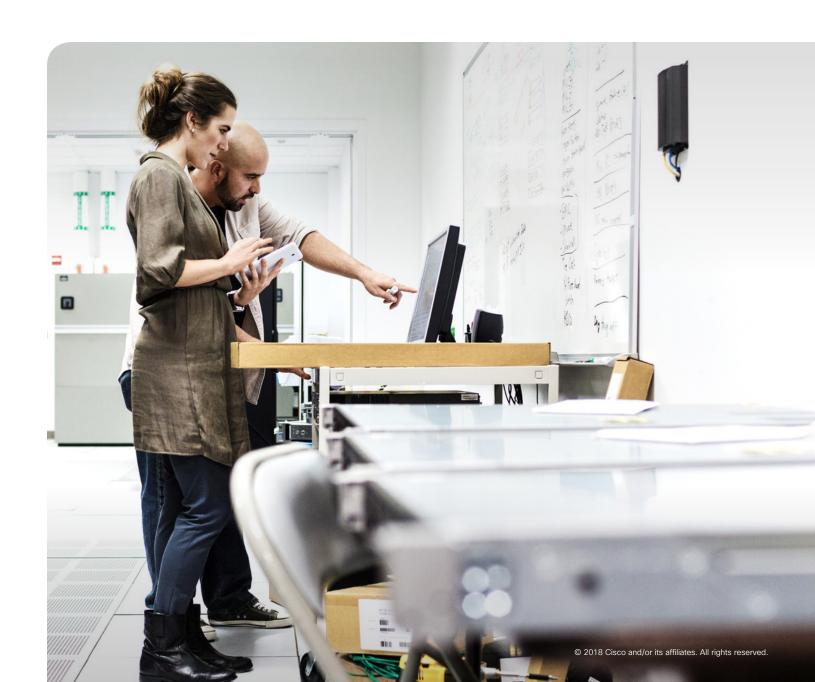# Want a Career in Analytics? Let's Look at the Data

IDC's recent research shows that job roles supporting the adoption and management of analytics technologies are some of the fastest growing—and most in-demand—IT job categories.

Introduction

A resources analyst pulls and examines daily data from sensors attached to the skyscrapers owned by his commercial property management company. The goal is to determine how much external temperature changes impact energy consumption and whether the buildings need better insulation.

A data scientist at a rapidly growing financial services firm designs, builds and runs an algorithm to predict how changes in the unemployment rate will affect the business's ability to attract new clients for its portfolio management division.

A data engineer at a telecommunications firm is part of a team designing a new, large-scale data-processing system so that the analytics team can find significant customer behavior patterns in the data generated over the telecom company's network. The goal is to track changes in bandwidth demand to better allocate network resources.

These three instances are examples of why data analytics and data science are hot job roles now and will be in high demand in the future, according to a major new job market study from IDC.[1]

IDC's recent research shows that job roles supporting the adoption and management of analytics technologies are some of the fastest growing—and most in-demand—IT job categories. IDC found that data analysis, data visualization, and business intelligence are among the top 10 digitization trends affecting IT job demand and growth.

These exciting job roles represent a huge chance for advancement across a wide range of industries, such as biotechnology, energy, finance, telecommunications, and transportation, among many others.

By 2020, 60 percent of all enterprises will be in the process of setting up a new IT foundation as part of a fully articulated digital strategy across the entire organization.[2] With digitization comes a deluge of data that must be analyzed and interpreted so it can be acted on. Only then can this digital data tsunami provide real business value to the organization.

However, this booming demand for data analytics, data science, and business intelligence also sets up a problem for organizations. Finding the right talent is among their top challenges when starting their digital transformations. Of 1,200 organizations polled globally, 54 percent believe the skills gap hampers their organization's digital change.[3]

As an IT professional, these organizations' big problem is your big career opportunity. IDC projects that data scientist and business intelligence analyst or business intelligence architect/engineer are among the top 20 most globally significant IT job roles over the long term.[4]

1. IDC InfoBrief, sponsored by Cisco, "20 Most Significant IT Roles You Should Consider," May 2018.

2. IDC press release, "IDC Reveals Worldwide Digital Transformation Predictions," November 2017.

3. Capgemini and LinkedIn, "The Digital Talent Gap: Are Companies Doing Enough?" 2017.

4. IDC InfoBrief, sponsored by Cisco, "20 Most Significant IT Roles You Should Consider," May 2018.

> Businesses and governments are desperate to find employees with the skills to dig out and interpret the meaning in all of this data.

What are you willing to invest in order to secure one of these jobs? Are you willing to learn the right skills and back them up with respected credentials? IDC found that employers value certifications from reputable companies like Cisco.[5]

You may even already have the right educational background for these IT job roles, such as a degree in mathematics or computer science (we'll address requirements in more depth later in this paper). You may already be analyzing or tracking certain forms of data, such as customer churn rates, in your current job and so have basic data-handling skills. Nevertheless, you'll probably need to add more skills and the right certifications to move into these job roles.

This white paper reviews the following:

- Why job roles in analytics are among the most in-demand, which roles are heating up, and why you might want an analytics job

- Which basic analytics skills you need to stand apart from the crowd to hiring managers, and which skills will secure and boost your career while bringing value to your organization

- How hiring and HR managers perceive the value of certification to the team, to the job candidate or employee, and to the company's ability to take up new technology successfully

- Which data management training and certifications resources Cisco offers to help you get to your goals

Finding meaning in the data deluge

The Internet is all about data now: lots of data from connected people, devices, machines, and sensors. Instead of waiting days, weeks, or months to receive customer or market data for analysis, organizations can get it right away, thanks to the always available Internet. The amounts of data generated by the preceding are mind-boggling.

Universal connectivity and the resulting volume of instantly available data fuel a soaring demand for IT professionals with analytics and data science capabilities. Businesses and governments are desperate to find employees with the skills to dig out and interpret the meaning in all of this data. The goal is to improve the customer experience, streamline operations, and uncover new markets or new ways of doing business. This is the promise of digitization, and it cannot be met without top-notch data management skills. By 2020, PwC estimates 2.7 million job postings for data science and analytics roles in the United States alone.[6]

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5. IDC InfoBrief, sponsored by Cisco, "20 Most Significant IT Roles You Should Consider," May 2018.

6. PwC, "What's Next for the Data Science and Analytics Job Market?" January 2017.

If anything, as more and more organizations become fully digitized, the vast amounts of data will only increase, as will the need to interpret and use it.

There's even better news for IT professionals: not only is demand high and likely to be sustained over the long term, but employees report greater than average levels of satisfaction in data-related job roles. If you are going to invest in training and certifications to acquire or improve your data management skills, it's good to know that those who already have such job roles actually like what they do.

Data scientist, data engineer, analytics manager, and business intelligence are among Glassdoor's Top 50 jobs for 2018. The criteria that Glassdoor used to compile this list were the number of job openings, salary, and overall job satisfaction rating.[7]

So, which job roles are hot right now? According to Robert Half Technology,[8] data-related job roles in high demand in 2018 include the following:

· Data scientist
· Business intelligence analyst
· Database developer

IDC predicts that the need for the preceding roles will remain high through at least 2027, along with business intelligence architect/developer and database architect.[9]

The digital shift won't happen overnight. It will take place in stages that depend on a wide number of factors, including country, region, and the unique needs and priorities of each organization. That is why the demand for strong data management skills will last a long time.

Even after most organizations have gone entirely digital, the data will not stop coming. If anything, as more and more organizations become fully digitized, the vast amounts of data will only increase, as will the need to interpret and use it.

Data management skills dissected

What types of skills will you need for the wide variety of analytics and other data management jobs that are hot now and down the road?

Start with the differences between business intelligence analyst and data scientist.[10] Analysts research and extract valuable information from structured and unstructured data. They do so to explain past, present and future business performance. They also figure out the best analytical models to explain their findings to their organizations.

7. Glassdoor, "50 Best Jobs in America," January 2018.

8. Robert Half Technology, 2018 Salary Guide for Technology Professionals, October 2017.

9. IDC InfoBrief, sponsored by Cisco, "20 Most Significant IT Roles You Should Consider," May 2018.

10. American University, Business@American blog, "Comparing Analytics and Data Science," October 2015.

Analytics-enabled job roles have a broad range of titles. Apart from business intelligence analyst, the titles include business intelligence architect or engineer.

Data scientists design, develop and use algorithms through statistical programming that supports decision-making tools. They manage large amounts of data and develop visualization tools to help understand the data's meaning.

Business intelligence analysts tend to have undergraduate degrees in business, economics, or a related field. Their educational background and skills can apply across a range of industries.

Data scientists, on the other hand, usually have done graduate or post-doctoral work in data modeling/statistics, probability, or mathematics. They must also have deep, specialized knowledge about the particular industry in which they work.

Business intelligence analysts focus on structured data in programs like Excel or Access. They work with organizational stakeholders to identify data sources and build business analytics models. Data scientists tend to handle more complicated, unstructured data. They build intricate models that can possibly predict what might occur and why.

Business intelligence analysts tend to work in financial services. Other fields in which they contribute include IT, government, manufacturing, and management. Data scientists have tended to work in government, although demand for this job role is growing in financial services, manufacturing, and logistics.[11] Data scientists also work in IT and higher education, and they conduct R&D in the physical, engineering, and life sciences.

Analytics-enabled job roles have a broad range of titles. Apart from business intelligence analyst, the titles include business intelligence architect or engineer. Data engineer and database architect are other analytics-enabled job roles. The skills needed for these types of job roles are as follows:

- Interdisciplinary data analysis
- Data modeling
- Data research, visualization, and interpretation
- Defining database requirements for varying forms of structured and unstructured data

With a narrower, deeper focus in one industry or field, the data scientist job role requires these types of skills:

- Data mining, which reveals useful patterns in large data sets
- Database design and structure using tools like Hadoop, Oracle, and Teradata
- Mathematical modeling for data-derived forecasts
- Machine learning
- Programming languages: SAS, SQL, R, SPSS, Python, KNIME

11. Silicon Republic, Careers blog, "If You Want to Be a Data Scientist, You Need to Know About These 6 Trends," October 2017.

IDC found that
71 percent of
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By now, it should be clear that the analytics-enabled and the data scientist job roles have different educational and technical skills requirements, even if the two often work closely together.[12]

The right skills help you stand out

So now you know some basic differences between data analytics and data science job roles, and some of the skills that each type of job role needs. To further your career as an IT professional, you should also understand how organizations and hiring managers view certifications. They can make a big career difference for you if you decide to move into data management.

Organizations don't put off digital change or projects if they can't recruit a qualified external job candidate. They opt to grow the right skills from within their current ranks. In fact, IDC found that upskilling one or more internal staff members is the way companies most often fill their crucial need for data analytics, data science, and other digital skills.[13]

This is right where certifications count most. Businesses and government agencies make use of skills certifications from companies like Cisco to ensure that their IT staff is current with best practices and product knowledge.

There are several reasons that IT leaders and hiring managers value certifications like those from Cisco. For starters, IDC found that 71 percent of hiring managers rely on certifications to have more confidence in job candidates' skills, knowledge, and abilities.[14]

IDC also found that IT leaders and hiring managers think certifications achieve the following:

- Demonstrate applicants' qualifications
- Speed up innovation and develop new ways to support business growth
- Boost service and support to end-users and customers
- Are worth the time and money to obtain

What about certifications from a specific company, like Cisco? Turns out, Cisco certifications are among those most requested in the 1.9 million global IT-related job descriptions over the past year that IDC viewed for its study.[15]

When it comes to advancing your career, relying on experience alone—or even on great job performance plus experience—is not the ideal strategy. You must validate both, as well as learning new skills, in order to move into any type of data management job role.

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12. Analytics India Magazine, "How Is Business Intelligence Different from Data Science?" August 2017.

13. IDC InfoBrief, sponsored by Cisco, "20 Most Significant IT Roles You Should Consider," May 2018.

14. Ibid.

15. Ibid.

Lessons explore Hadoop, streaming analytics, performance tuning, and UCS Director Express for Big Data.

Cisco data management training and certifications

Cisco offers targeted analytics training to help you get there. The first course is the Cisco Big Data Analytics, Architecture and Management (ANDMB) course. Before attending this course, you should have the following basic knowledge:

- Cisco UCS
- Modern data center technologies, including data center virtualization
- Scripting concepts

This four-day course teaches participants to choose and design data centering around Cisco UCS Integrated Infrastructure for Big Data and Analytics. The course covers big data basics and setups. Lessons explore Hadoop, streaming analytics, performance tuning, and UCS Director Express for Big Data. Upon completing this course, you will be able to meet the following goals:

- Provide a high-level overview of big data basics
- Describe big data storage, compute, and data networking setup
- List Hadoop core components
- Explain the basics of streaming analytics
- Describe the design and sizing of the compute, network, and storage parts of Cisco UCS Integrated Infrastructure for Big Data and Analytics, and much more

The next step is the Cisco Advanced Big Data Analytics, Architecture, Management and Applications (ANDMA) course. Before taking this five-day training, you should have attended the Cisco ANDMB course and be familiar with Cisco UCS and big data basics.

This second course provides advanced hands-on training in many of the skills listed previously. These include scaling of clusters to thousands of nodes and management, lambda setup for streaming analytics, data lifecycle management with Hadoop distributed file system (HDFS) tiered storage, different approaches for multitenant Hadoop cluster deployments with OpenStack, UCS Director Express, or MapR volumes, and more.

The course covers use cases, focusing on Hadoop deployments. It details UCS Director Express end-to-end big data automation for big data, as well as best practices, disaster recovery, and security. After finishing this course, you will be able to accomplish the following:

- Ramp up to thousands of nodes
- Use Splunk for business analytics
- Install and configure Red Hat and Splunk
- Describe edge analytics from sources like social media or the Internet of Things (IoT)
- Describe SQL on Hadoop and much more

According to LinkedIn, the job roles of data scientist and big data engineer are among those with top growth potential through 2026.

Cisco gets it. We understand that you have to fit all training and exams into a work day that is already packed. Be sure to let your employer know that Cisco offers flexible formats to help fit training into your work schedule.

If you're looking for ways to weave analytics skills into your existing networking acumen, we can help. Our CCNA and CCIE Routing and Switching programs also contain many advanced skills for analytics in today's programmable network environment. Both certifications teach candidates how to use Cisco DNA Analytics and Assurance, which lets you get the full intelligence capabilities out of today's modern programmable network. With this training, network engineers can use Cisco Digital Network Architecture (DNA) to collect data and put insights into action.

Conclusion

Do you feel you have the aptitude and interest for a job in analytics or data science? If so, a world of opportunity awaits. According to LinkedIn, the job roles of data scientist and big data engineer are among those with top growth potential through 2026.[16] The digital era is the age of data management jobs.

However, you probably are not ready yet to move to one of these plum job roles. Instead, you need to show your current or future employer that you have the right knowledge and skills. Cisco data management training and certifications can do that for you.

The sooner you get started on gaining Cisco skills in data management, the sooner your career can take off. Check out the Cisco Learning Network for more information on how to use these certifications to shift your career into warp drive.

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16. LinkedIn, 2017 U.S. Emerging Jobs Report, December 2017.