



Powering the Digital Journey

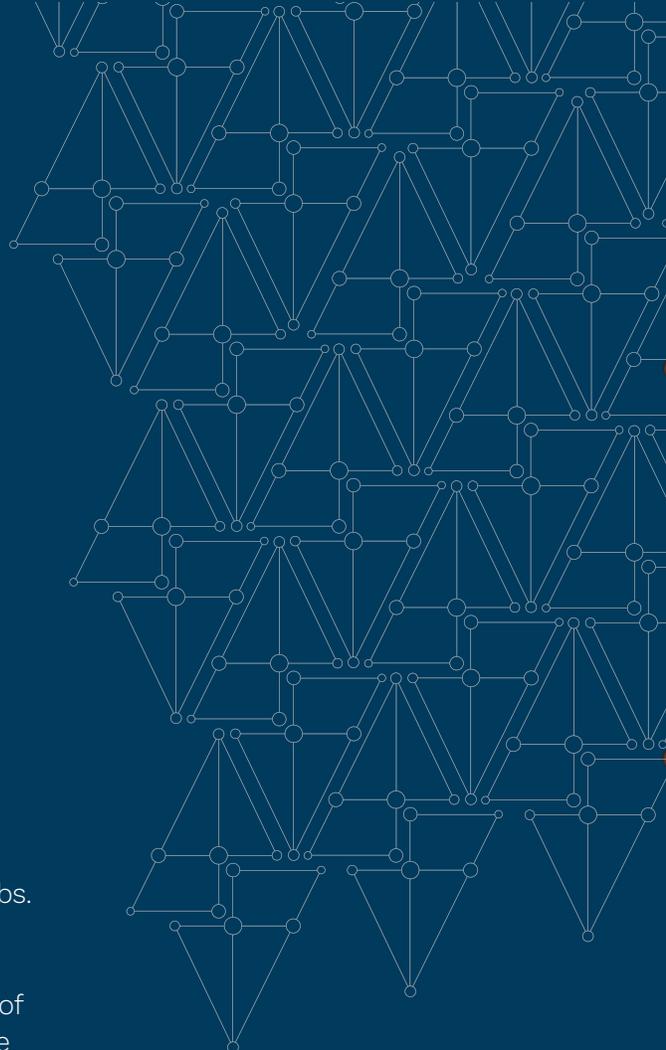
Tech Jobs Facing the Biggest Talent Shortage in 2020

Given the global impact of COVID-19, businesses around the world have felt the significant need to adapt their products and services quickly, all while managing a remote workforce. Although many industries have proven to be resilient, companies within several booming industries are experiencing their own set of unique challenges, including the need to hire for highly in-demand tech jobs.

After conducting comprehensive market research, we found the following five positions are in greatest demand today. While many of these engineers were highly sought after prior to the pandemic, the challenges raised during these unprecedented times caused an even greater talent shortage in the current market.

TOP TECH POSITIONS IN A TALENT SHORTAGE:

- 01** Data Professionals & Machine Learning Engineers
- 02** Automation Engineers
- 03** Full Stack & Mobile Engineers
- 04** Infrastructure Engineers
- 05** Cybersecurity Engineers



LEADING INDUSTRIES: HEALTHCARE, SOCIAL MEDIA, FINTECH

Data Professionals and Machine Learning Engineers

A plethora of stable companies and institutions have stepped up to help combat the virus and solve the challenges that come along with it. Many are quickly applying Data Science, Artificial Intelligence (AI) and Machine Learning (ML) to help provide solutions for treatments, as well as creating prediction models to aid in preventing or containing the spread. The already vast need for Data Science and Machine Learning professionals across several industries has increased 50% in 2020 due to job demand.

The most immediate need for these professionals is within the healthcare industry. ML and Data professionals are analyzing data provided by the White House and other organizations to find a vaccine and medications that can help with COVID-19 recovery. One focus of these studies is to analyze data from existing drugs with the goal of predicting efficacy levels before reaching trials, thus speeding up the roll out to markets.

Job postings for Data Scientists have increased by 77.6% since 2016. The number of ML openings grew by 344% between 2015 and 2018.

*According to Indeed

Similarly, AI is using this same data to expedite the diagnosis process by identifying differences in CT scans between patients infected with COVID-19 and those with ordinary viral pneumonia with 96% accuracy. Additionally, use of AI has reduced the diagnosis time from five minutes to 20 seconds.

Demand for AI talent has grown by 74% annually over the past 4 years, and an increased demand for those skills in 2020 has exposed an even greater talent shortage.

*According to Indeed

Outside of the healthcare industry, Machine Learning and Data professionals are making headlines for preventing detrimental and inaccurate information around COVID-19 from spreading across social media feeds. Previously a manual process, algorithms have since been created to mitigate this type of spam. More professionals are needed as the AI is not yet perfected, and the models are in early stages.

Lastly, Machine Learning and Data professionals are working diligently to analyze and predict data around stocks to rescue hedge fund portfolios. This predictive analysis is also leveraged to speed up lending decisions on the small business front, making funds available only to qualified prospects.

Fundbox, a tech firm in San Francisco, is using this technology to assess the risk with small business borrowers, stating they can make a lending decision in about three minutes. Speed is of the utmost importance in these unprecedented times, as they estimate many small businesses only have 30 days of operating costs saved. Creating these types of innovations is crucial in helping the U.S. financial markets recover from the COVID-19 pandemic.

LEADING INDUSTRIES: LOGISTICS, HEALTHCARE, E-COMMERCE

Automation Engineers

For some time, automation has been an important component to logistics and manufacturing, with more recent penetration into essentially all industries. In fact, analysts have long estimated an imminent upcoming skills gap as more than 3 million automation jobs will need to be filled in the next decade.

More than 3 million automation jobs will need to be filled in the next decade. Analysts long ago predicted an imminent skills gap, and today's climate has only increased those needs.

*According to Oxford's Economics Report

Today's climate has only increased the need for automation engineers, specifically in logistics and infrastructure processes. Automation is vital for logistics in any retail or e-commerce business – including healthcare and biopharma when it comes to the automation of fill lines for manufacturing. Even the global food automation market is expected to grow 7.5% to \$14.3B by 2025.

When it comes to logistics, grocers and e-commerce companies are increasingly leveraging automation engineers to keep up with the demand of online orders by automating steps in the e-commerce process. For example, Walmart is piloting this in a mini-warehouse equipped with robots learning an algorithm to move items from warehouse shelves, to carts, to drivers, and in some companies, even attempting to automate delivery with self-driving vehicles.

In addition to automation of operational logistics, creating a seamless (and effective) online platform experience requires the touch of automation engineers. Many consumers have felt the effects of capacity, reliability and time processing issues as retail outlets scramble to scale to meet demand for online shopping. E-commerce, biopharma, healthcare and grocery organizations have increased demand for Automation Engineers when it comes to network automation, ensuring traffic flows and configurations align with the requirements. In both B2B and B2C instances, software solutions are needed to automate processes like research, development, QA, data, product deployment, infrastructure and security workflows. For this, both Infrastructure Automation Engineers and Automation Software Engineers are vital to ensure product resilience during the increased capacity utilization.

According to Forbes, 67% of organizations will be looking to leverage AI to intelligently automate IT processes to some extent within their IT environments in the next three years. Since 2019, there has been a 29% increase in jobs that require knowledge of Ansible.

*According to Forbes

LEADING INDUSTRIES: TELEHEALTH, GAMING, SOCIAL MEDIA

Full Stack and Mobile Engineers

Full Stack Engineers' well-rounded knowledge is crucial in providing highly demanded resources during these unprecedented times. With 50% of doctors shifting their appointments to virtual sessions in the current conditions, telemedicine is on the rise – creating an extreme volume of sessions, prolonged call wait times and application crashes. Telehealth services are seeing their IT loads quadruple, and it will only continue to rise.

Even previous to COVID-19, there was a **35% yearly increase in demand for Full Stack Engineers for the past four years.**

*According to LinkedIn's 2020 Emerging Jobs Report

These products have an abundance of integrations and dependencies, making Full Stack and Mobile Engineers necessary to maintain them, especially during times of increased traffic. These Engineers are overseeing desktop and mobile interfaces, mobile processing integrations, and cloud infrastructures, all while ensuring HIPAA compliance. This requires that all end points are secure and configured properly.

In other industries like gaming and social media, companies are accommodating these new challenges by scaling their development teams and hiring additional Full Stack Engineers. With game downloads increasing by 80% in just one month, these companies need to act fast to support the increased demand and subsequent increased outages.

Full Stack Engineers are commonly hired in the gaming industry, which has seen an **80% increase in downloads in just one month.**

*According to App Annie

It's common to hire Full Stack Engineers in gaming as their platforms require someone with knowledge around not only the front end, back end and infrastructure, but also video audio processing, design and storytelling. A critical team member lacking any of these skillsets will slow work and make it more difficult to scale, which companies cannot afford amid the increased demand.

Similarly, social media giants have created an even higher demand for data professionals in the active war for talent as they switch to AI for ensuring content quality control across their sites. As a result, supplementary Full Stack Engineers are needed to implement infrastructures and build data systems for these AI and Data professionals to process large data sets in real-time.

LEADING INDUSTRIES: LOGISTICS, CLOUD SERVICES

Infrastructure Engineers

Soaring online traffic is testing the resiliency of cloud providers, as digital services adjust and adapt to record surges in usage. Microsoft saw a 770% increase in cloud service usage, while virtual sharing dashboards such as Google Docs saw an increase in use of 42%.

Soaring online traffic is testing the resiliency of cloud and internet providers. Cloud service providers like Microsoft have seen a 770% increase in usage, and online shopping has doubled.

*According to Microsoft Azure

Following the sudden growth in traffic, these tools need engineers to help provide the infrastructure groundwork enabling stability, predictability and future expansion of products and features.

Largely due to the global work from home instructions, internet usage has increased by over 50% in recent weeks. Therefore, more than 44% of the US population faced network degradation due to traffic congestion, with download speeds falling by 24%.

To alleviate some of these issues, some service providers have even asked their customers to refrain from using internet services for gaming in order to protect their infrastructure.

Not to mention, with as many as 75% of all restaurants forced to temporarily close due to Government regulations, on-line shopping activities and delivery demands, particularly for groceries, have increased by up to 200%. As a result, the demand for Infrastructure Automation Engineers has exponentially increased as retailers work to guarantee instances and software work together for a seamless e-commerce platform experience.

In addition, with retailers' creation of automated delivery services, cart systems and pick up networks, Infrastructure Engineers are in high demand to build end-to-end ownership of networks and related systems for the majority of applications that support warehouses, fleets and robotics.

As companies ramp up efforts to keep people connected – with as many as 900 million Microsoft Teams meeting minutes per day – team collaboration services are encountering an unprecedented amount of bugs and errors, resulting in up to 250+ tickets per hour.

*According to Down Detector

LEADING INDUSTRIES: HEALTHCARE, CLOUD SERVICES, INFRASTRUCTURE

Cybersecurity Engineers

Cybersecurity attacks in healthcare have increased by 150% since March of 2020, and a coalition was formed to provide defensive tools to industry companies and hospitals as a result. Hospitals and their remote workforce are most at risk because of the increased level of vulnerability that exposes them to cyber attackers, due to working from home.

Cybersecurity attacks have increased by 150% since March 2020.

*According to The Collective Cyber Defence for Healthcare

Email phishing attacks are the primary weapon, since home WiFi networks do not have the same system defenses as businesses. Home networks lack proper firewalls, anomaly detection monitoring, and in some cases, even VPNs.

By 2021, there will be 3.5 Million unfilled cybersecurity roles globally, and the yearly cost of cybercrime will reach \$6 trillion, experts predict.

*According to Cybersecurity Ventures

Retail, finance and other consumer-based industries are especially focused on shoring up their defenses as an estimated 61% of the workforce is currently working from home. Additionally, the cloud computing and infrastructure industry has an immediate need to implement preventative measures against this increased number of cyberattacks.

These industries are currently prioritizing efforts around creating model risk assessments and implementing security capabilities to include key management, encryption, de-anonymization, data masking, tokenization, and more. Because of increased phishing attacks, companies are also working to automate cyberattack detection.

These vulnerabilities were overlooked by many companies and leaders, across several industries, that are now scrambling to hire experts to secure their remote workforce.

MANY COMPANIES ARE HIRING SECURITY PROFESSIONALS TO:

- Safeguard their migration to cloud servers
- Protect their network infrastructure
- Employ authentication policies
- Apply security standards across their development process, end-to-end
- Employ patch management strategies
- Conduct and maintain threat monitoring and zero trust networking

What Does This Mean For You?

The challenges of today's market are actively impacting companies across all industries on a global scale, resulting in an increased demand for talent to support those needs. Despite a 13.5% unemployment rate in the United States in May 2020, the unemployment rate for individuals in computer science related jobs declined from 3% in January 2020, before the pandemic spread to the US, to 2.5% in May 2020.

If you're a hiring manager, the time to fill any gaps in your team is now, before the talent shortage worsens. Pivot Technology Services can help provide you with the knowledge you need to move forward. Visit our website or contact our Pivot Workforce Services team at workforceservicesteam@pivotts.com to learn more.

About Us

Pivot delivers best-in-class information technology services and solutions to help leading organizations optimize infrastructures, improve business processes, lower costs, and achieve strategic objectives.

Our client-first approach combines leading-edge technology with expert design, rapid implementation and integration, and best-practice methodologies, powering digital transformation from the cloud to the edge to the workplace.

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