

A bright sun in a blue sky with wispy clouds and a rocket trail.

# Top 10 Hottest IT Skill Sets

USA  
2019-2020

**SCIENTE**<sup>TM</sup>  
Business Technology Consultants

## USA IT Job Market Outlook

Several years ago, the Bureau of Labor and Statistics had projected that employment in “computer and IT occupations” would grow 13 per cent between 2016 and 2026, adding 557,100 new jobs over that period. The key drivers that were predicted to result in this above average growth were the usual suspects – advances in cloud computing, Big Data and information security.

### THE IT INDUSTRY IS GROWING AT A FASTER CLIP THAN PREVIOUSLY FORECAST.

In 2019, CompTIA reported that 261,000 new jobs had been added over the previous year, and that number alone is a little more than 48% of the BoLS’ 10 year job addition estimate. Clearly the market seems to have grown much faster than previously anticipated.

According to the US Bureau of Economic Analysis (BEA), the US IT industry contributed around 5.5 per cent to the overall US GDP value, and 0.47 per cent to the US’ national 2.2 per cent GDP growth rate in Q4 2018 (2.9 per cent for the full year 2018).

In Q1 2019, the US GDP growth rate was pegged at 3.2 per cent and while the BEA numbers for the IT industry’s contribution to that growth are still awaited as at the time of this report, there is no reason to believe that they will be substantially different than in earlier periods.

Despite it’s relatively small size, the US IT industry punches well above its weight in terms of contribution to the overall economy, not just in terms of direct numbers, but also in terms of how much of a productivity driver and enabler it is to just about every other industry sector, apart from being extensively used by individual consumers themselves.

It may be argued that without the beneficial pervasiveness of IT and the extent of digitization the US economy may not have been able to deliver the kind of growth that it has since the financial crash of 2007.

In the US, there has been healthy growth visible in both, the hardware as well as software and services subsectors of the IT industry, with the greater amount of growth coming from the latter subsectors. While

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global economic and market conditions indicate that there may be risks to overall growth over the next year, business confidence is currently high. The short term forward trend is currently on the downswing (according to OECD and Moody's Analytics reports) but not by enough to take it as a significant dip.

### SKILLS IN NEWER TECHNOLOGIES ARE THE MOST IN DEMAND AND DRIVING FURTHER GROWTH.

Judging by the trends that are visible all around, there has been an explosion in the amount of information being published online, in the uptake of computing on the cloud, in the pervasiveness of mobile devices and technologies, and in the growth of the use of artificial intelligence. While a lot of traditional IT systems, particularly those that power the back rooms of business and industry continue to run, the need for better customer experiences has resulted in a push for digitalization and digital transformation initiatives. New technologies continue to advance and enable new and innovative use cases.

### WHAT ARE THE INDIVIDUAL SKILLS THAT MAKE UP THE MOST HIGHLY DEMANDED SKILL SETS?

The question, of course, is that with the addition of all this new tech, a large range of technology areas that use them, and the name of a new technology, tool or platform appearing almost every few weeks, what the skill sets are that are most in demand in the job market, and how various individual skills come to be grouped together on the demand side.

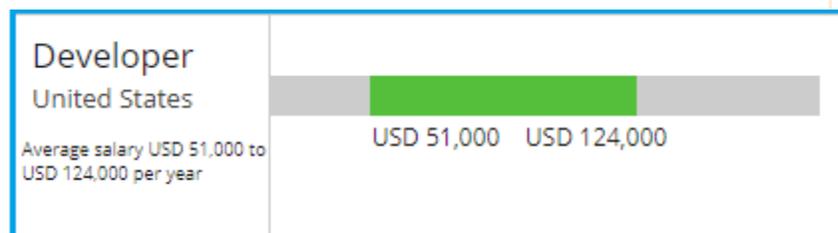
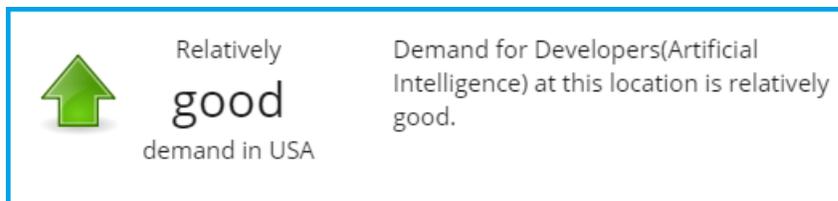
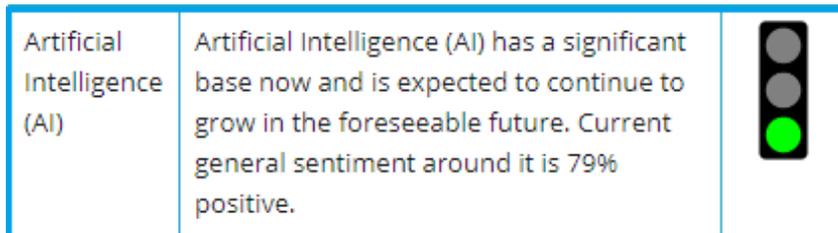
**This report provides an answer to this question.**

*“While a lot of traditional IT systems, particularly those that power the back rooms of business and industry continue to run, the need for better customer experiences has resulted in a push for digitalization and digital transformation initiatives.”*

## JOB MARKET INTELLIGENCE FROM MYTECHLOGY.COM

In addition to tapping into our solid understanding of the IT job market, our forecast of the top ten IT skill sets that will be in demand in the USA over the next year has been based on an analysis of online job postings, our internal data, and also a number of job market data points that are available at [MyTechlogy.com](https://www.mytechlogy.com), our IT career guidance platform, such as

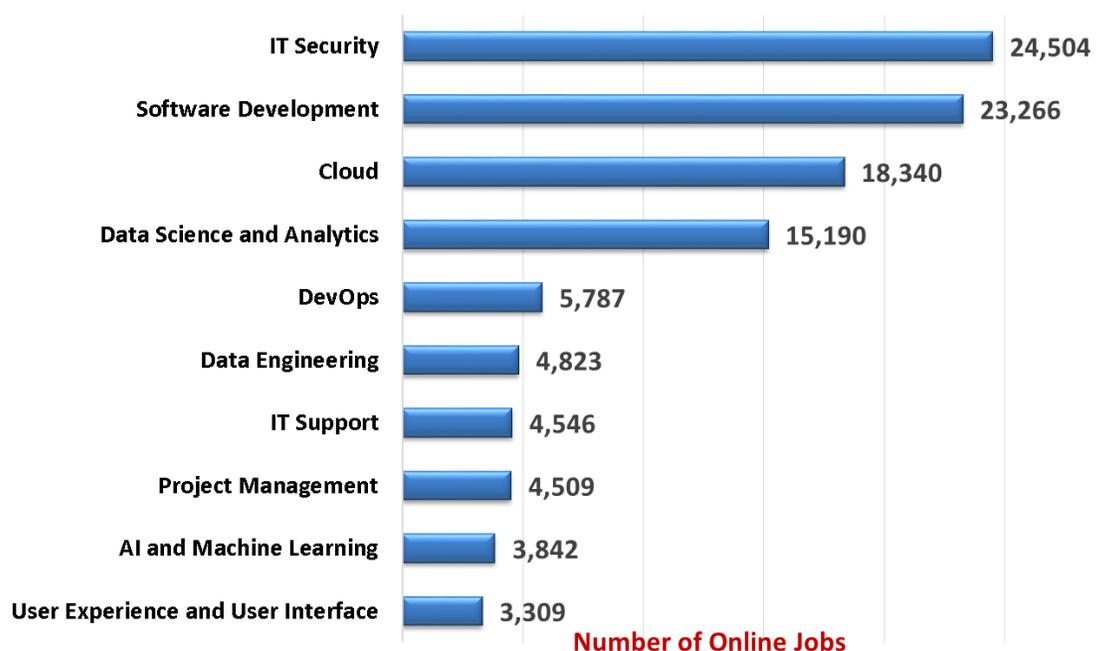
- The actual quantum of market demand in the middle of 2019 (by role and skill)
- Predictions of demand for individual skills based on global and local market intelligence
- The skills and capabilities that employers are looking for
- The digital adoption trends forecast for key IT hiring sectors



**MyTechlogy**  
Where IT Talents Shine

## Top 10 Hottest IT Skill Sets in USA

Based on the number of online US job postings available at [MyTechlogy.com](https://www.mytechlogy.com), the top 10 Hottest IT Skill Sets in the USA are the following.



An analysis of the specific skills that comprise each skill set, the demand trends and relative number of jobs per individual skill provide insights on what's driving the rankings to appear as they do.

Usually, the number of jobs available online represent only about 30 or 40 per cent of all jobs actually available, so to arrive at an estimate of the total number of jobs that are open a back-of-the-envelope calculation can be done by forward projecting to the remaining 60 or 70 per cent of the total number of jobs available. The relative share of jobs across each skill set still remains approximately the same, and so the available numbers are adequate to detect patterns and infer trends correctly.

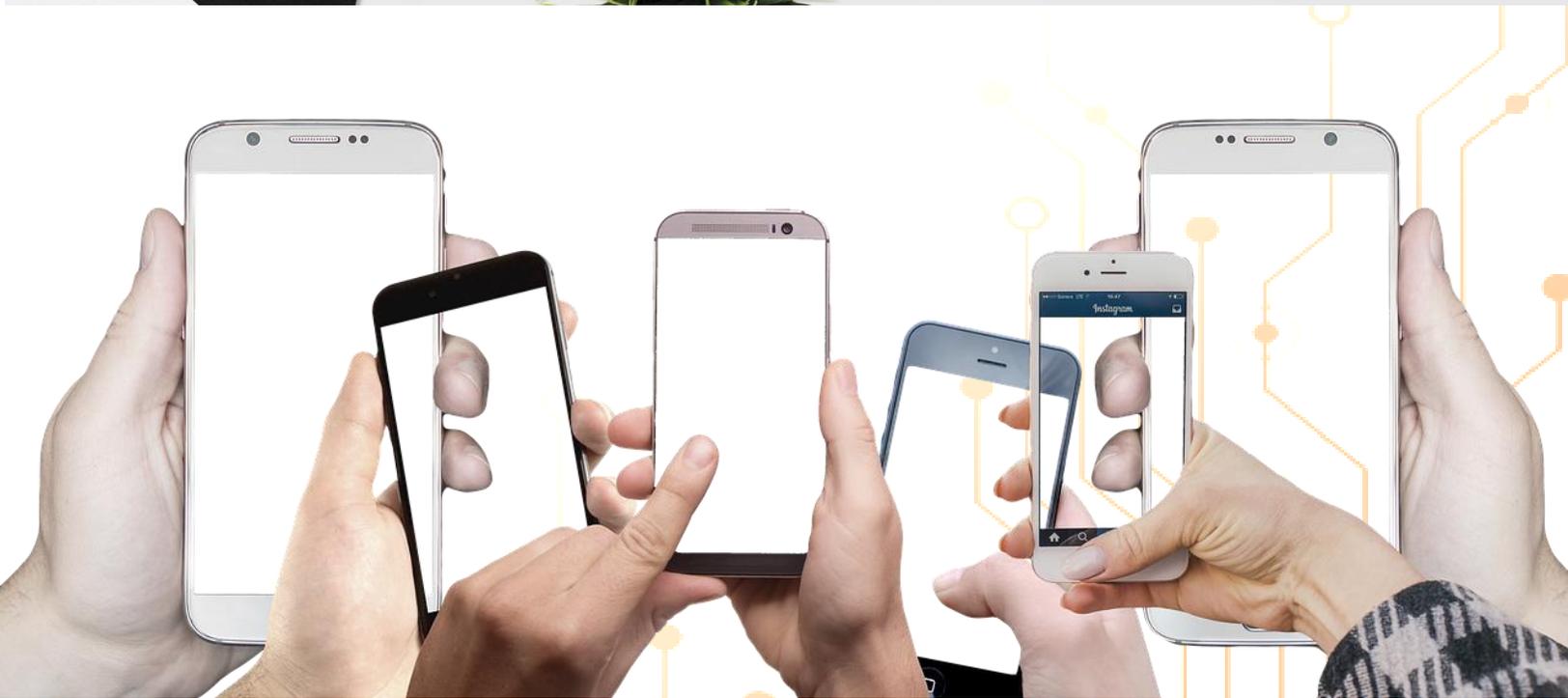


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*Apart from the obvious pattern in the job data numbers, what is significant is the amount of overlap in skills there is across various skill groups (or skill sets).*

*The degree of overlap provides insights into how the nature of IT profiles is changing as computing increasingly involves the cloud, mobile devices and Big Data.*

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## Insight #1:

# IT Security is the single largest skill set required.

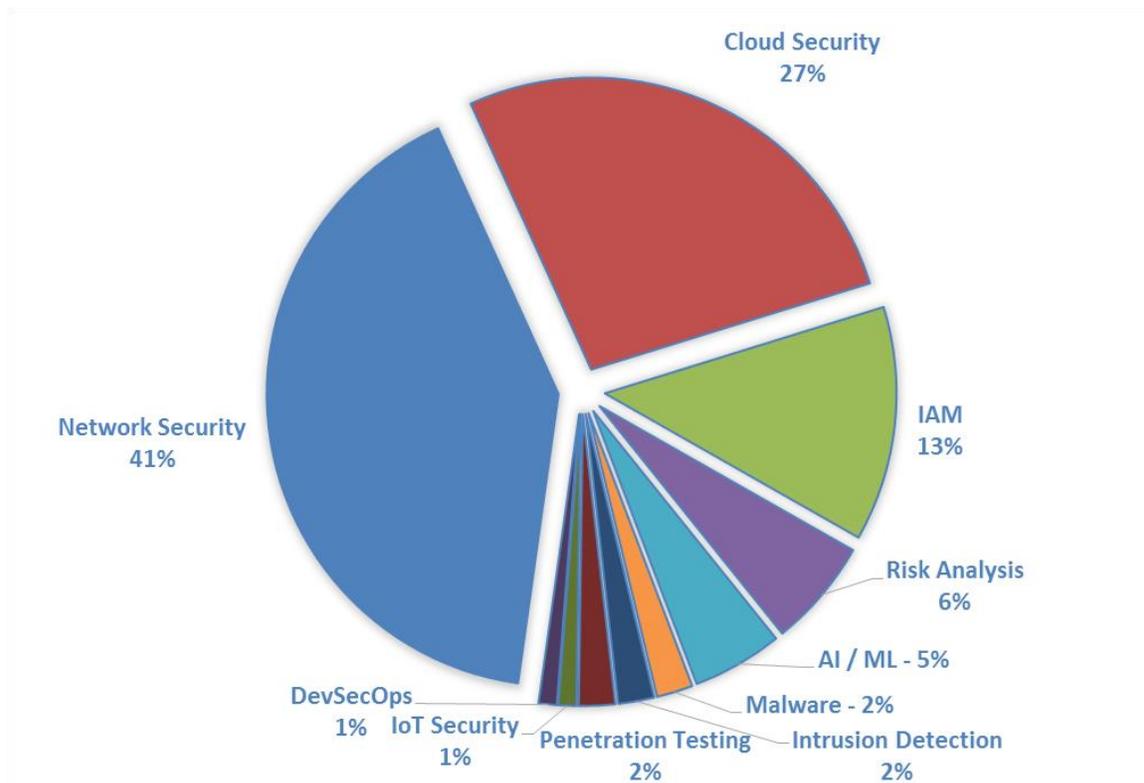
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Over the past few years, with the accumulation of many types of data in the hands of large organizations, and the ubiquitous use of the internet for all kinds of applications, data has emerged as a significant and vulnerable resource. An increase in the number of attempts to illegally acquire corporate information assets or private data, or to sabotage a competitor's or country's IT infrastructure and operations, have resulted in an increased need to manage IT risk and ensure the security of global corporate information assets, networks and IT infrastructure.

**As at the middle of 2019, there were as many as 24,500 open positions requiring various IT security skills advertised in the public domain.** This area of technology has grown to include every area of IT operation in its scope, spanning facilities, systems, data, internet and networks.

As with some of the other key role requirements in 2019, security professionals must be able to work across a range of aspects of security ranging from cloud security and intrusion detection to malware prevention, application security, internet security, and so on. They need to possess skills in a number of areas relating to security, and often need to also have some knowledge of hardware, virtualization, operating systems (particularly Windows and Linux), scripting and at least one programming language.

The top skills that are being asked for in the security skill set (starting with highest demand) in 2019 are as follows.



**68%** of security skill set openings relate to network and cloud security.

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*Over the rest of the year it is anticipated that some of the lower ranked skills such as IoT security and DevSecOps will begin to move up the table as 5G enables a greater proliferation of IoT applications.*

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In 2019, salaries in this area ranged from \$ 58,000 to \$ 128,000 for junior to mid-level consultants, and they can be expected to either stay firm or increase over the next year, depending on supply.



(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))

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## Insight #2:

# Software Developers are expected to be able to work across the technology stack.

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Whatever the type of application required, whether it's for web applications, enterprise product software, mobile applications, games, scientific applications, and so on, software developers are required to build them, and this is not going to change until automated software generation is not only perfected but can be used anywhere. It's not surprising therefore, that software development skills are only just behind IT security in terms of demand.



*What is changing, though, is the expectation of what a software developer is able to do. A good 30% of all job openings for developers require full stack development skills.*

This means that developers have to be able to work across the front, middle and back ends of the application, rather than being specialized only in either a front end technology, a back end technology or the middle layer in between. In certain cases they are also expected to be able to work with Big Data, or to be able to interface with various kinds of device interfaces. An important ability is to be able to go beyond a comfort zone and learn how to work with new tools and libraries, or even acquire a new skill.

The top skills that are required in the software developer skill set in 2019 are shown below.



Towards the middle of 2019, there were approximately **23,260 open Software Developer positions** advertised online for locations across the USA, 24% of which required Java, often along with a front end skill such as Javascript.

Although Python has been rising in popularity, particularly due to its use in machine learning and artificial intelligence, it still has a way to go before it catches up with Java in general popularity across all types of applications.

In 2019, salaries in this area ranged from \$ 51,000 to \$ 124,000 depending on specific skills, experience, and profile. With the demand for developers expected to increase, and supply likely to face tighter conditions, salaries can be expected to increase, particularly for high-demand skills.

(Base data and skill predictions from [MyTechlogy.com](http://MyTechlogy.com))

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## Insight #3:

# Cloud Computing is growing faster than expected.

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Going back to the BLS' predictions, we know with certainty today that the IT industry as a whole has grown faster than expected. The data on jobs and other information published by industry analysts shows that this growth has happened more in the newer technology spaces such as cloud, Big Data and so on, rather than in the traditional types of IT. Industry data also reveals that the growth in the cloud space has been accelerated by cost pressures, the advent of IoT, analytics, DevOps and greater digital transformation efforts across many industries.

It's not surprising therefore, to find that cloud skill sets are highly sought after. The cloud space, though, is rather large, spanning infrastructure, software, platforms, and security across them all. Cloud could be a core skill set, dealing with setting up and enabling the cloud, to administering and maintaining it. Cloud skills also be part of a secondary skill set for those whose core skill is in software development, security, middleware infrastructure or databases.

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**Close to *18,340 open vacancies for various types of Cloud Specialists* were available online in mid-2019.**

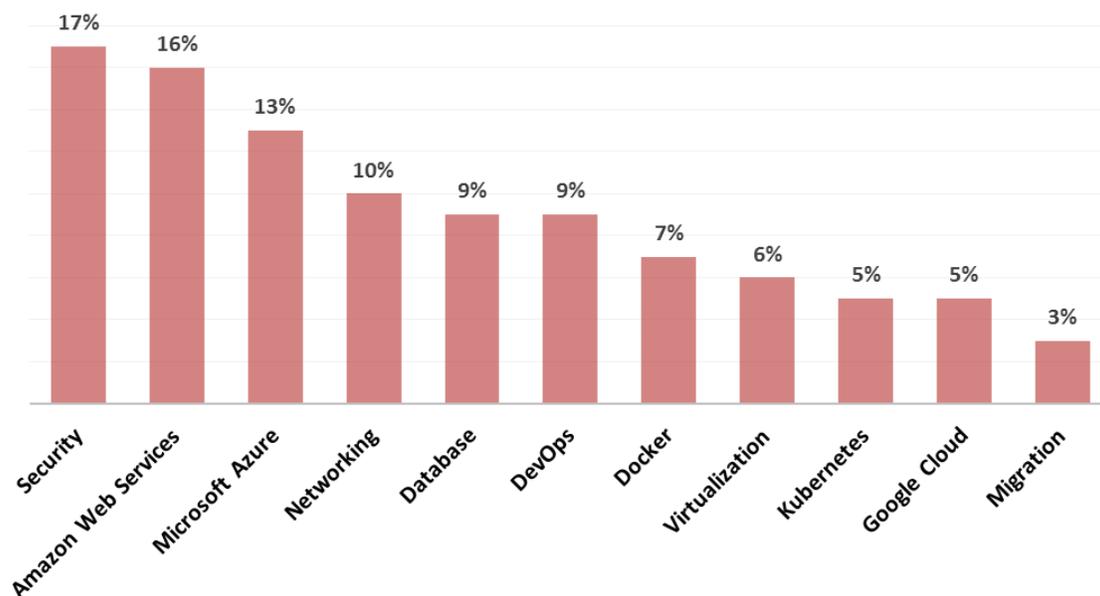
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While demand will remain firm there may be a moderate increase in the range of skills sought over the next year as cloud providers continue to introduce new products and services on their respective platforms.

AWS dominated in terms of market share in 2018, but with Google and Microsoft recording very good cloud business growth rates the proportions of skills required in the market for each of these major platforms is changing.

The top skills that will continue to be required in the cloud skill set over the next year are:



Some of the individual skills named here are skill groups by themselves, for example, Networking, and the three major cloud platforms (Amazon, Azure and Google Cloud).

To restate the demand, as at the middle of 2019 there were about 18,340 openings involving cloud technology across the USA.

So far in 2019, salaries in this area ranged from \$ 53,000 to \$ 150,000 depending on specific skills, experience, and profile and they can be expected to increase over the next year, with variations for skill combinations and their availability in the market.

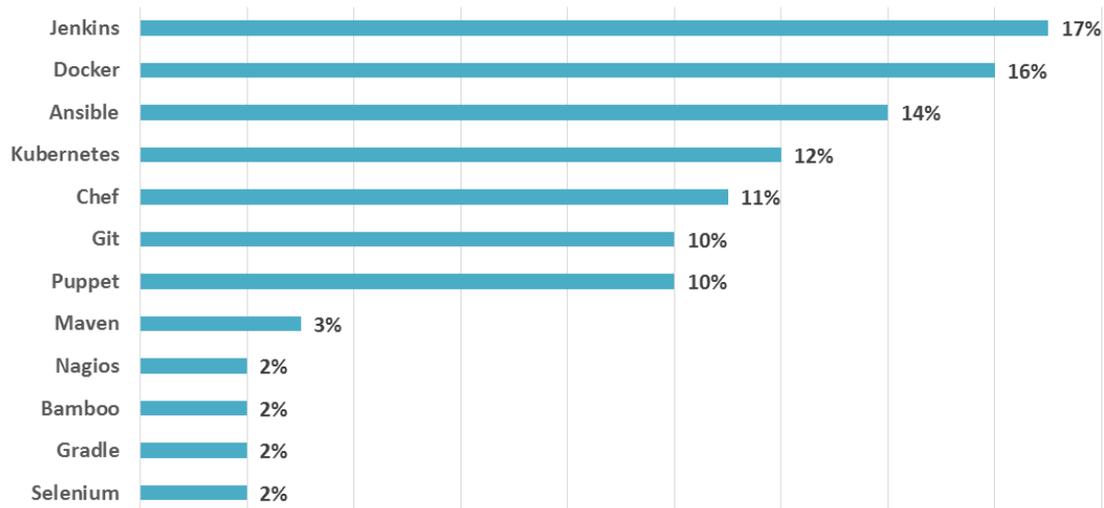
*(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))*

## DevOps

Agile methods of managing the software development lifecycle have become the de facto standard for a lot of new development. Demand for DevOps, which facilitates Agile methods through the use of tools for automating the movement of software through its lifecycle phases in frequent cycles, is (unsurprisingly) growing in tandem. The availability of cloud platforms becomes yet another facilitator for both, Agile and DevOps, as it provides an environment in which it is easier to implement all the tools and make the necessary connections between working spaces. And so, with the growth in cloud computing, there is a corresponding growth in DevOps requirements. It may even be argued that the availability of DevOps strengthens the business case for cloud. Whatever it is, the two appear to be growing strongly together.



The top skills for which demand has grown in the DevOps skill set are as follows.



While each of these are distinct skills it helps to acquire as many of them as possible as it is quite unlikely to find a job opening that requires just one or even just two of them. They would most likely be required along with at least one software development language skill.

There are currently about 5790 open positions online across the USA requiring DevOps skills.

Salaries in this area range from \$ 58,000 to \$ 145,000 depending on specific skills, experience, and profile and they can be expected to increase in the coming year.

*(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))*

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## Insight #4:

# Big Data is enabling a huge wave of automation.

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Big Data technologies, having emerged just five to seven years ago, are now in use in almost every medium to large scale corporate business. As the commonly used quote goes, “data is the new oil”, and Big Data technology has made it possible to capture, store, manage and process all kinds of structured and unstructured data. These technologies have in turn made it possible for the fields of analytics, data science and automation using artificial intelligence and machine learning (AI/ML) to thrive and grow.

Big Data Engineers (often called Data Engineers) and Developers are required to set up and administer the Big Data stack and repositories, and, more importantly, be able to manipulate and process data from or across repositories so that it can ultimately be made available in usable form to downstream analytics and data science professionals.



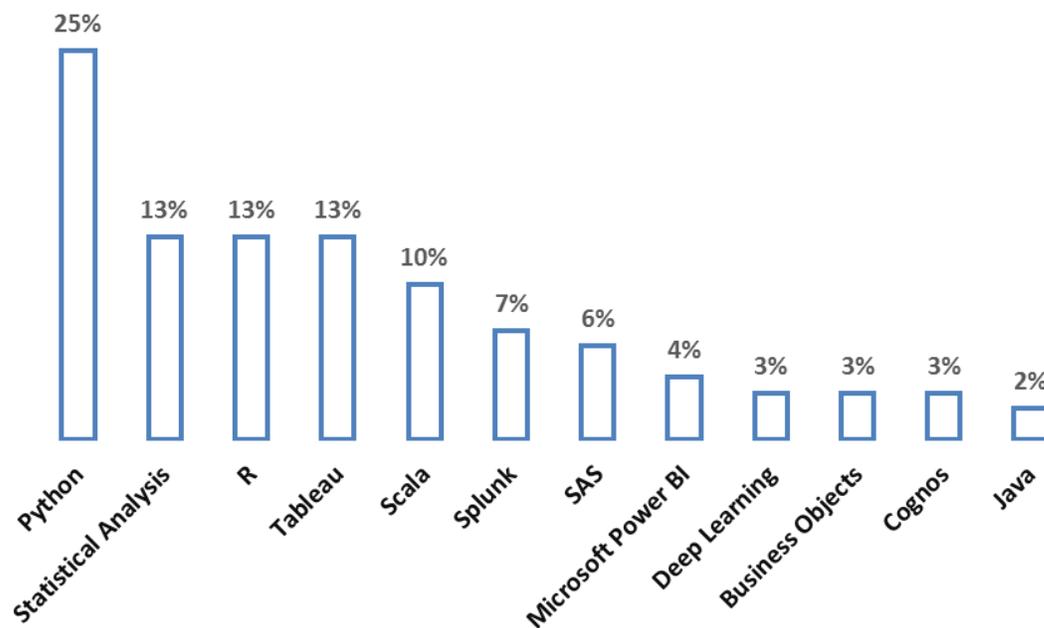
## Data Science and Analytics



With analytics having matured and being applied to a wide range of business functions across almost every industry sector this is now a well-established area of market demand. The role deals mainly with the analysis of data and extraction of meaningful insights from it.

Analytics requires the successful application of skills in data sourcing, preparation, and analysis. With the handling and preparation of data usually being a skill area by itself (Big Data), the Analytics role now usually refers to that end of the life cycle that requires business domain knowledge, data manipulation, programming, statistical analysis and reporting skills. Predictive analytics may require knowledge of machine learning techniques as well. Data scientists are expected to possess all of these skills. They normally account for about 7% of all analytics professionals.

The top skills that are required in the Data Scientist and Analytics roles in 2019 are as follows.

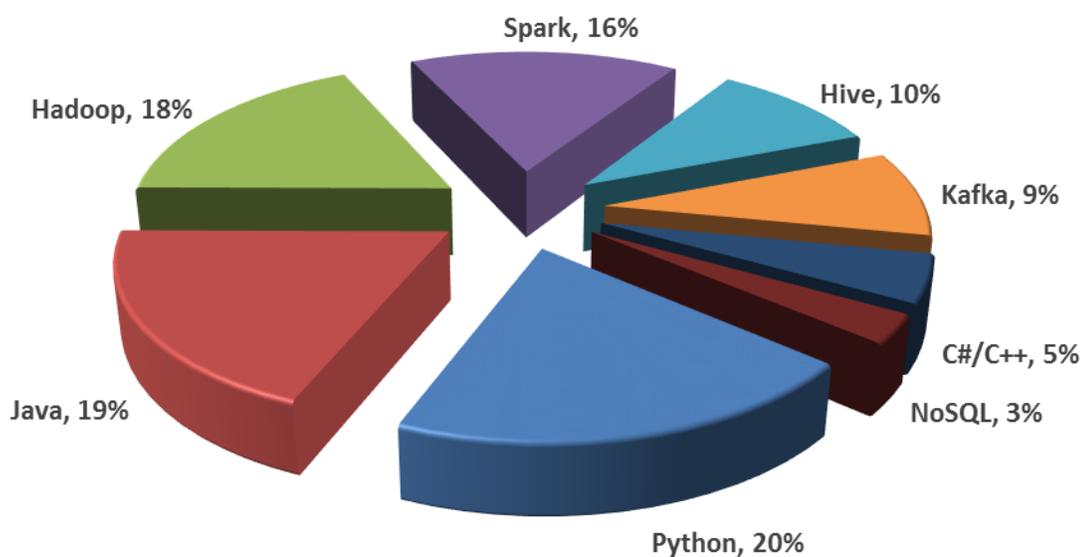


In 2019, salaries in this area have ranged from \$ 35,000 to \$ 150,000 depending on specific skills, experience, and profile and they can be expected to increase a little for Analytics professionals, with Data Scientists commanding higher increases through mid-2020.

*(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))*

## Data Engineering

The top skills that are required in the Data Engineering skill set this year are:



*As of mid-2019 there were about 4,900 Big Data and Data Engineer / Developer positions open in the USA.*

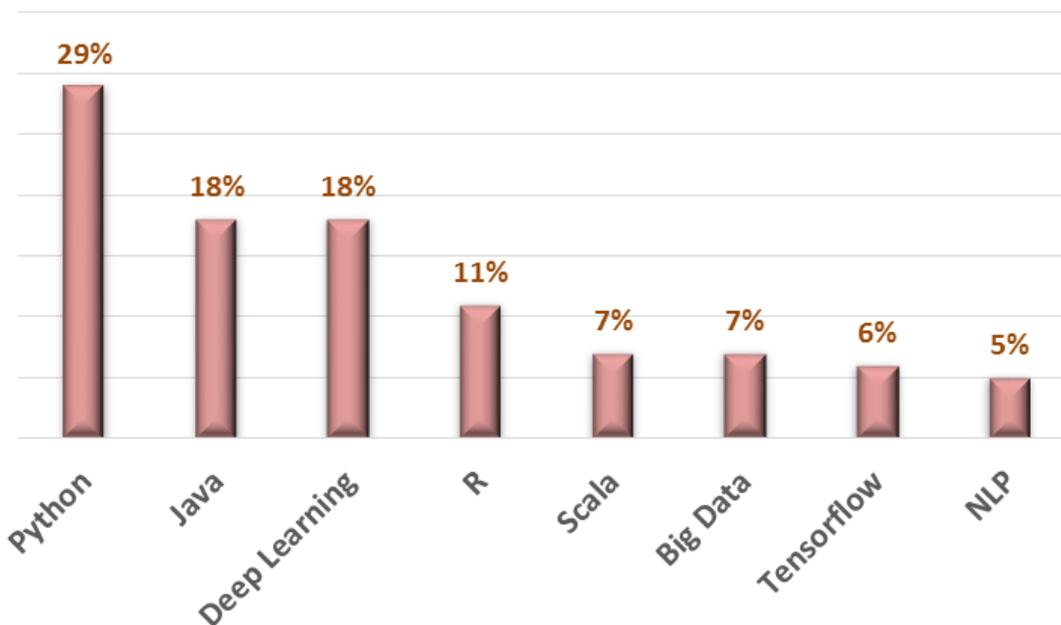
During 2018, salaries in this area ranged from \$ 50,000 to \$ 150,000 depending on specific skills, experience, and profile and they can be expected to increase moderately over the course of the next 12 months.

## Artificial Intelligence and Machine Learning

Artificial Intelligence (AI) and Machine Learning (ML) are among the hottest of the new age technology skills sets in demand. They have received a lot of media attention due to the impressive solutions that they have produced so far. AI and ML are general purpose sets of techniques that need large data sets as a prerequisite. Like data science, they are being applied in a wide range of areas across almost every industry.

There are a large number of new and existing companies that are creating new services, platforms and products that are powered by AI/ML solutions at the core. As of now it is predicted that this will be one of the key growth areas for skills for quite some time to come.

The skills that are most in demand are the ones shown below.



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***Python has overtaken Java to become the most popularly required language skill for AI and ML.***

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There are many more skills that are currently each required in small numbers and over the next year a few of them may move up the list depending on the nature of new work that is taken up.

Towards the middle of 2019 there were about 3,840 AI/ML positions advertised online in the USA.

Salaries in this area have been similar to those of data scientists working in the analytics space due to the overlapping skill sets, and ranged from about \$ 50,000 to \$ 150,000 depending on specific skills, experience, and profile but they can be expected to increase by a larger margin than for data scientists in 2020.

*(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))*

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## Insight #5:

# The nature of demand for IT Support has changed.

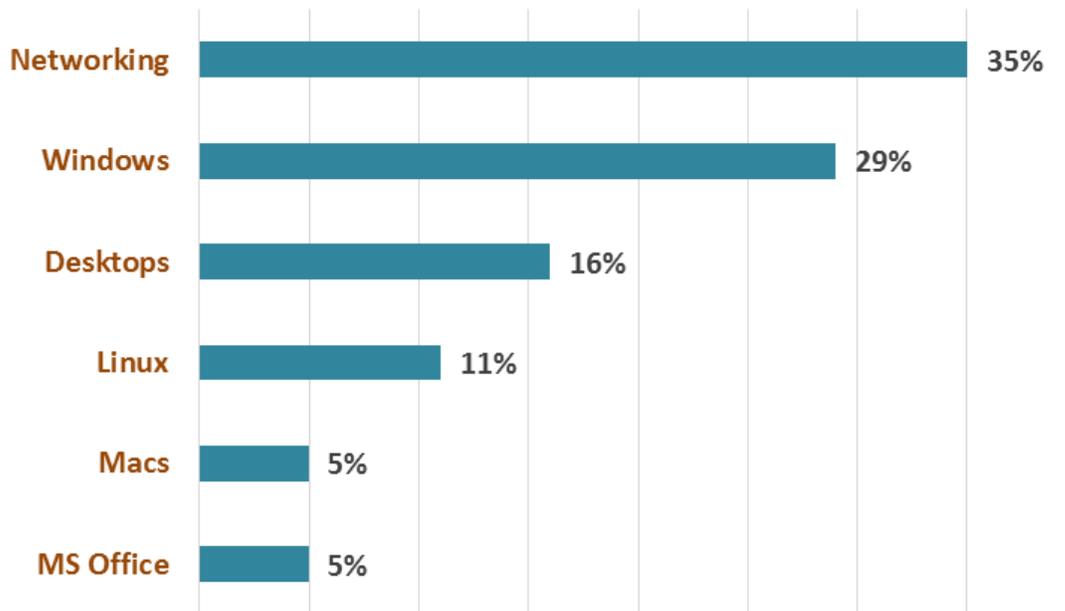
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With the use of IT being so pervasive, there is significant demand for first and second level technical support professionals. Although there have been a lot of tasks that automation is able to do there are still a whole range of tasks that need either the physical presence or the considered judgement/action of a human being.

There is a major shift in the types of roles available, though. While the demand for desktop and basic networking support remains good, the demand for a data center type of skill sets has reduced. This may be due to a number of reasons, the biggest being the rise of cloud computing and possibly DevOps. As is the case with developers, the profiles of IT support engineers working at the server end has changed into that of virtualization and cloud engineers, and also DevOps engineers.

Desktop Support Analysts are required to install and configure new PCs and peripherals, do basic cabling and network setups, install and configure operating systems (usually either Windows or Linux), configure other applications and have the equipment ready for either further configuration by remote staff, or available for use by the user. Helpdesk Analysts are required to primarily receive, analyze and resolve a range of technical problems reported to them by users, and escalate the more complex ones to additional technical teams for further investigation and closure.

The top skills that are required in the Helpdesk / Desktop Support area in 2019 are:



Most organized helpdesks also use a problem ticket management systems, and there are many of these. Prior experience with specific ones is not usually a mandatory skill.

Towards the middle of 2019 there were about 4,550 Helpdesk / Desktop Support positions available online for US locations.

In 2019, salaries in this area ranged from about \$ 33,000 to \$ 75,000 depending on specific skills, experience, and profile and they can be expected to mostly remain somewhat flat over the next year.

*(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))*

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## Insight #6:

# Demand for versatile business technology Project Managers continues to remain strong.

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Many corporations have been quite proactive in the adoption of digital methods, and undergoing larger digital transformations in their core operations so that they remain competitive. A lot of these projects involve working across technologies, various kinds of infrastructure and a range business functions.

The Project Manager's role was always required, but moving forward the quantum of digitization and the increasing sophistication in technologies to be adopted will continue to see high levels of demand for Project Managers.

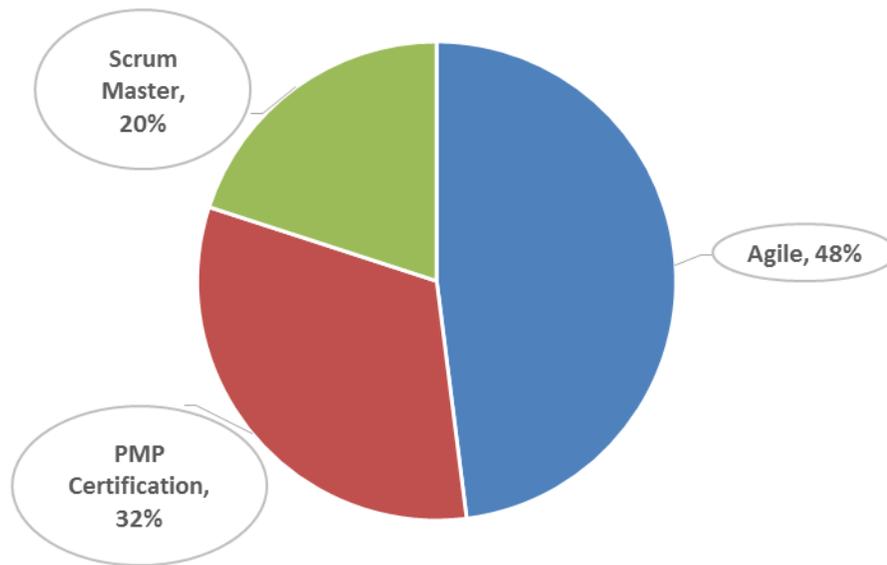
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***The right profiles will often need to come with a professional certification in project management, the ability to apply Agile methods, strong industry domain skills, and the ability to manage increased levels of complexity and teams of more sophisticated and independent technology professionals, apart from gig economy consultants.***

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The skills that are most commonly sought are:



In mid-2019 there were about 4,510 open Project Management positions online.

Salaries in this area range from \$ 45,000 to \$ 108,000 depending on specific skills, experience, and profile and may remain steady through 2020.

*(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))*

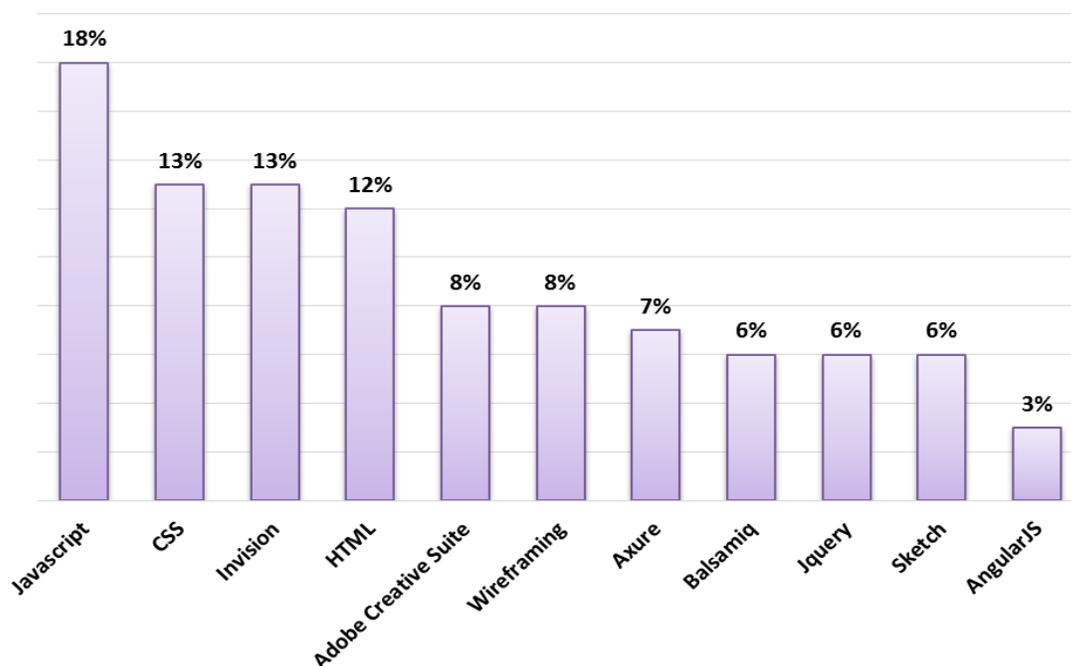
## Insight #7:

# The User Experience Design skill set keeps growing in importance.

With more and more services moving online and converging for delivery via a desktop, mobile screen, or some other device there is a significant need to have specialists apply scientific techniques to design the optimum user experience so that business objectives are fulfilled and customers are incentivized to stay close.

Enter the role of the User Experience and User Interface specialists. While the experience specialist designs the overall user journeys the interface specialist zooms in closer to the details of every step of the experience so that the outcome is ergonomic, efficient and aesthetic. UX and UI specialists spec out their ideas using mockups, wireframes and prototypes, and so the top skills in demand include the ability to use a number of tools and technologies that serve these purposes.

The top skills that are required in the UX/UI professionals' skill set in 2019 are:



***Towards the middle of 2019 there were about 3,309 UX or UI positions open online in the USA.***



Salaries in this area range from about \$ 53,000 to \$ 150,000 depending on specific skills, experience, and profile and they can be expected to increase a few percentage points over the next year.

*(Base data and skill predictions from [MyTechlogy.com](https://www.mytechlogy.com))*

## ABOUT SCIENTE INC

Science is a multi-award winning ISO9001 certified business technology consulting firm, the choice of several MNCs and conglomerates. Our core offering is to provide business technology expertise to Fortune 1000 companies.

Our vision is to be a truly purpose driven organization with meaningful goals. We strive to achieve those goals through our mission of delighted clients and community. Our efforts have resulted in our being voted the best recruitment firm for IT & engineering positions for the last 2 years in a row by our candidates, clients and a team of judges organized by HRM Asia.

### *Contact:*

#### *New York:*

Science Inc.  
350 5<sup>th</sup> Avenue, 59<sup>th</sup> Floor  
Empire State Building  
New York 10118

Web: <https://www.sciente.com/us>

#### *Singapore:*

Science International Pte Ltd,  
(EA License No. 07C5639)  
51 Changi Business Park Central 2,  
#09-06 The Signature,  
Singapore 486066

Phone: +65 6909 1082

Fax: +65 6635 3886

Web: <https://www.scienteinternational.com>