

Dice[®]

ISSUE #2: Q1 2020

DICE TECH JOB REPORT

The Early Impact of COVID-19 on Tech Hiring

1 LOCATION

2 EMPLOYERS

3 OCCUPATIONS

4 SKILLS



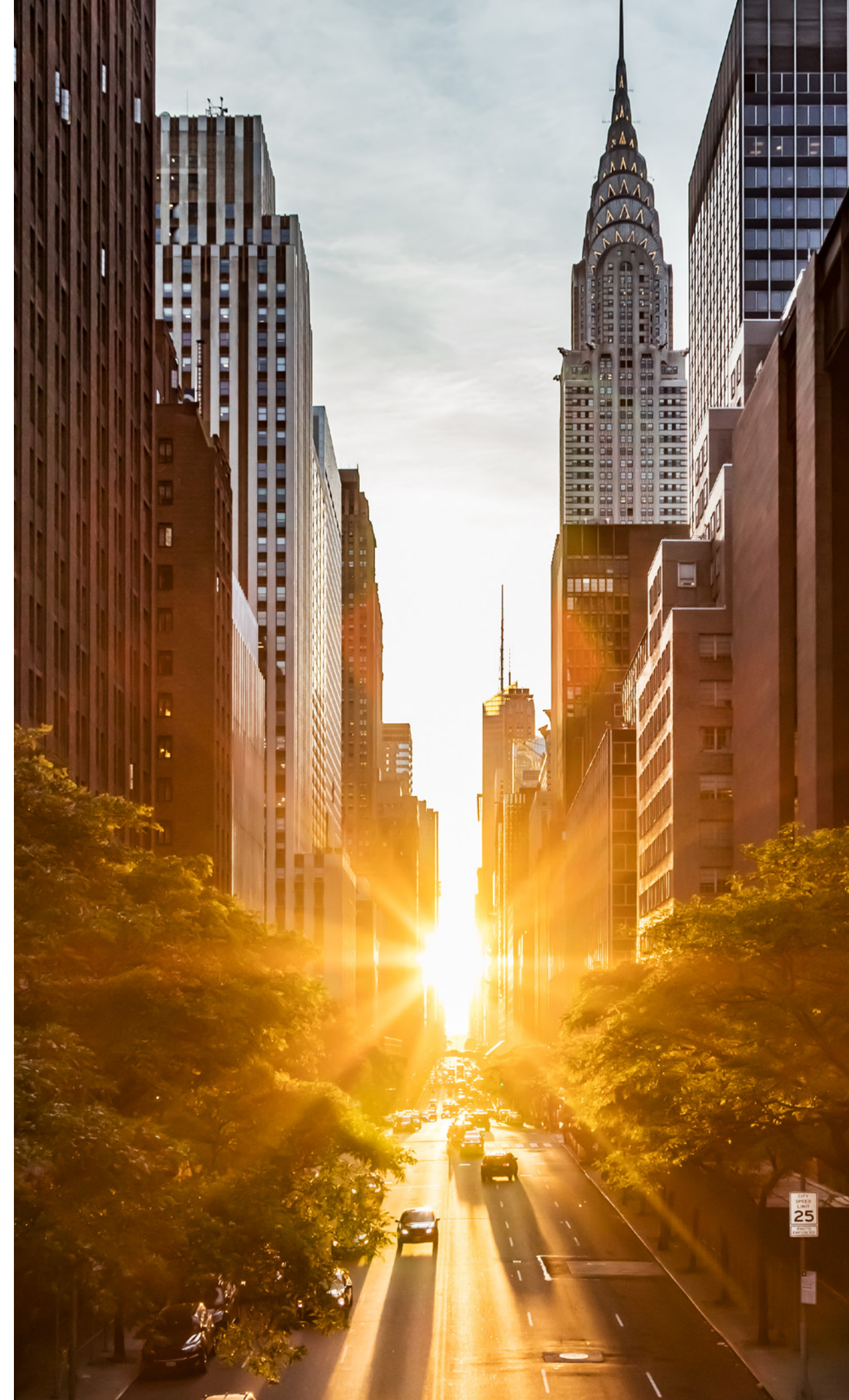
ACROSS THE U.S., THE COVID-19 LOCKDOWN IS IMPACTING THE WAY EMPLOYERS CONDUCT BUSINESS AND PLAN FOR THE FUTURE.

While some employers have ramped up their technology hiring, others have halted immediate hiring of non-essential roles... or rescinded initial offers. Our analysis suggests that the initial impact is less severe in tech than other industries, even as COVID-19 fundamentally changes day-to-day life across the country.

To bring more transparency to COVID-19's impact on tech, Dice presents the Q1 Tech Job Report. Although the historical intention of this report has been to offer insight into tech-industry growth by comparing year-over-year job-posting volume, this edition of the report will also focus on Q1 2020 data to demonstrate the outbreak's effect on the tech industry so far. To do so, we present three different sets of job-posting data:

- **Comparisons between the first quarter of 2019 and 2020.**
- **Comparisons between February and March of 2020 to represent COVID-19's impact on the tech industry thus far.**
- **Weekly job posting volume from January 4th to April 11th to provide a more granular look at the weekly fluctuations in tech job postings.**

Our hope is that, by doing so, we can provide an accurate depiction of how this pandemic has started to impact different locations, roles and skills at both the macro and micro levels.



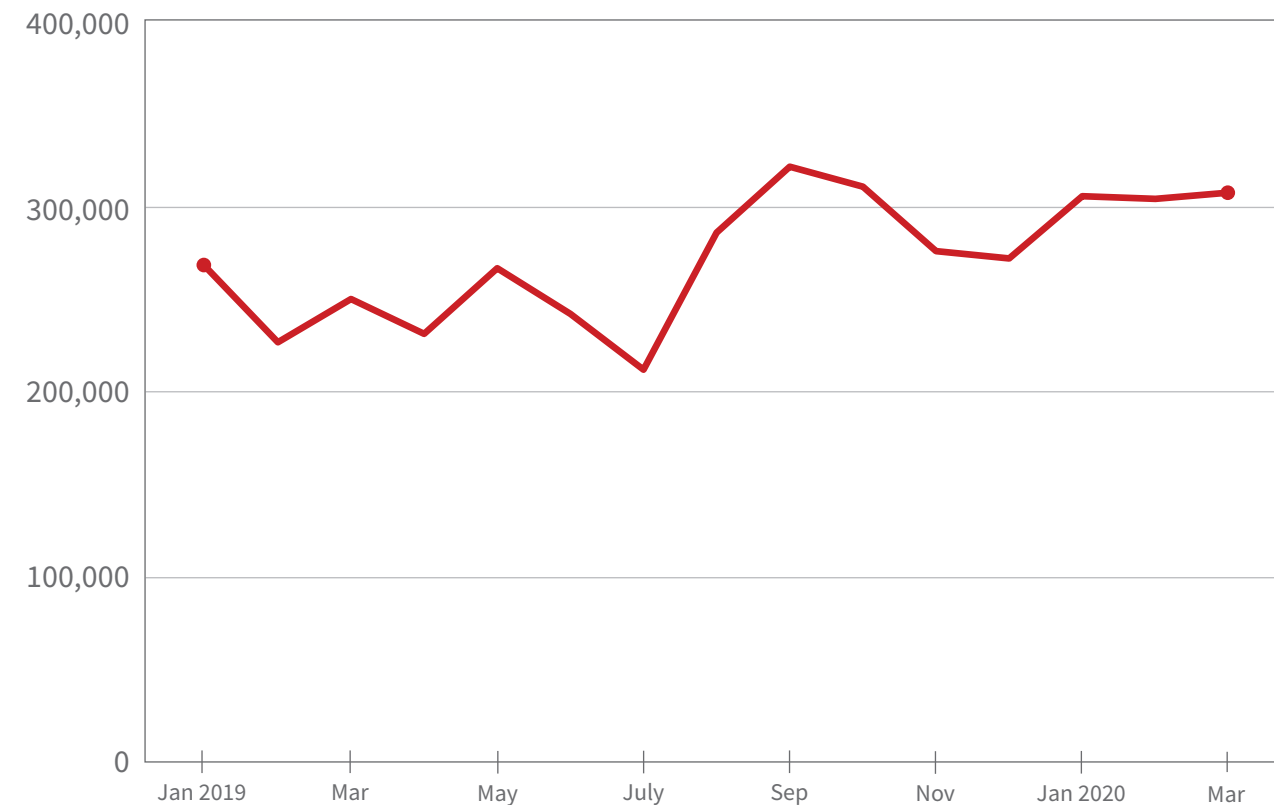
Generally, Q1 job postings saw a significant spike when compared to Q1 of 2019, with both established and emerging tech hubs showing significant growth. The last third of the quarter, however, requires a more nuanced view in order to measure the impact COVID-19 thus far.

At a high level, the data in this report suggests that, currently, the tech industry is more insulated from COVID-19 than other industries such as food, hospitality and tourism.

As a whole, there was a significant increase in job postings in Q1 of 2020 compared to Q1 of 2019. Looking at the most recent April data, job postings have softened in certain areas, though it will require additional monitoring to understand the true impact of COVID-19. Amidst the lockdown, businesses still require a stream of professionals who can keep operations running as usual, or to help pivot their strategy in order to better meet demands such as expanded e-commerce.

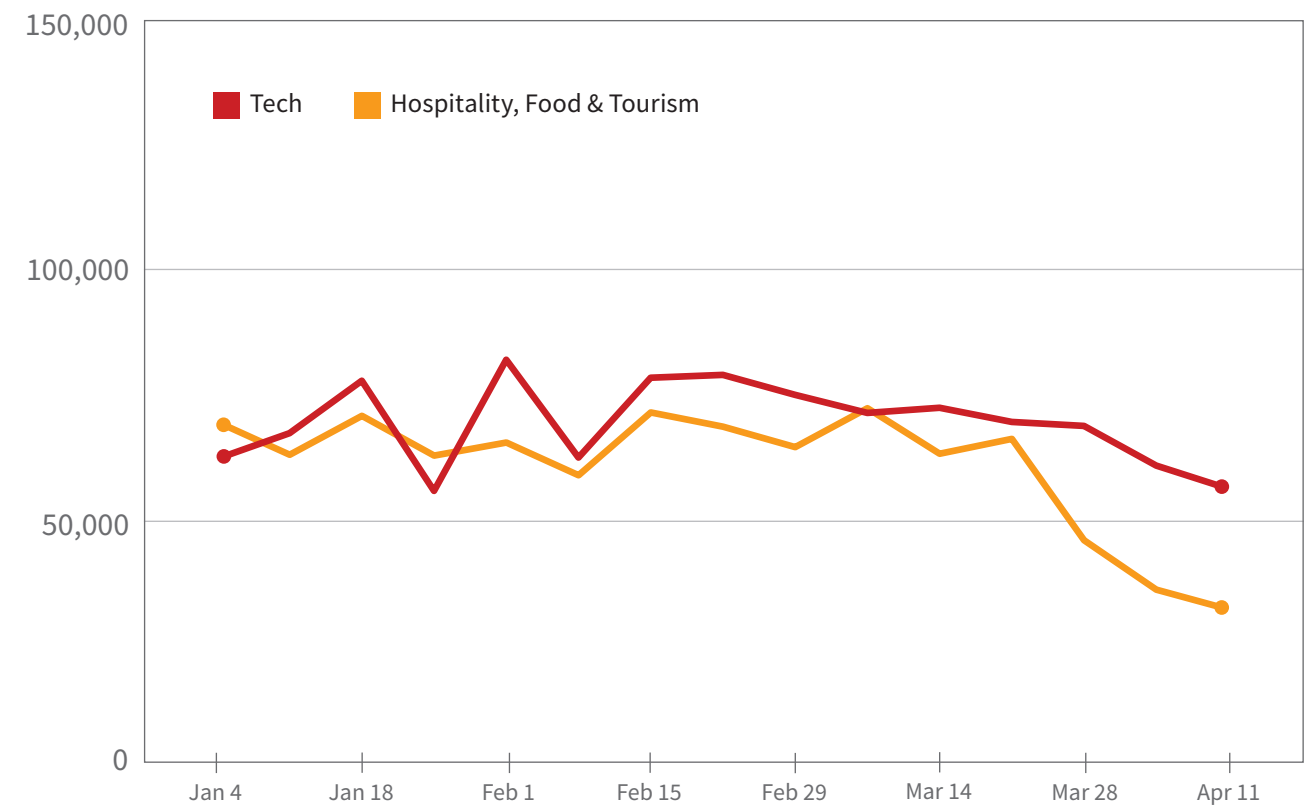
MONTHLY TECH JOB POSTINGS

JANUARY 2019 TO MARCH 2020



WEEKLY JOB POSTINGS BY INDUSTRY

JANUARY 4, 2020 TO APRIL 11, 2020



1 LOCATION

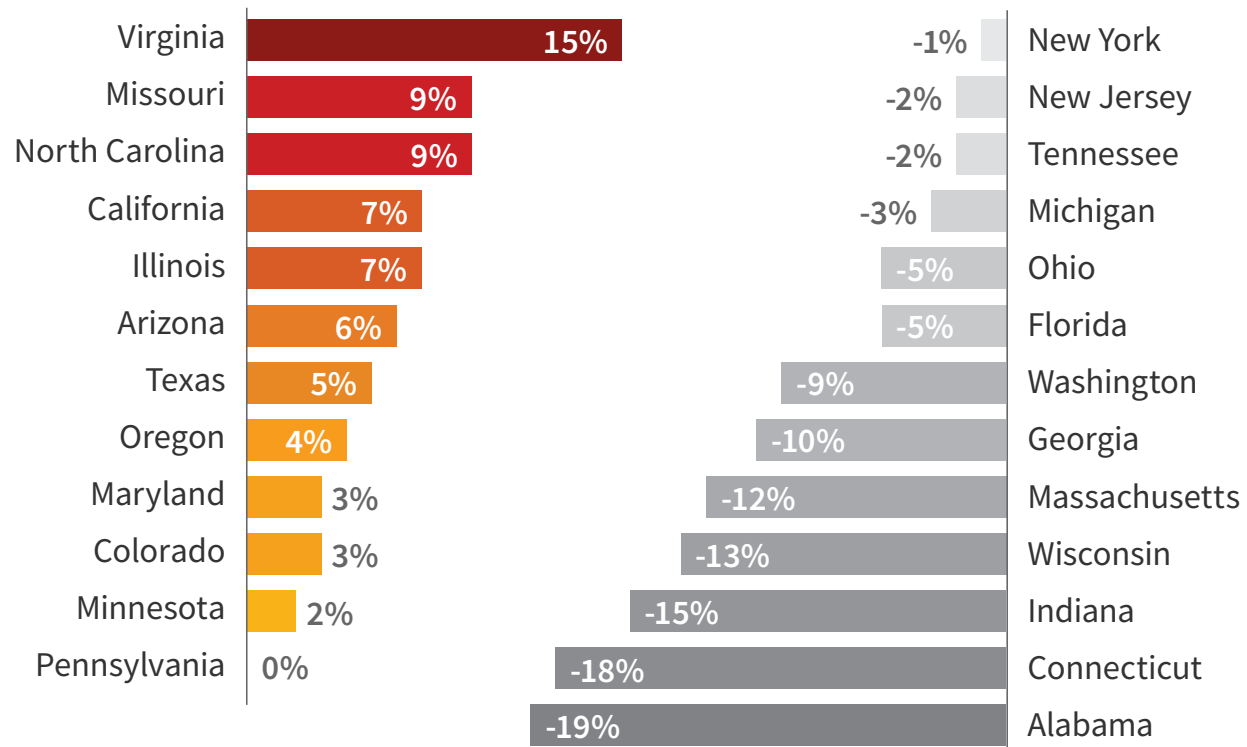


LOCATION

Comparing Q1 of 2020 to Q1 of 2019, almost every state experienced growth. Looking at the change from February to March of 2020, there is more variability.

Many states are reacting differently to the COVID-19 lockdown. While some states, including New York, were quick to enforce stricter “stay at home” mandates, others have been slower to require that non-essential employees work remotely. As a result of these varied responses, the state- and city-level impact is wide-ranging.

CHANGE IN STATE TECH JOB POSTINGS FROM FEBRUARY TO MARCH



STATES BY TECH JOB POSTINGS IN Q1

Q1 2020 RANK	STATE	YEAR/YEAR CHANGE	Q1 2020 RANK	STATE	YEAR/YEAR CHANGE
1	California	▲ 5%	26	Alabama	▼ 14%
2	Texas	▲ 42%	27	South Carolina	▲ 22%
3	Virginia	▲ 30%	28	Nevada	▲ 32%
4	New York	▲ 7%	29	Kentucky	▲ 41%
5	North Carolina	▲ 50%	30	Iowa	▼ 8%
6	Florida	▲ 6%	31	Oklahoma	▲ 33%
7	Illinois	▲ 31%	32	Louisiana	▲ 46%
8	Massachusetts	▲ 43%	33	Kansas	▲ 18%
9	Georgia	▲ 8%	34	New Hampshire	▲ 121%
10	Pennsylvania	▲ 35%	35	Nebraska	▲ 5%
11	New Jersey	▲ 42%	36	Rhode Island	▲ 118%
12	Colorado	▲ 29%	37	Delaware	▲ 32%
13	Washington	▲ 16%	38	New Mexico	▲ 17%
14	Ohio	▲ 12%	39	Arkansas	▲ 34%
15	Maryland	▲ 27%	40	Idaho	▲ 47%
16	Arizona	▲ 37%	41	Hawaii	▲ 4%
17	Michigan	▲ 33%	42	Mississippi	▲ 10%
18	Minnesota	▲ 29%	43	Maine	▲ 19%
19	Missouri	▲ 27%	44	West Virginia	▼ 4%
20	Wisconsin	▲ 36%	45	Alaska	▲ 4%
21	Tennessee	▲ 44%	46	North Dakota	▲ 19%
22	Oregon	▲ 21%	47	Montana	▲ 20%
23	Connecticut	▲ 51%	48	South Dakota	▲ 17%
24	Indiana	▲ 32%	49	Vermont	▼ 9%
25	Utah	▲ 22%	50	Wyoming	▲ 12%

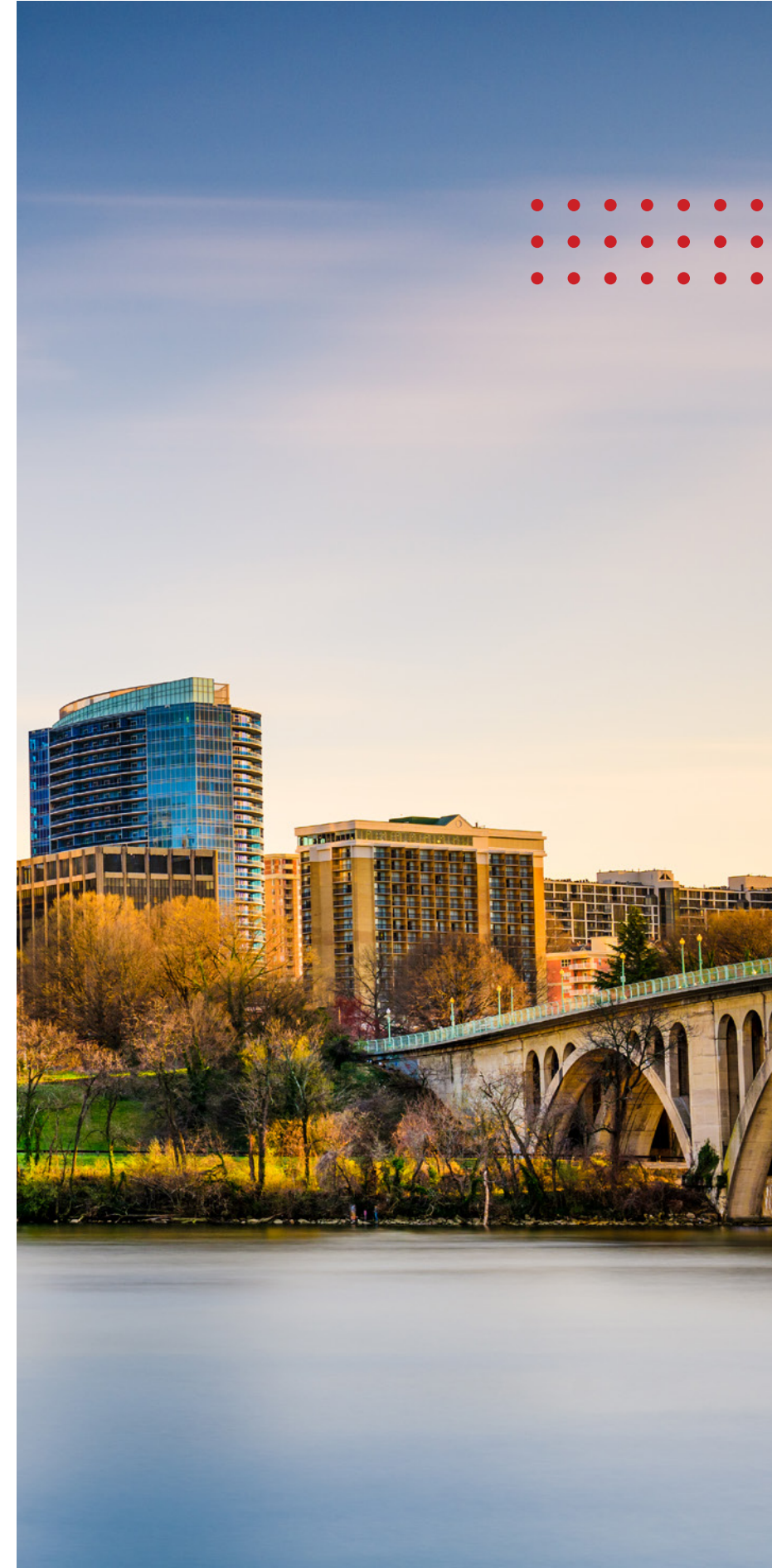
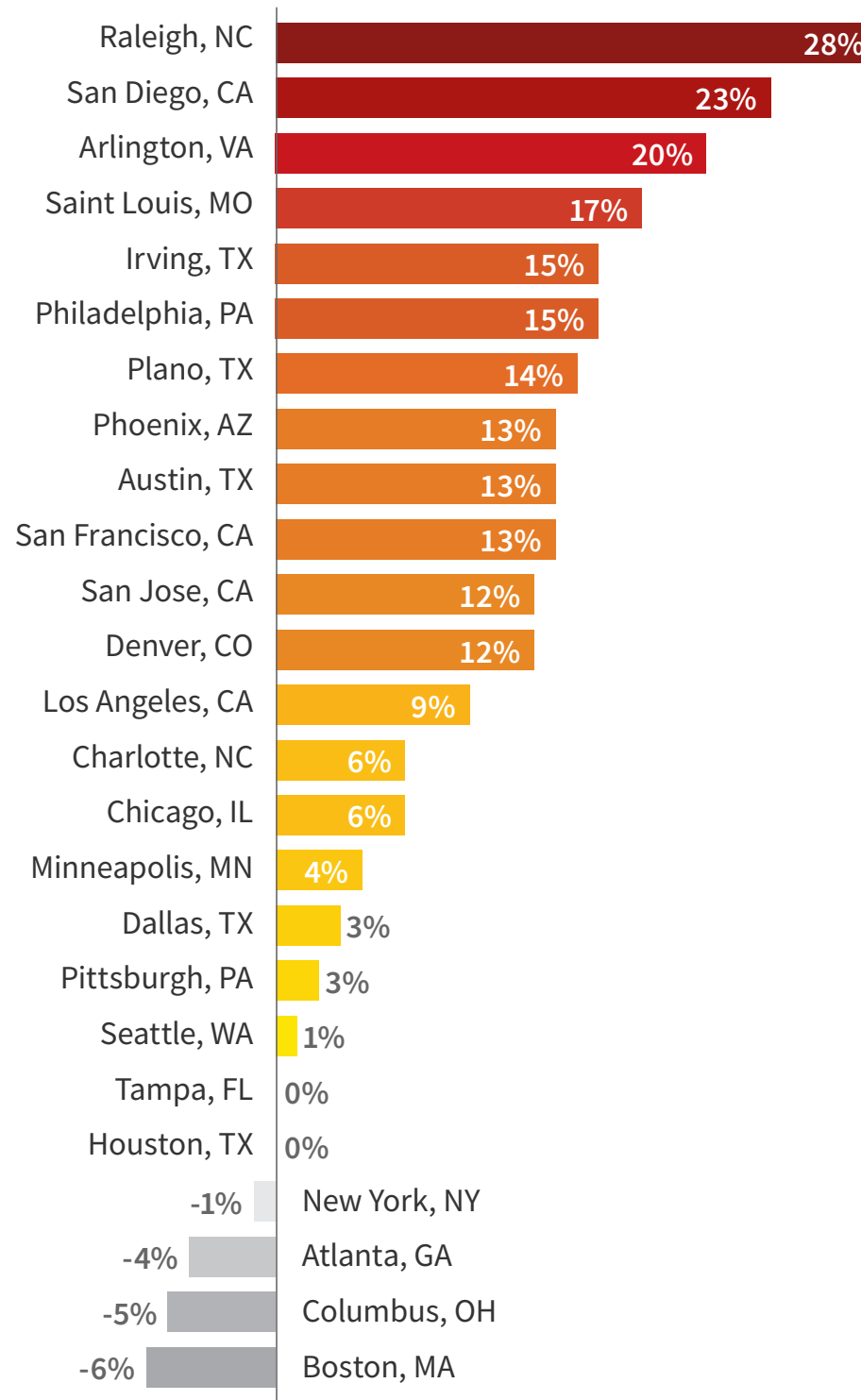
The majority of featured cities show an increase in job posting volume between February and March.

Specifically, Arlington, San Diego and Raleigh all showed job posting volumes increase by at least 20%. The causes for this growth may differ; for example, Arlington hosts a high volume of federal government and defense contracting, as well as Amazon and its forthcoming “HQ2” headquarters, all of which, at least temporarily, insulates it from economic downturns.

San Diego saw a 23% growth in job postings between February and March, with businesses such as Qualcomm, Booz Allen Hamilton and General Atomics all hiring. San Diego also experienced significant growth in year-over-year job postings, mirroring that of Los Angeles (12%). The 12-month rise in the job fortunes of Southern California cities stands in contrast to Northern California, where the cities that make up Silicon Valley are experiencing hiring plateaus. For instance, San Jose has declined -4% year-over-year, along with Sunnyvale (-7%) and San Francisco (-2%).

With regard to Silicon Valley, it’s worth noting that many of the largest local employers, including Google, were quick to encourage professionals to work from home at the beginning of the COVID-19 crisis. San Francisco and San Jose both enjoyed increases in job postings between February and March (13% and 12%, respectively), which certainly makes sense: Many local companies produce products and services vital to remote work and life, from messaging software to email and cloud platforms, and nationwide spikes in demand may be translating into an increased short-term need to hire.

CHANGE IN CITY TECH JOB POSTINGS FROM FEBRUARY TO MARCH



Texas, meanwhile, continues to rise quickly, with Austin, Houston, and Dallas seeing significant year-over-year growth (41%, 47%, and 36%, respectively). Between February and March, Austin also had 13% growth, with businesses including IBM, Charles Schwab and Advanced Micro Devices all looking to hire at high volumes. Dallas experienced 3% growth in the same time period, with Deloitte, Salesforce and KPMG topping the list of employers looking to hire. As with California, the next quarter or two will determine whether COVID-19 interferes with this longer-term tech expansion.

The growth between February and March illustrates another aspect of the COVID-19 crisis: remote work and social distancing are boosting demand for technologists who can provide everything from e-commerce portals to maintaining cloud architecture.

Some of the country’s biggest tech firms, including Facebook and Google, are struggling to handle increased load on their services, even as employees figure out how

to best do their jobs from home. While these gigantic companies attempt to adjust to a new paradigm, many tech startups—especially those that focus on transportation, hospitality, and food—are trying to absorb the impact of lessened consumer demand. As a result, in cities that host a mix of big tech firms and startups, such as Atlanta, Boston, Columbus, and New York, COVID-19 is already having a small effect on hiring.

The emphasis is on “small.” While Boston job postings appear to have been hit by COVID-19, for example, its weekly hiring volume actually suggests the city had a very high volume in February, and its March average was slightly higher than in January. Although New York City has become the nation’s COVID-19 epicenter, its job postings have been relatively flat (-1%) between February and March.

TOP CITIES BY TECH JOB POSTINGS IN Q1

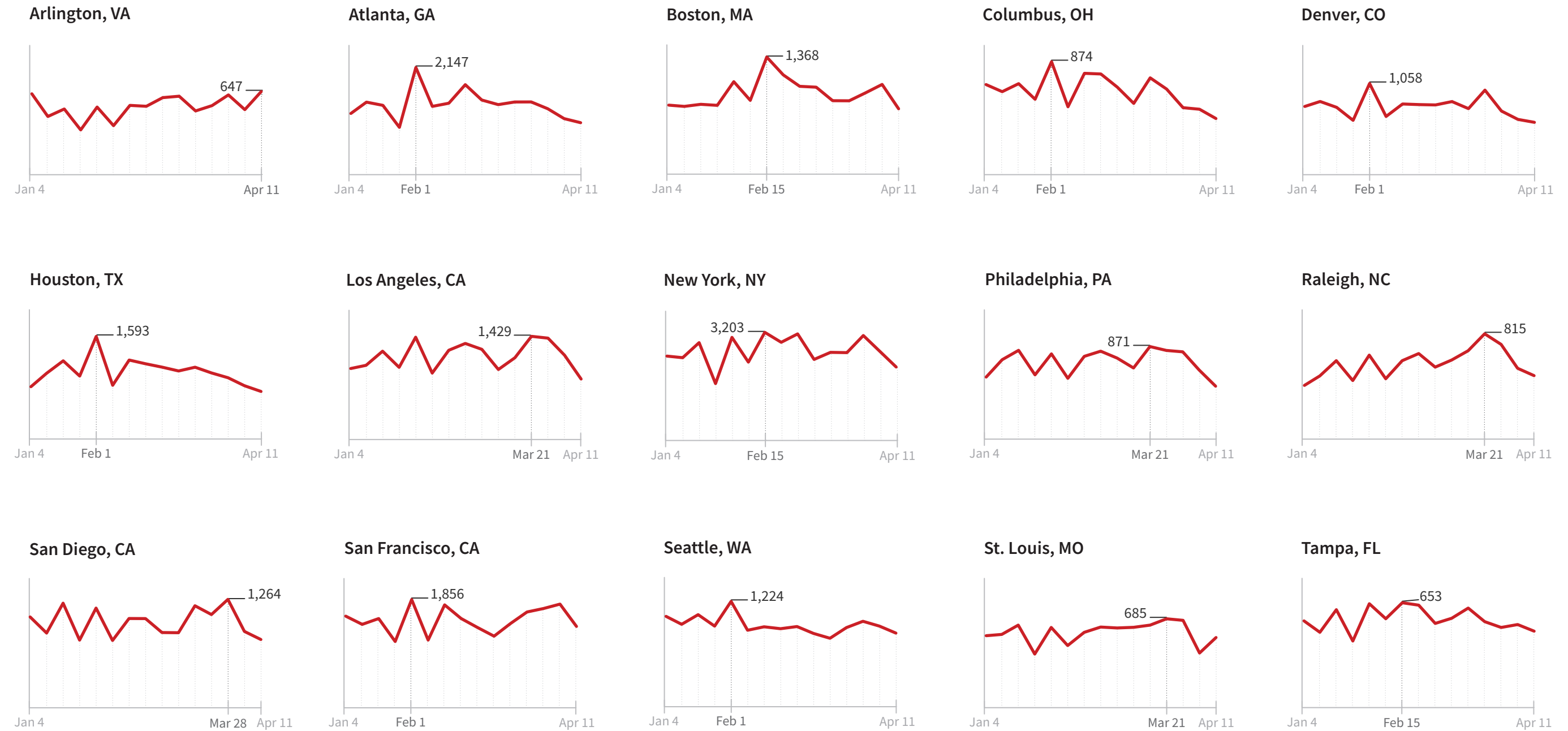
Q1 2020 RANK	STATE	YEAR/YEAR CHANGE
1	New York, NY	▲ 5%
2	San Francisco, CA	▼ 2%
3	Atlanta, GA	▲ 18%
4	Chicago, IL	▲ 7%
5	Charlotte, NC	▲ 75%
6	Austin, TX	▲ 41%
7	Los Angeles, CA	▲ 12%
8	Houston, TX	▲ 47%
9	Dallas, TX	▲ 36%
10	San Diego, CA	▲ 23%
11	Boston, MA	▲ 16%
12	Seattle, WA	▼ 5%
13	San Jose, CA	▼ 4%
14	Denver, CO	▲ 35%
15	Phoenix, AZ	▲ 29%
16	Philadelphia, PA	▲ 28%
17	Minneapolis, MN	▲ 26%
18	Columbus, OH	▲ 3%
19	Plano, TX	▲ 63%
20	Raleigh, NC	▲ 45%
21	Saint Louis, MO	▲ 22%
22	Tampa, FL	▲ 8%
23	Irving, TX	▲ 66%
24	Arlington, VA	▲ 36%
25	Sunnyvale, CA	▼ 7%



NEW TECH JOB POSTINGS BY CITY

WEEKLY DATA FROM JANUARY 4, 2020 TO APRIL 11, 2020

While weekly hiring volume often fluctuates, Q1 shows strong growth. Early April data indicates slightly less hiring. It will require continued monitoring to determine if this is a fluctuation or long-term trend. For weekly updates and insights, please visit the [Dice COVID-19 Resource Center](#).





2 EMPLOYERS

EMPLOYERS

The COVID-19 outbreak began impacting some businesses long before the outbreak made its way to the United States; for example, any organization that deals with Chinese manufacturing was already facing the virus's implications on their supply chains.

For many tech leaders, however, the degree to which the pandemic would impact every aspect of company operations came as a shock. Some organizations are set up well to shift to remote work—they already have remote policies in place, and their workforce is adept at off-site collaboration. They might also have back-end infrastructure that can handle an unexpected jump in customers and traffic, as well as polished e-commerce portals for business. But many others, even if they previously had a flexible policy, have never had to embrace remote work to such a degree.



The top employers of Q1 primarily consist of tech giants, consulting agencies and government contractors, which is largely consistent with industry trends. What’s interesting, however, is that Amazon increased its tech job postings by 110% between February and March. Specifically, Amazon is looking to hire software developers and network engineers. In the wake of COVID-19, consumers around the U.S. have turned to Amazon as an alternative to going to grocery and hardware stores, so it makes sense that the company has increased its tech workforce to keep up with demands. Similarly, Walmart, which has pledged to hire 150,000 employees (beyond tech) through May to meet a spike in demand

amid the coronavirus pandemic, has increased its tech job postings in March by 64%. Specifically, software developer and project manager roles top the list of roles the retailer is looking to fill.

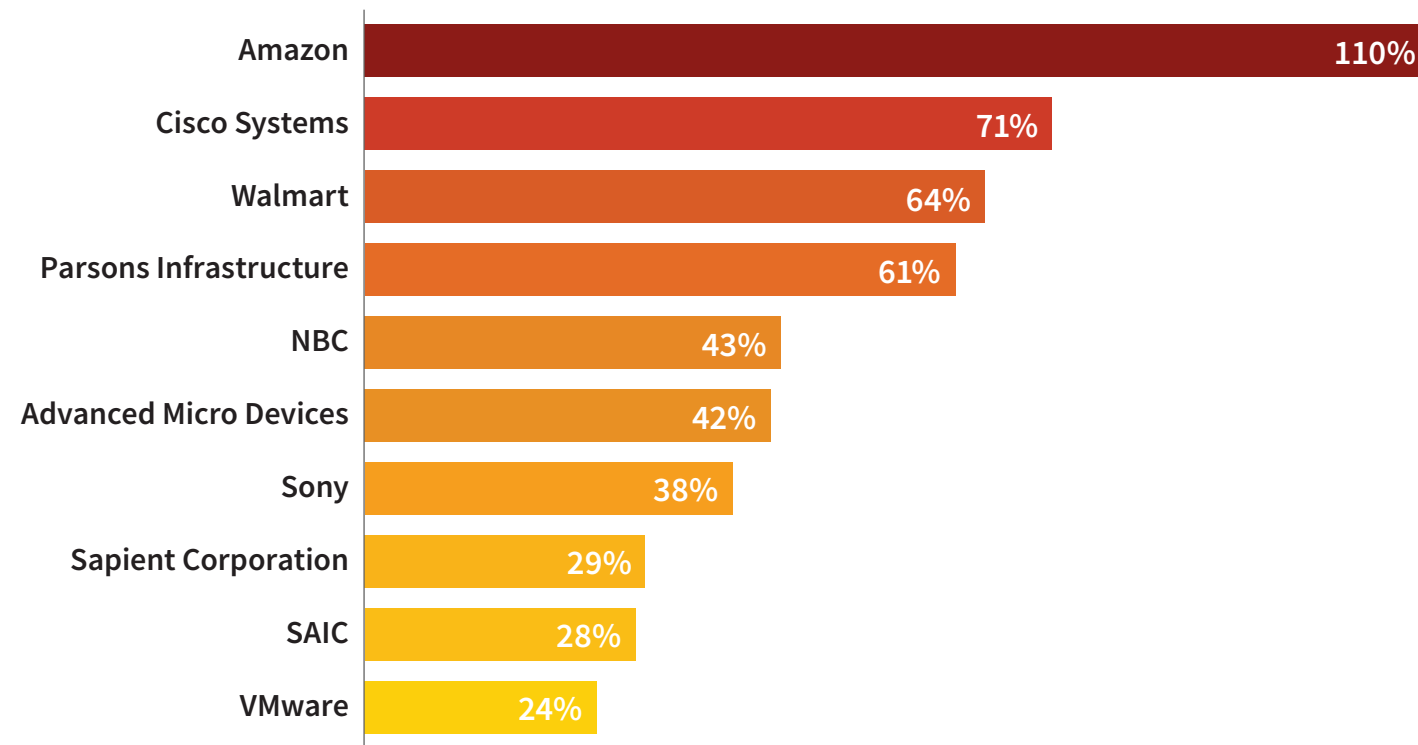
Many startups and small businesses have been affected by the outbreak. While larger businesses are also experiencing challenges, it appears that they’re more insulated than their smaller peers that require a consistent flow of cash to maintain (or grow) their workforces. If the COVID-19 crisis continues for several quarters, though, even large enterprises may need to radically adjust operations and strategies in order to maintain their customer base and revenue, which could impact how they hire.

TOP 25 TECH EMPLOYERS IN Q1 2020

- 1 Lockheed Martin
- 2 Infosys
- 3 Oracle
- 4 Northrop Grumman
- 5 Amazon
- 6 Verizon
- 7 Capital One
- 8 Booz Allen Hamilton
- 9 Leidos
- 10 NTT Data
- 11 Perficient
- 12 VMware
- 13 Capgemini
- 14 Arma Global Corp
- 15 The Boeing Company
- 16 Disney
- 17 T-Mobile
- 18 BASF
- 19 Best Buy
- 20 CGI Group
- 21 IBM
- 22 Comcast
- 23 Salesforce
- 24 NBC
- 25 United Technologies

EMPLOYERS INCREASING THEIR TECH HIRING

PERCENTAGE INCREASE BETWEEN FEBRUARY AND MARCH





3 OCCUPATIONS

OCCUPATIONS

Even as many employers are impacted by the outbreak, there's still a pressing need for technologists who can take on a range of initiatives. Within a typical company, you might find cloud architects and engineers who need to scale up infrastructure quickly; sysadmins and cybersecurity experts who must ensure that a network of remote employees is effective and secure; and app designers who may need to quickly retool products to meet the needs of a radically different world.

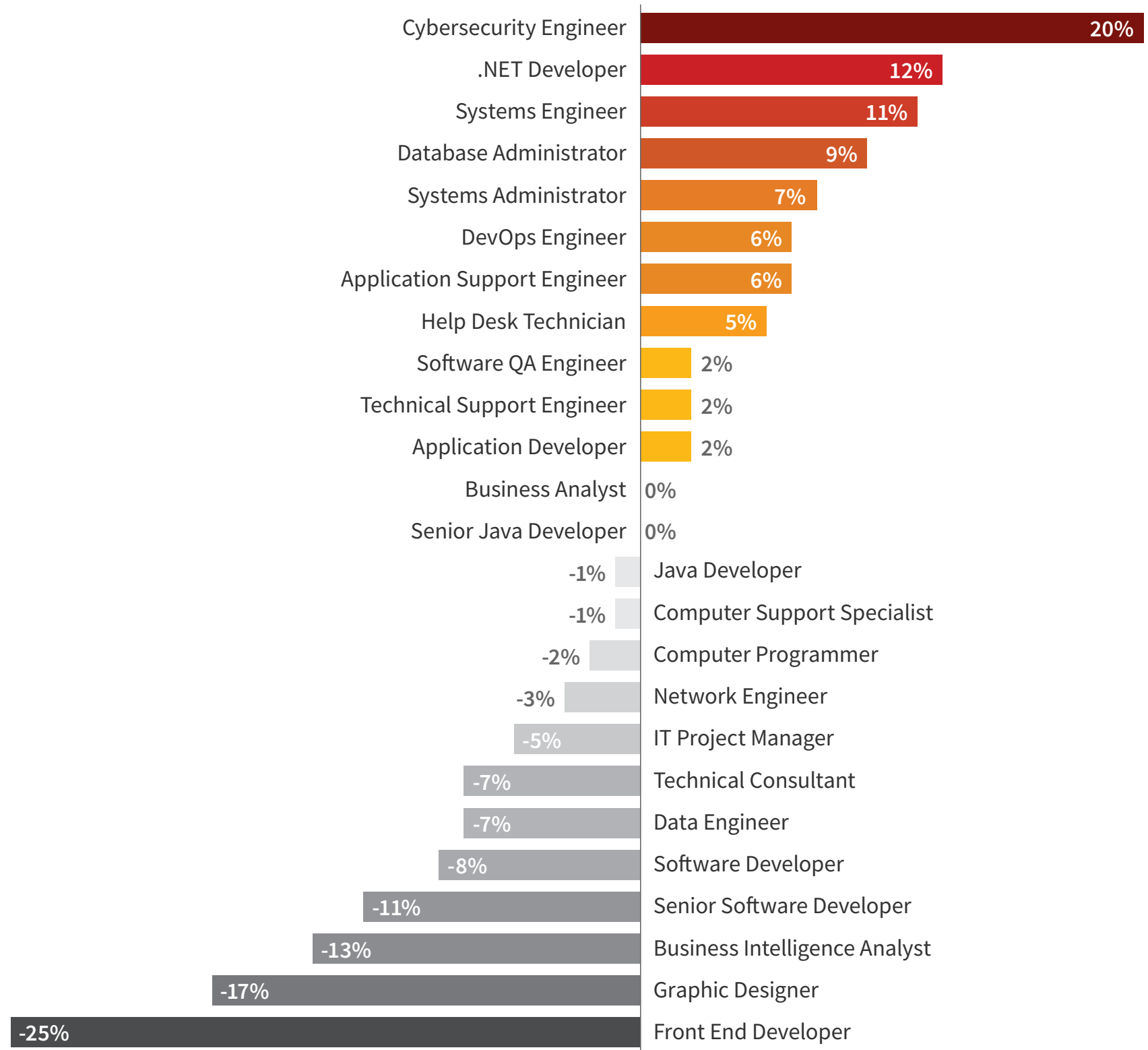


COVID-19 is influencing how many businesses prioritize the tech roles they need to fill. In a time of dispersed networks and workforces, cybercriminals have jumped at the opportunity presented by COVID-19, and pandemic-themed phishing and cyber-attacks have already begun to proliferate; as a result, businesses have increased their cybersecurity engineer job postings significantly (20%) to combat these types of threats. In March, businesses including Wells Fargo, Northrop Grumman and BAE Systems topped the list of employers looking to hire the most cybersecurity engineers.

Job postings for system engineers also rose between February and March (11%), which suggests that companies are putting an increased focus on maintaining their network and computer infrastructure amidst these circumstances, including the need for a dispersed workforce. Companies big and small are figuring out how to keep their operations running smoothly, and their services delivering without a hitch, even when all (or nearly all) employees are working from home. In March, SAIC, Raytheon and Northrop Grumman were all looking to hire systems engineers at the highest volume.

While occupations such as software developer and front end developer showed significant growth in Q1 (36% and 68% respectively), they both saw a decline in job postings between February and March. This may suggest that many employers are de-prioritizing new projects to focus their efforts on their core product offerings and infrastructure maintenance. The decline in technical consultants can also be attributed to employers cutting costs for external resources.

CHANGE IN TECH JOB POSTINGS FROM FEBRUARY TO MARCH



The rise in DevOps engineer job postings (6%) may be linked to businesses pivoting their strategy, sparking a need for professionals who can oversee and release new code to better address their customers' fluctuating needs. Deloitte, KPMG and Capital One were all looking to hire DevOps engineers at high volumes in March, and over the coming months, more employers may have an increased need for these professionals who can operate cloud infrastructure to meet an increased demand and business need.

As the outbreak progresses, and the tech industry (as well as the world) adjusts its business needs amidst new ways of working, we will continue to see how employers will react to best equip their business and maintain their bottom line.



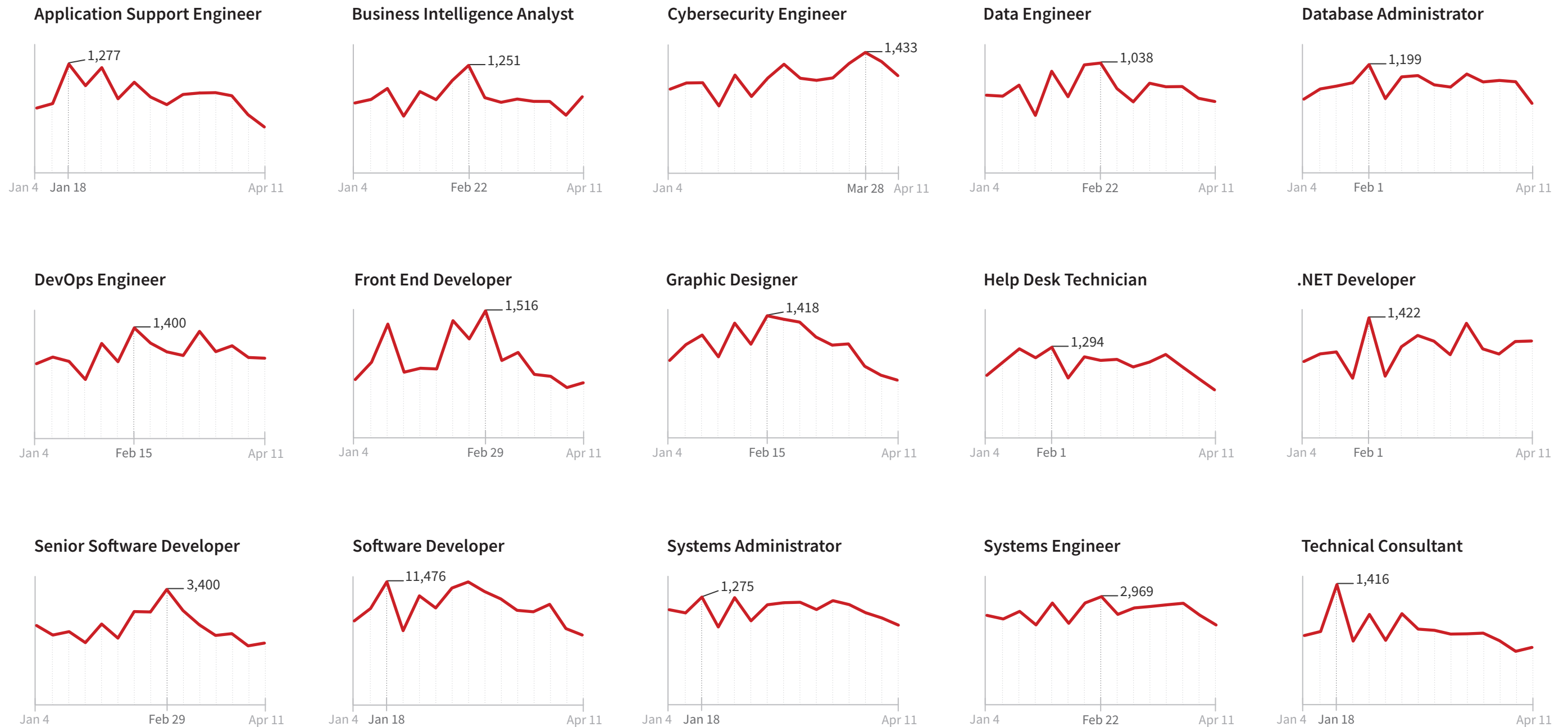
TOP TECH OCCUPATIONS BY JOB POSTINGS IN Q1

Q1 2020 RANK	OCCUPATION	YEAR/YEAR CHANGE
1	Software Developer	▲ 36%
2	Network Engineer	▲ 17%
3	Systems Engineer	▲ 8%
4	Senior Software Developer	▲ 23%
5	Java Developer	▲ 52%
6	Software QA Engineer	▲ 26%
7	IT Project Manager	▲ 28%
8	Application Developer	▲ 19%
9	Computer Support Specialist	▲ 27%
10	Business Analyst	▲ 24%
11	Computer Programmer	▲ 58%
12	Systems Administrator	▲ 16%
13	Graphic Designer	▲ 19%
14	Cybersecurity Engineer	▲ 7%
15	DevOps Engineer	▲ 39%
16	Help Desk Technician	▲ 33%
17	.NET Developer	▲ 46%
18	Technical Support Engineer	▲ 10%
19	Front End Developer	▲ 68%
20	Database Administrator	▲ 21%
21	Application Support Engineer	▲ 33%
22	Technical Consultant	▲ 25%
23	Business Intelligence Analyst	▲ 11%
24	Senior Java Developer	▲ 12%
25	Systems Analyst	▲ 21%

NEW TECH JOB POSTINGS BY OCCUPATION

WEEKLY DATA FROM JANUARY 4, 2020 TO APRIL 11, 2020

While weekly hiring volume often fluctuates, Q1 shows strong growth. Early April data indicates slightly fewer job postings for some occupations. It will require continued monitoring to determine if this is a fluctuation or long-term trend. For weekly updates and insights, please visit the [Dice COVID-19 Resource Center](#).



4 SKILLS

SKILLS

With the rise of COVID-19, employers are wrestling with a great deal of uncertainty, and, as a result, the growth (and decline) of tech skills was varied between February and March. One thing is clear, though: Employers are very interested in skills that contribute to the maintenance and shifting of a company's technology infrastructure.

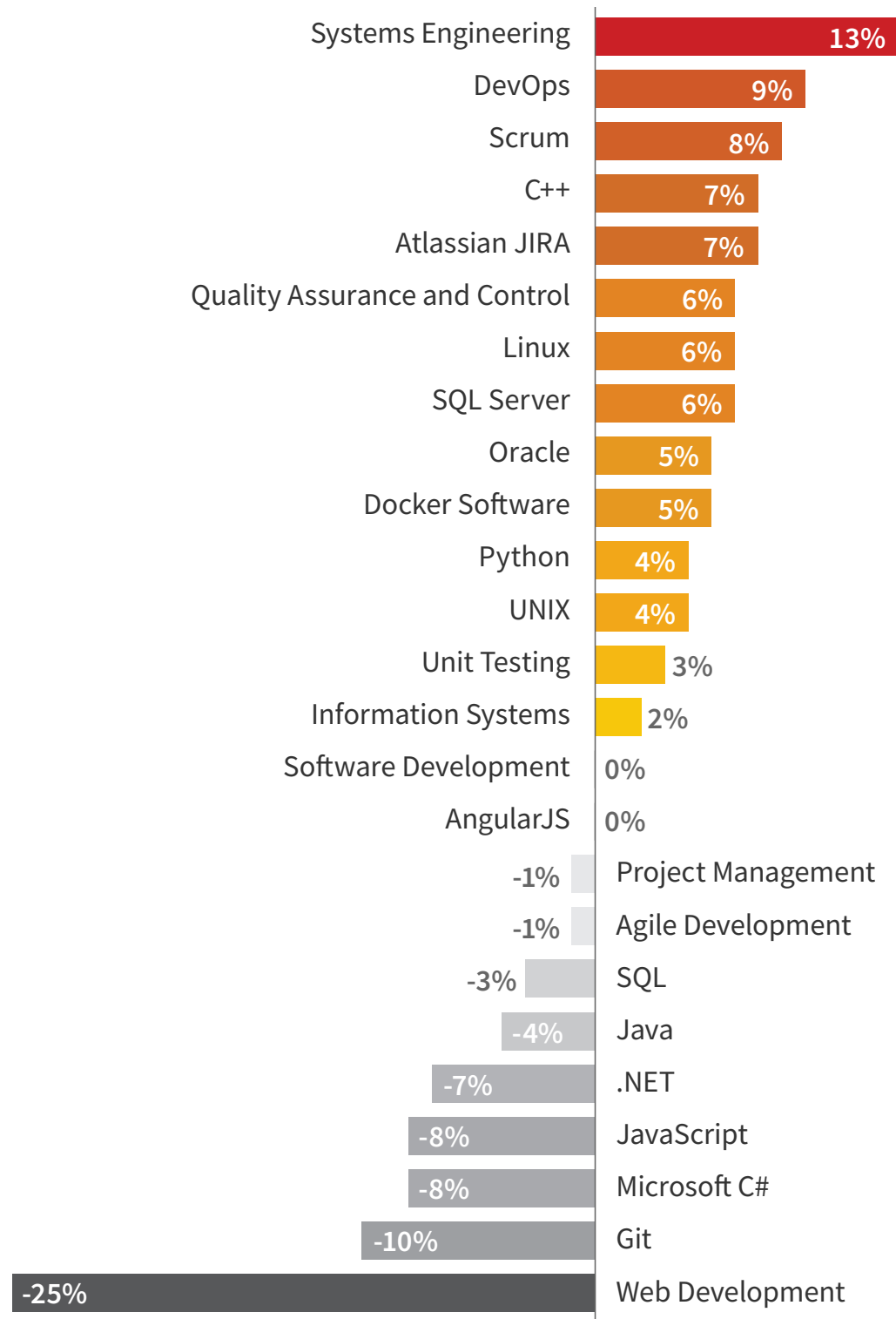


The DevOps skill grew 9% between February and March, while Scrum grew 8% and quality assurance grew 6%. If you're going to grow your teams and adjust your tech stack in order to prioritize e-commerce or remote work, for example, those are the skills you'd want to keep everything on-schedule and bug-free. Among programming languages, Python grew 4% month-over-month, hinting that employers want technologists who can not only wrestle with the immense amounts of legacy code written in Python, but also build new apps and services that can help companies successfully calibrate to this brave new world.

It's also worth noting which skills have fallen month-over-month. These include web development (-25%), Ruby (-30%), and version control (-23%). What's behind this decrease? It's probably safe to assume that businesses, forced into a more reactionary stance, are potentially putting off longer-term work. For example, if you're scrambling to set up your employees to work remotely, you probably care less about updating your website. As the initial stage of the COVID-19 crisis passes, though, employers will likely take another look at (and resource for) their long-term web and infrastructure projects.

Indeed, once many businesses see how this crisis is playing out, they will strategically hire for new skills to meet this paradigm. At the same time, many employers who have neglected their tech stack in years past may decide to make the investment in order to meet changed needs; the hunger for technologists who can wrangle data infrastructure and manage teams will no doubt continue, and even rise.

CHANGE IN DESIRED TECH SKILLS FROM FEBRUARY TO MARCH



TOP TECH SKILLS BY JOB POSTINGS IN Q1

Q1 2020 RANK	SKILL	YEAR/YEAR CHANGE
1	SQL	▲ 31%
2	Java	▲ 28%
3	Software Development	▲ 17%
4	JavaScript	▲ 25%
5	Python	▲ 28%
6	Project Management	▲ 20%
7	Linux	▲ 13%
8	Oracle	▲ 25%
9	Git	▲ 63%
10	Microsoft C#	▲ 35%
11	Scrum	▲ 33%
12	Information Systems	▲ 20%
13	DevOps	▲ 45%
14	Quality Assurance	▲ 19%
15	.NET	▲ 57%
16	SQL Server	▲ 25%
17	UNIX	▲ 12%
18	C++	▼ -2%
19	Agile Development	▲ 30%
20	Unit Testing	▲ 31%
21	Web Development	▲ 79%
22	AngularJS	▲ 51%
23	Systems Engineering	▲ 18%
24	Atlassian JIRA	▲ 39%
25	System Administration	▲ 20%





For weekly updates and insights on how the COVID-19 pandemic is impacting tech, please visit the [Dice COVID-19 Resource Center](#).

ABOUT DICE

Dice is a leading tech career hub connecting employers with skilled technology professionals and providing tech professionals with career opportunities, data, insights and advice. Established in 1990, Dice began as one of the first career sites and today provides a comprehensive suite of recruiting solutions, empowering companies and recruiters to make informed hiring decisions. Dice serves multiple markets throughout North America.

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Methods

To gather these insights, job posting data was provided by Dice's partner, Burning Glass Technologies, which has a database of more than 1 billion current and historical job postings worldwide. Dice analyzed over 6 million tech job postings in the U.S. To gather our specific dataset, we filtered for "Information Technology" jobs with hours that fall under "Full Time," "Part Time" and "Not Listed," as well as job types that are categorized as "Permanent," or "Not Listed."

The datasets used for the "Top Employers" section were gathered by using the above criteria, with an additional filter for job postings that only derive from employer sites. All other data incorporates job postings from employer sites, job boards, staffing agencies and free job boards.