

DATA SCIENTIST

WHO ARE THEY?^{1,2}

Data scientists are professionals who thrive when given the opportunity to look at information and complex sets of numbers to decipher the story the information is telling. They are creative, curious and analytical, “part mathematician, part computer scientist and part trend-setter.” They enjoy statistics and might get excited by things like their favorite baseball player’s earned run average or grappling with vast data sets. Data scientists are happy to work in a role and on projects that are evidence-based, driven by the most up-to-date information available. They break down problem statements into the root causes and build complex predictive models to tailor solutions based on their findings. Data scientists work across industries and are critically important to industries like mining that have adapted to the fast pace of the 21st century by relying heavily on data to drive decision-making.

WHAT DO THEY DO?^{1,2}

Data scientists wade through large sets of data (facts and statistics), find patterns and test hypotheses. They develop visualizations of the data (think: charts and tables) that help their team understand what they’re seeing and why it’s important. They use computer science skills, like machine-learning methods, deep learning and advanced optimization techniques, to build complex models to find and test these patterns, as well as to solve problems that become clear from their analyses of the data. They use programming languages like SAS, R, SQL and Python, and in many cases use cloud technologies that house a company’s “big data” to deliver innovative analytics solutions at scale. Beyond that, they must also use their knowledge of the industry they’re working in, their common sense and contextual information to determine what story the data is telling them. The lessons they provide often inform and help optimize a company’s strategies, and they may have large impacts on company revenue.

JOB OUTLOOK^{3,4}

Computer and information technology occupations, like data science, are growing rapidly—much faster than the national average for all occupations. The annual median income for these jobs is also higher than the median for all occupations. Because companies all over the country are collecting unprecedented amounts of data about their business, their customers, their competitors and more, there is likely going to be an increased need for data scientists.

SALARY RANGE⁵

**\$92,000—
\$149,000**

EDUCATION/TRAINING

- Bachelor’s degree in a related STEM field
- Master’s degree or doctorate in a related STEM field
- Internships and/or prior work experience
- Experience with coding languages such as SAS, SQL, R and Python preferred

¹ “What is a Data Scientist?” SAS. https://www.sas.com/en_us/insights/analytics/what-is-a-data-scientist.html. Accessed 4.14.2020.

² “Data Scientist I.” Freeport-McMoRan. <https://jobs.fcx.com/job/Phoenix-Data-Scientist-I-AZ-85004-2121/608968000/>. Accessed 4.14.2020.

³ “Occupational Outlook Handbook.” Bureau of Labor Statistics. <https://www.bls.gov/ooh/computer-and-information-technology/computer-and-information-research-scientists.htm>. Accessed 4.14.2020.

⁴ “Occupational Outlook Handbook.” Bureau of Labor Statistics. <https://www.bls.gov/ooh/computer-and-information-technology/computer-and-information-research-scientists.htm>. Accessed 4.14.2020.

⁵ “Occupational Employment Statistics.” Bureau of Labor Statistics. <https://www.bls.gov/oes/2018/may/oes151111.htm>.

HOW DO I BECOME ONE?^{1,3}

A data scientist will need a bachelor's degree, and many employers will be looking for an advanced degree like a master's degree or a Ph.D. for this role. A degree in data science, analytics, computer science or computer engineering would be beneficial in this position. To prepare for this career, students should concentrate on building analytical and critical-thinking skills in courses like computer science, physics, algebra, calculus and statistics. Data scientists also will need to develop excellent communication skills. Having experience in data analytics is typically a prerequisite to becoming a data scientist