

Emerging careers

Data Science

Love it or fear it, big data is everywhere, and it's about more than just serving up unnervingly targeted ads. In addition to shaping the retail industry, big data is a cornerstone of healthcare, banking, agriculture, government, transportation, and energy. It's estimated that humans produce 2.5 quintillion bytes of data daily.⁽¹⁾ That figure is only going up, which has led to the growing demand for data scientists.

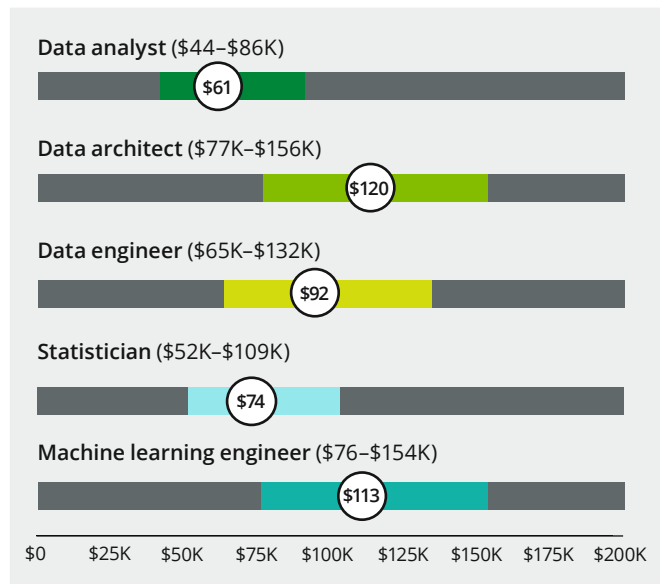
As with any young industry, the job description for a data scientist can be vague and may vary greatly by industry or company. Generally, data scientists have mixed expertise in computer science, mathematics, and trend spotting.⁽²⁾ They're needed to create algorithms, identify trends, organize data, produce insights that drive business decisions, and design machines that can automate output based on data.

From 2016 to 2019, "data scientist" held the top spot on Glassdoor's list of "50 Best Jobs in America". For the past two years, the job has ranked second. This small drop may speak to the temporary effects of COVID-19 or may simply reflect the need

for front-end developers, but either way, data science remains in high demand with continued projected growth.⁽³⁾

Specialties⁽⁴⁾

Key roles and salary ranges



Skills of the field

Technical skills

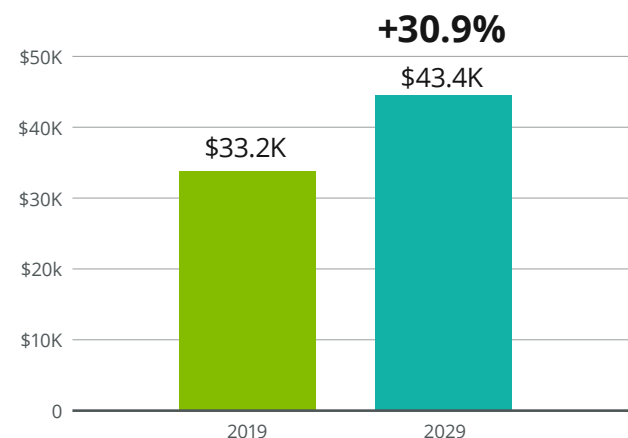
- Programming (Python, R, and SQL)
- Cloud architecture
- Performance marketing
- Mathematics
- Probability and statistics

Soft skills⁽⁵⁾

- Critical thinking
- Oral/written expression
- Complex problem solving
- Intellectual curiosity
- Systems analysis

Job market growth

Data scientists and mathematical science employment, 2019 and projected 2029⁽⁶⁾



Study options available

Compared to other emerging careers, data science has fairly rigorous academic requirements for entry. A competitive field means employers can make higher demands for education, and the array of technical skills required will demand intensive study, whether formal or informal.

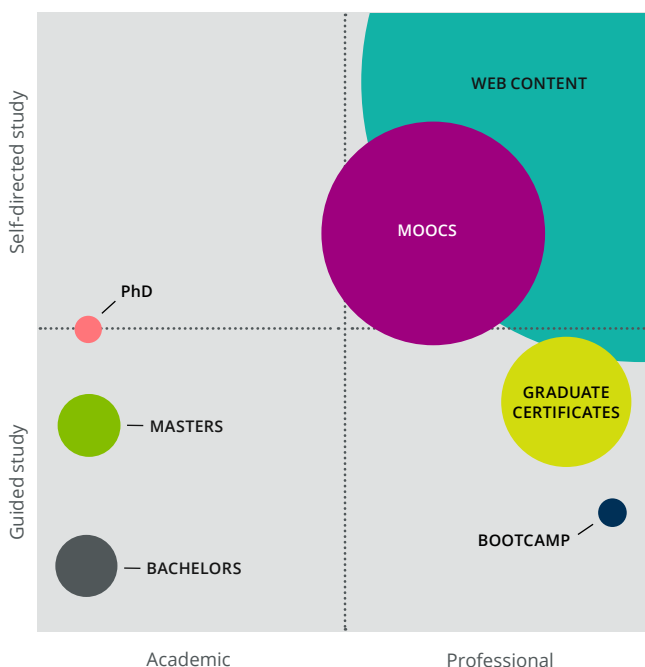
A good starting point is a bachelor's degree in computer science, mathematics, IT, or statistics. Increasingly, as shown in the chart to the right, degrees specific to data science are available as well. This also goes for master's degrees, which are held by 73% of professionals in the field. As many as 38% have a PhD.⁽⁷⁾

However, those with a more mixed background still have a chance. In fact, since the field is new, many of its leaders didn't have today's focused degree options. Applicants may stand out if they can demonstrate that they've supplemented coursework with real-world projects, if they have additional expertise in the job's broader industry (i.e., healthcare, marketing, etc.), or if they can show that they've targeted their studies to fit the demands of the role they're looking to take on.

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Data science education options



Insider advice

"Instead of fixating on a single technique or programming language, ask yourself, what is the best set of tools or techniques that will help you to solve your problem? Focus on problem solving, and the tools will come naturally."

— Robert Chang, Data @Airbnb⁽⁸⁾

Sources

¹ "How Much Data Is Created Every Day in 2020?", Jacquelyn Bulao

² "What is a Data Scientist?", sas.com

³ "Why Data Science Is Still a Top Job", Alex Woodie

⁴ Payscale.com

⁵ "5 Most In-Demand Soft Skills to Thrive in Data Science", Smriti Srivastava

⁶ "Employment by detailed occupation", U.S. Bureau of Labor Statistics

⁷ "How to Become a Data Scientist", geteducated.com

⁸ "Advice For New and Junior Data Scientists: What I Would Have Told Myself a Few Years Ago", Robert Chang