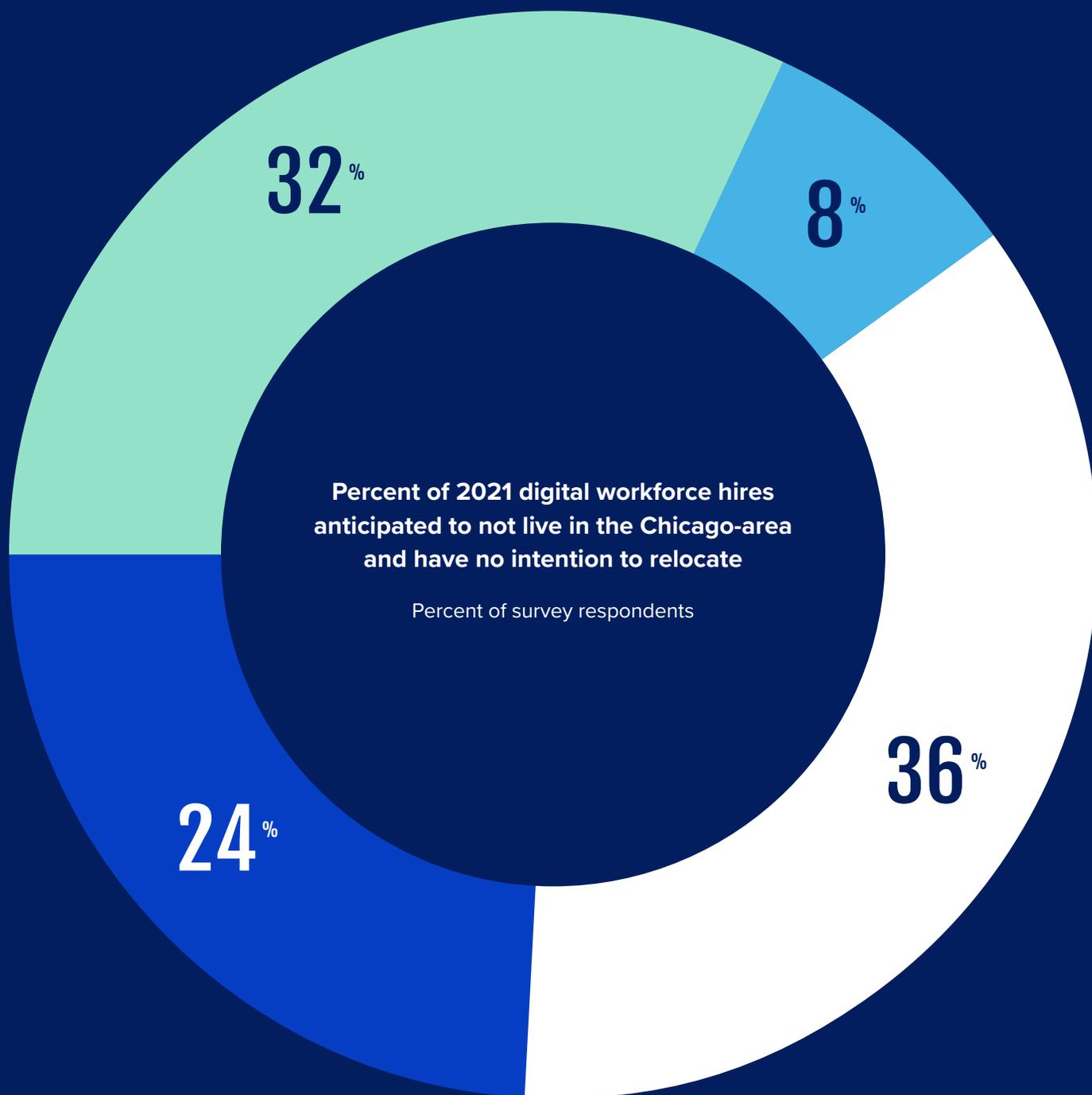
# REMOTE WORK WILL IMPACT COMPANIES, PEOPLE AND CITIES UNEQUALLY.

## DEEPER INSIGHT

**T**he pandemic-era shift to hiring technical talent for permanent remote roles began with startups and has expanded to most companies. All businesses in Chicago are now competing with the tech companies and other high-wage employers of technical talent on the West Coast, East Coast, and in mid-size markets like Denver and Austin—one of our partners called it “the great sucking sound” hoovering up the digital talent. Of course, those Chicago businesses willing to hire for remote employment now theoretically have access to a national talent pool. The benefits from this shift have not been distributed evenly.

52% of Coalition companies say they no longer care whether a hire lives in Chicago or intends to move to Chicago. Nearly 100% of start-ups say this compared to 30% of more established companies. Some companies have only reluctantly been dragged into this game; they do not believe it is the best talent management strategy, but have decided they cannot afford to only fish in one market.

Those who are agnostic to location are disproportionately hiring staff outside of Chicago with no intent to relocate: 46% of companies who said that location was not important in the current hiring process estimated that more than half of their digital workforce hires in 2021 are those outside of the Chicago area, compared to just 17% of those who said location was at least somewhat important.<sup>14</sup>



Source: Survey of Chicago Tech Talent Coalition companies by P33, 2021; n=25

None ● Less than 25% ● 26 - 50% ● More than 50% ●

## Impact of the shift towards remote-work and national hiring on ability to recruit tech talent

Percent of survey respondents, based on indicated importance of location in hiring process

Easier  Harder  Don't Know Yet

### Location Agnostic



### Chicago-Focused



Source: Survey of Chicago Tech Talent Coalition companies by P33, 2021; n=25

# Implications of Remote Work

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## Companies

Companies are split on whether this shift will help or hurt their talent attraction efforts, with 44% believing hiring will be easier, 44% believing hiring will be harder, and 12% unsure. The tradeoff of having access to a national talent pool but having to compete with employers nationally appears to favor those companies with exciting brands, equity upside, and highly competitive compensation. Translation: Chicago's highly valued start-ups are bullish on national hiring, while earlier-stage start-ups and established corporations are concerned.<sup>15</sup>

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## Tech Workers

Chicagoans are increasingly competing with a national talent pool as companies take on more fully remote employees. These Chicago job seekers are of course able to pursue remote-work jobs on the national market. It remains unclear what the net effect on opportunity will be for somebody trying to launch a career in technology.

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## Chicago

The city faces risks of loss or flat growth of high-paying jobs, and greater difficulty keeping start-ups based in Chicago, potentially limiting medium-term economic growth and raising questions about the business anchors of Chicago's future. Conversely, the opportunity exists to get more tech workers to reside in Chicago regardless of the company they work for, and to get founders to build businesses in Chicago regardless of where their employees are. Chicago must make itself a desirable place to live, work, and start a tech business.

# SOLUTIONS

## PART 03

**G**iven the shared interest in expanding diversity and inclusion in tech, and the several organizations doing work on this issue, Chicago can make a big advance towards being the country's most inclusive technology city. We propose specific actions that each major stakeholder group can take to help, but most critical is for Chicago companies to recognize they have a role to play in expanding and diversifying the tech talent pool.



# Companies

**Companies should take five actions to address their own persistent diverse talent challenges and to help Chicago become the most inclusive tech city:**

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- 01 **Make it your business** to provide diverse and low-income undergraduate students with project opportunities and exposure to professional tech environments.

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- 02 **Source talent from a wider network** of colleges than you currently use. While it is true that colleges do not graduate classes that represent the population, most companies focus recruitment at schools with even less diversity than average, nearly ensuring hiring classes skew heavily White and Asian.

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- 03 **Review hiring requirements and screening practices** that disadvantage underrepresented groups while making companies miss out on enormous talent that had to navigate more challenges to get to this point.

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- 04 **“Do the work” on your internal culture**, and improve diversity in the leadership ranks, to ensure diverse hires want to work for your company, that they thrive there, and that they want to stay.

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- 05 **Capture and share data**—at least internally—on diversity and inclusion, to enable focusing investments on the biggest challenges and opportunities, and to mobilize multiple internal stakeholders to get involved in building solutions.

# Colleges

We are not naïve about the complexity of colleges making change to better serve specific employment goals of their students, but that change is critical to Chicago’s economic vitality and equity goals. We are working with colleges on two fronts:

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01 **Embedding in-demand skills** for software engineering and data and analytics careers within course curriculum and associated projects for underclassmen; and

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02 **Ensuring students have significant project experience** to practice their tech and data skills prior to junior year internship recruiting, and that this experience incorporates opportunities to communicate about and present on the work.

# Government, Nonprofits, Philanthropy

Increase investments in education and workforce strategies that will help diverse students prepare for and get access to the highest wage, highest growth roles in software engineering and data and analytics—recognizing this is a bigger lift than the broader category of traditional “I.T.” roles.

# APPENDIX

## Author

Matthew Muench was the lead author of this report. As SVP of Talent Solutions at P33, he launched the Tech Talent Coalition and built P33's Talent Solutions team, focused on growing Chicago's technology economy and improving diversity and inclusion in high-wage tech careers. Previously, he was the City of Chicago's Director of Workforce Innovation, serving both Mayor Rahm Emanuel and Mayor Lori Lightfoot in their efforts to build college and career pathways, meet businesses' talent needs, and help struggling Chicagoans find quality jobs. He spent the prior seven years in philanthropy, most recently in Seattle as Portfolio Manager for Ballmer Group, where he directed national grantmaking related to post-secondary education, workforce training and employment, and managed their impact investments. Before that, Matthew was Director of the Joyce Foundation's Employment Program, where he oversaw strategy, grantmaking and partnerships focused on policy reform, tech innovation, and business practice change to help more individuals get good jobs and thrive in them. He began his career as an advisor to aerospace and defense companies, with especial focus on market entry and growth strategies, opportunity identification, and M&A. He holds degrees from The University of Michigan (MBA), London School of Economics (MSc), and Tulane University (BA). And he serves on the Advisory Board of the Illinois Workforce and Education Research Collaborative (IWERC).

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## Contributors

A special thanks to Rachel Garber, Consultant, who was instrumental in the Talent Coalition Survey design, delivery, analysis and data visualization through summer and fall of 2021. Rachel is an MBA Candidate at the University of Chicago Booth School of Business. Prior to business school, she was a management consultant at McKinsey and Company, including a fellowship with the McKinsey Global Institute, McKinsey's economics and business research arm, where she focused on the intersection of the future of work, gender equality, and inclusive economic growth

Paul Evangelista, led the design and production of this report.

## Survey Methodology

In Q3 of 2021, we conducted a confidential electronic survey of 25 Tech Talent Coalition companies to better understand the dynamics of their technical talent hiring priorities, the impact of COVID-19 on talent initiatives, and their diversity, equity and inclusion (DEI) efforts. The survey was typically completed by C-Suite level executives or senior management in the HR, talent or technology functions, dependent on the company. Of the participating companies, nearly one-third represent Chicago's startups; the remaining two-thirds are established companies from a variety of industries including large tech companies headquartered elsewhere but with presence in Chicago.

### Endnotes

- 1, 6-15 P33 Survey of Tech Talent Coalition members, 2021
- 2 <https://www.ibhe.org/EnrollmentsDegrees/Search.aspx>; P33 analysis.
- 3-5 <https://www.ibhe.org/EnrollmentsDegrees/Search.aspx>
- 4 The ACT Profile Report - State, Graduating Class 2017 - Illinois, accessed at [https://www.act.org/content/dam/act/unsecured/documents/cccr2017/P\\_14\\_149999\\_S\\_S\\_N00\\_ACT-GCPR\\_Illinois.pdf](https://www.act.org/content/dam/act/unsecured/documents/cccr2017/P_14_149999_S_S_N00_ACT-GCPR_Illinois.pdf); 2019 11th Grade SAT scores available on Illinois 60 by 25 Network Dashboard, accessed at <https://iirc.niu.edu/60by25/Data/CollegeReadiness/1?tab=Grade11SAT>

## Photography

Photos by Karl Solano, Los Muertos Crew, Ricardo Esquivel, Ron Lach, Ryutaro Tsukata, and Vlada Karpovich found on Pexels. Photos by Carlos Vaz, Charles Deluvio, Donny Jiang, Karl Solano, Nubelson Fernandes, Simon Zhu, This Is Engineering, Vadim Topolskiy found on Unsplash.