



What is a data analyst? A key role for data-driven business decisions

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Data analysts help organizations understand the current state of the business by interpreting a wide range of data.

What is a data analyst?

Data analysts work with data to help their organizations make better business decisions. Using techniques from a range of disciplines, including computer programming, mathematics, and statistics, data analysts draw conclusions from data to describe, predict, and improve business performance. They form the core of any analytics team and tend to be generalists versed in the methods of mathematical and statistical analysis.

The rising demand for data analysts

The data analyst role is in high demand, as organizations are growing their analytics capabilities at a rapid clip. In August, IDC [forecast](#) big data and analytics software revenue would hit \$66.8 billion this year and would see 8.7% CAGR through 2024.

[Learn the secrets of highly successful data analytics teams. | Beware the [12 myths of data analytics](#) and the [sure-fire ways organizations fail at data analytics](#). | Get the latest on data analytics by signing up for CIO newsletters.]

While organizations have spent the past few years focused on [data science](#), machine learning, and artificial intelligence (AI), the pendulum may be swinging back to analytics, says Caroline Carruthers, director at consulting firm Carruthers and Jackson, former chief data officer of Network Rail, and co-author of *The Chief Data Officer's Playbook* and *Data-Driven Business Transformation: How to Disrupt, Innovate and Stay Ahead of the Competition*.

"We almost took our eye off the analytics ball because a lot of people got excited about machine learning and AI and suddenly went, 'Ooh, we have to do all these wonderfully whizzy-bang things.' We forgot that actually there is a tremendous amount of value organizations get from analytics," Carruthers says. "We're starting to move back to how can we really drive analytics throughout our organizations."

Data analyst vs. data scientist

While data analysts and data scientists may be commingled on analytics teams, their roles differ considerably.

Data analysts seek to describe the current state of reality for their organizations by translating data into information accessible to the business. They collect, analyze, and report on data to meet business needs. The role includes identifying new sources of data and methods to improve data collection, analysis, and reporting. Data scientists, on the other hand, are often engaged in long-term research and prediction, while data analysts seek to support business leaders in making tactical decisions through reporting and ad hoc queries.

Hillary Green-Lerman, lead data scientist at Looker, says the difference between data analysts and data scientists comes down to timescale. A data analyst might help an organization better understand how its customers use its product in the present moment — what works and doesn't work for them. A data scientist might use the insights generated from that work to help design a new product that anticipates future customer needs.

Data analyst role

Data analysts mostly work with an organization's structured data. They create reports, dashboards, and other visualizations on data associated with customers, business processes, market economics, and more to provide insights to senior management and business leaders in support of decision-making efforts. Data analysts work with all manner of data, including inventories, logistics and transportation costs, market research, profit margins, sales figures, and so on. They use this data to help the business estimate market share, price products, time sales, optimize transportation costs, and the like.

The pandemic increased pressure to deliver large-scale transformations and has shifted the tech skills gap from shortage to drought. Fortunately, there are innovative ways of building the required...

Data analyst responsibilities

Data analysts seek to understand the questions the business needs to answer and determine whether those questions can be answered by data. They must understand the technical issues associated with collecting data, analyzing data, and reporting. They must be able to recognize trends and patterns.

According to Workable, key data analyst responsibilities include:

- Analyzing data using statistical techniques and providing reports
- Developing and implementing databases and data collection systems
- Acquiring data from primary and secondary sources and maintain data systems
- Identifying, analyzing, and interpreting trends or patterns in complex data sets
- Filtering and cleaning data
- Working with management to prioritize business and information needs
- Locating and defining new process improvement opportunities

Data analyst salary

According to data from Robert Half's 2021 Technology and IT Salary Guide, the average salary for data analysts/report writers in the U.S., based on experience, breaks down as follows:

- 25th percentile: \$86,250
- 50th percentile: \$103,250
- 75th percentile: \$122,250
- 95th percentile: \$146,750

Employment search engine Indeed, on the other hand, puts the average data analyst salary in the U.S. at \$75,685 per year. Indeed notes that data analysts can typically earn the most in non-traditional tech areas.

Top 5 cities for data analyst salaries

Rank	Location	Average salary
1	Phoenix	\$94,120
2	Charlotte, N.C.	\$88,893

Rank	Location	Average salary
3	Washington	\$86,503
4	New York	\$74,347
5	Chicago	\$74,295

Data analyst skills

According to an analysis of job listing data from Indeed, SimplyHired, and Monster, Towards Data Science says the following are the most in-demand tech skills for data analysts:

Getting consistency in multi-cloud

Containers, service mesh networks and CASBs can help organisations deliver greater cloud consistency.

1. SQL
2. Microsoft Excel
3. Tableau
4. Python
5. R
6. SAS
7. Microsoft PowerPoint
8. Microsoft SQL Server
9. Oracle
10. Microsoft Power BI

In addition to analytical and mathematical skills, and facility with languages such as SQL, communication skills are essential. Data analysts frequently need to engage with the business to understand business objectives and gather requirements.

Landing a data analyst job

Green-Lerman says an eclectic mix of skills and experience is key to getting noticed when applying for data analyst positions, though facility with SQL and statistical analysis is a requirement.

"The things that I generally am looking for on my team are good communicators and writers. Everything on your resume should look professional and be spelled correctly because a big thing that analysts do is write reports. I usually want folks who have some experience beyond a bootcamp or a Master's program. I want them to have some practical experience, even if it's an internship," Green-Lerman says.

In addition, she looks for resumes that describe working on at least one analytical project in detail.

"I love it if there are actually numbers in their resume because that means they're already thinking in terms of demonstrating value and KPIs. But not everyone's job lends itself to that, so that's not a hard requirement," she says.

Data analyst training

While there is no set education requirement for data analysts, most data analysts have at least a BS in mathematics, economics, computer science, information management, or statistics. Coding bootcamps can help, and internships can provide experience that many organizations are looking for.

Data analyst certifications

Data analytics skills are in high demand and are relatively rare. Individuals with the right mix of experience and skills can demand high salaries. The right big data certifications and business intelligence certifications can help.

Some popular certifications include the following:

- Associate Certified Analytics Professional (aCAP)
- Certified Analytics Professional
- Cloudera Certified Associate (CCA) Data Analyst
- Microsoft Certified Data Analyst Associate
- SAS Certified Advanced Analytics Professional Using SAS 9
- Tableau Desktop Certified Professional
- Tableau Server Certified Professional

Other data analytics jobs

Data analyst is just one job title in the expanding field of analytics. Here are some of the most popular job titles and the average salary for each position, according to data from PayScale:

- Analytics manager: \$96,396
- Business analyst: \$61,091
- Business intelligence analyst: \$69,087
- Data architect: \$119,242
- Data engineer: \$92,291
- Data manager: \$63,528
- Data scientist: \$96,303
- Database administrator (DBA): \$74,041
- Database developer: \$75,578
- Research analyst: \$56,267
- Research scientist: \$80,802
- Statistician: \$74,236