

Data Science Jobs Report 2020

USA



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THE REPORT

The market for Data Science has been growing extensively over the recent years. As a result, the position of “data scientist” has established itself as an attractive option for a career path and the competition for job opportunities is steadily increasing. To help you stay at the forefront, we have conducted a study examining the state of job opportunities in data science.



The data for this research come from 1,170 job offers, published across all major US states. From these, we have extracted information about the company offering the position, the required educational credentials and sought-after work experience, as well as the desired skills and techniques a successful data science candidate is expected to have. We should note that all data were extracted automatically and thus, some items may have been incorrectly labelled, assigned or overlooked.

The following report analyses all intriguing findings in depth. Let's get started.



KEY FINDINGS

57%

Of job offers come from big companies
(10 000+ employees)

Top 3
degrees

The top three desired **academic** degrees are
Data Science, Statistics, and Mathematics

Bachelors

47% of job offers require at least a Bachelor's
degree, with 31% of these requiring a Master's

4.2
years

On average, **employers require** 4.2 years of previous
experience as a data scientist

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The top 3 programming languages are **Python, R, and SQL**

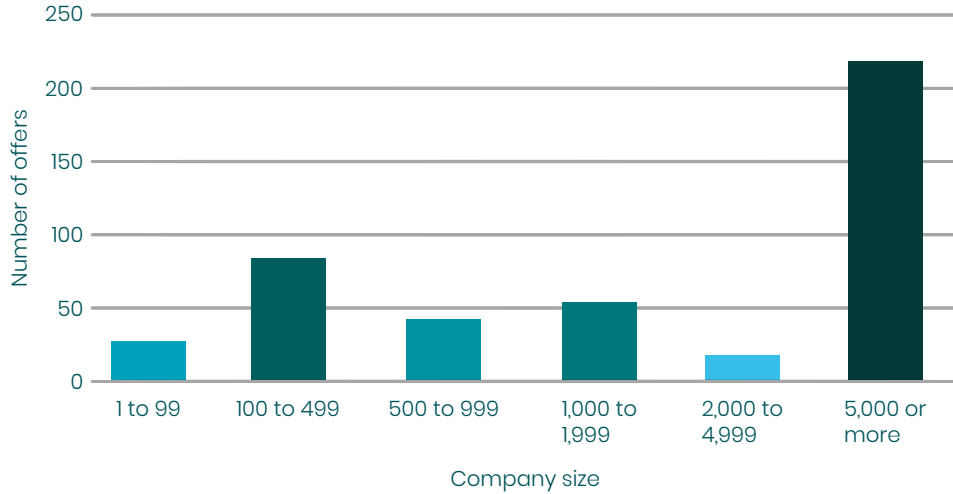
Skills

Deep Learning, Clustering, and Natural Language Processing are
the most often mentioned skill requirements

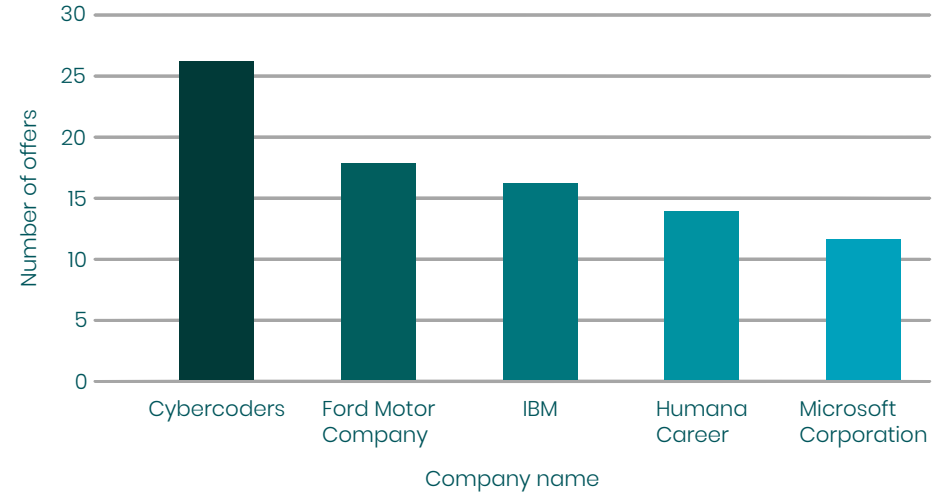


COMPANY SIZE & LOCATION

Number of offers in relation to company size



Top 5 employers (at time of research)

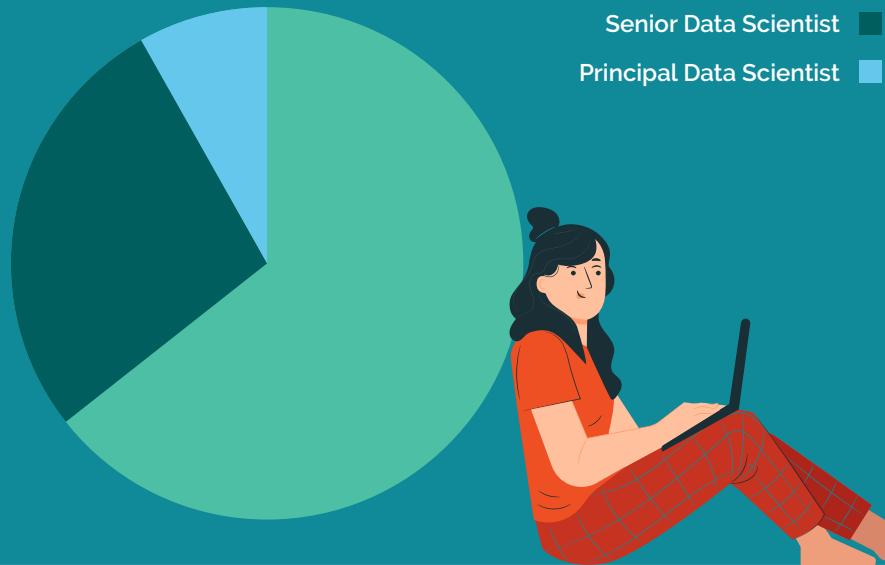


From the 1,170 job offers we examined, 823 were posted by companies that did not have a profile on the website. This prevents us from determining the size of these organizations. That said, the chart above reflects only the data we have from businesses registered on the website. It's interesting to observe that, in this cohort, most of the job offers come from very big companies with more than 10,000 employees. Now, although this raises the consideration that this data might be skewed to better represent the needs of big corporations, it is important to highlight that the remaining 823 job postings in our sample come from non-registered companies. Not having determined the size of these companies, it is plausible to imagine that they are a healthy mix of small-to-medium businesses. This becomes especially likely, considering the assumption that larger companies tend to register on more employment websites, while their smaller counterparts do not engage as much.

Not surprisingly, the companies with most offers are big enterprises such as Ford, Microsoft and IBM



Top 3 Job Titles

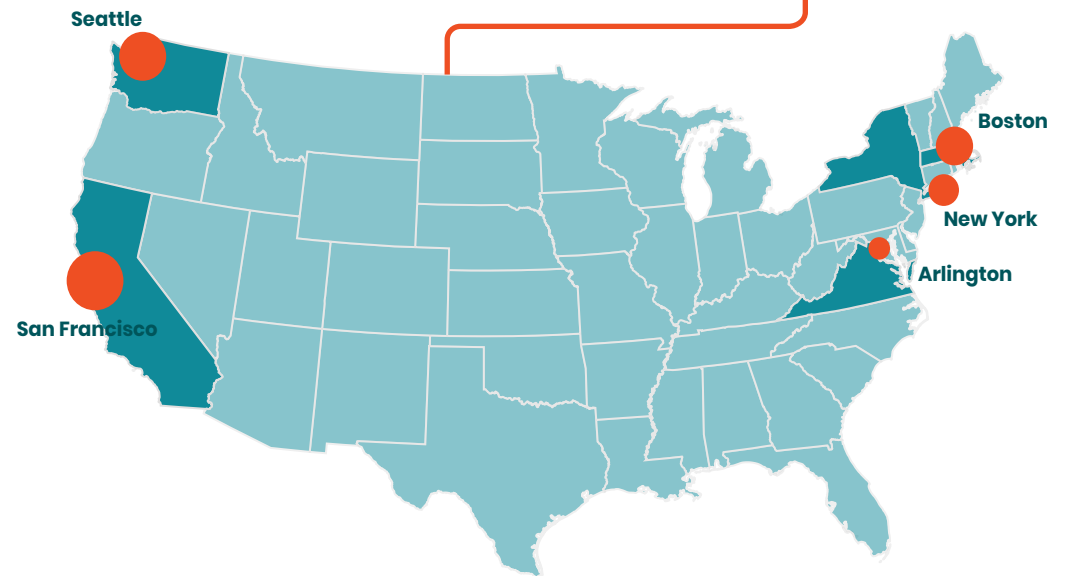
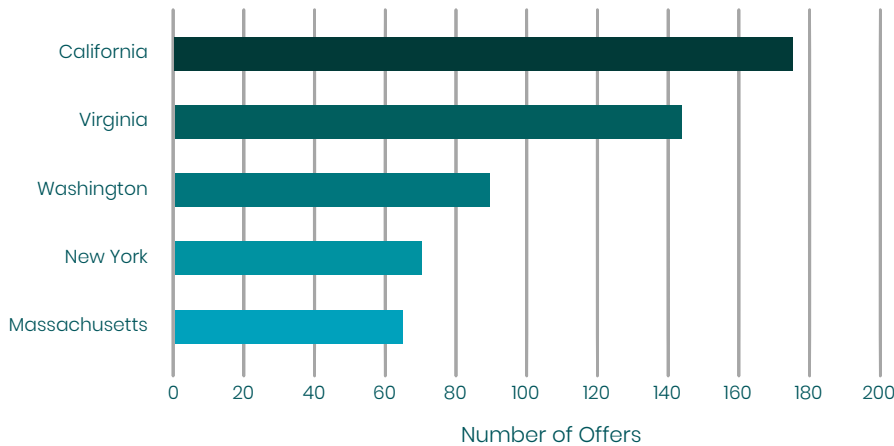


Data Scientist
Senior Data Scientist
Principal Data Scientist

Looking at the seniority level of the open data scientist positions, we see that although there is reasonable demand for Senior Data Scientists, junior and mid-level Data Scientists are what companies are looking for the most. This is not unexpected. After all, the field is rapidly growing and the demand for more data scientists is high.

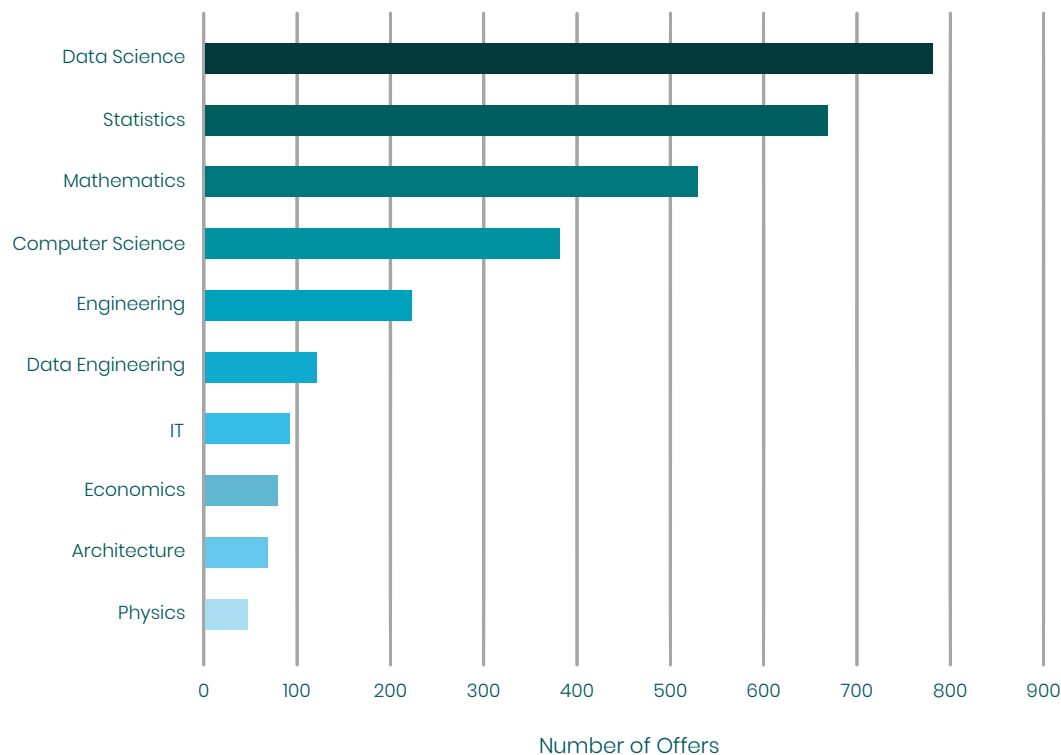
Geographically, the job postings in our study originated from 38 states across the US, with California, Washington, and certain East Coast states constituting the top 5 states with highest number of offers. In terms of cities, it doesn't come as a surprise that San Francisco and Seattle rank 1st and 2nd respectively. The former is home to the Silicon Valley, while the latter is a major tech hub.

Top 5 States by number of offers



EDUCATION & EXPERIENCE

Most sought-after degrees



In terms of preferred fields of study, the top 3 most sought-after degrees are Data Science, Statistics, and Mathematics.

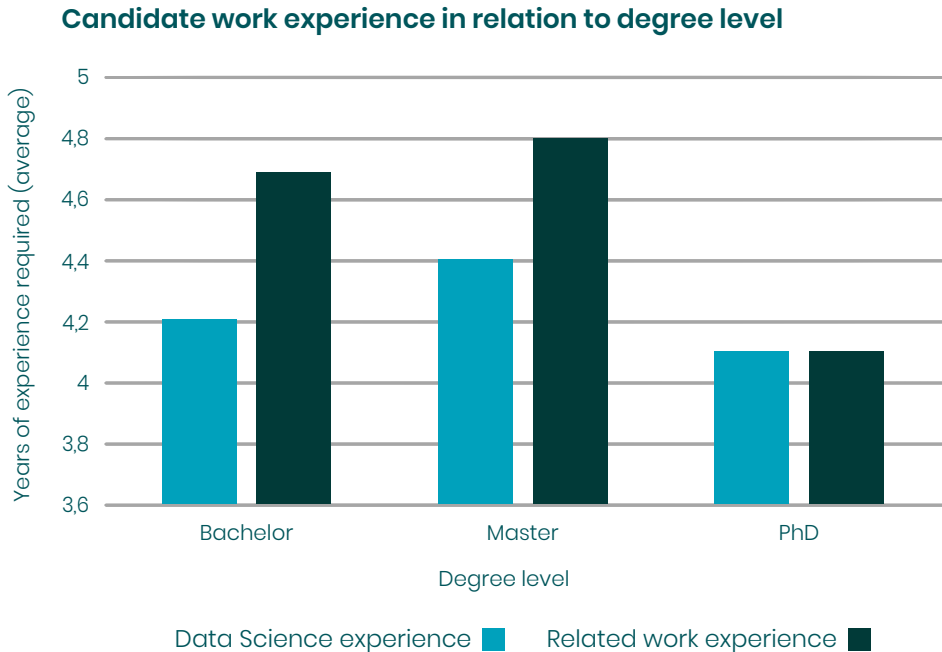
Regarding the level of academic success, most job offers expect the ideal candidate to have either a Bachelor's degree (47% of the cohort) or a Master's degree (31%). A very small number of the companies and positions demand PhD level of education (4%). These observations do not deviate much from a complementary study we did on the skills, experience, and education of professionals currently working as Data Scientists. That said, 18% of the sampled job ads did not contain an academic degree requirement, but we expect them to follow the same pattern we observe above.

Candidate level of education in relation to company size

Degree	small (1-100)	medium (100-1,000)	big (1,000-10,000)	huge (10,000+)	No size data
Bachelor	3	33	18	78	402
Master	11	9	21	71	254
PhD	0	3	3	7	37

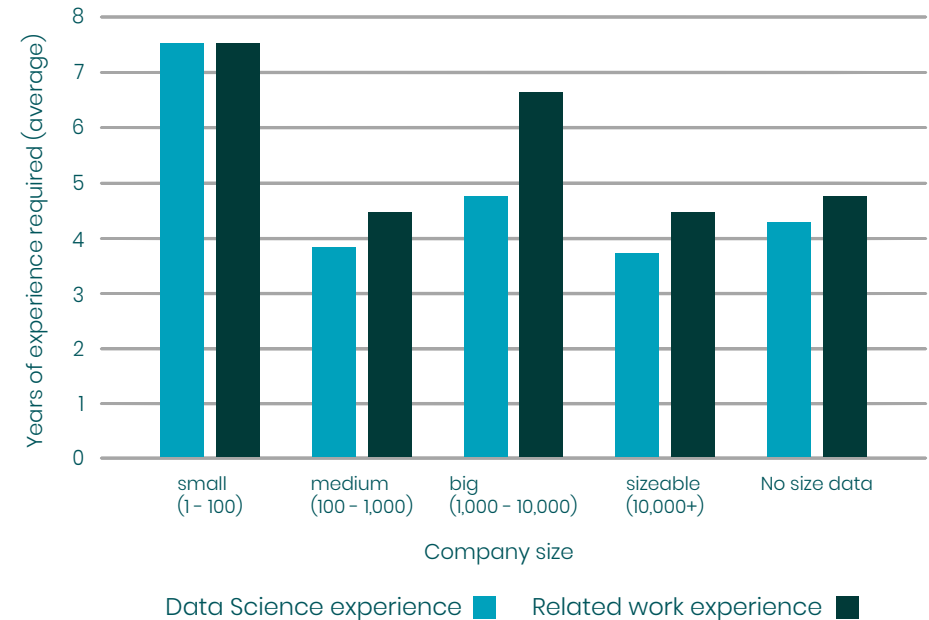
An interesting observation we can make is that, for the smallest companies in our cohort, the ideal employee is one with a second-tier academic degree, as the majority of job offers require a Master's degree. In contrast, the largest companies in our sample have somewhat more balanced requirements, with an approximately equal number of positions asking for either a Bachelor's or a Master's degree.

On average, companies require at least 4.2 years of previous experience as a data scientist and 5.2 years of experience in related fields.



There is no real significant difference between the required work experience for different degree levels. That said, we must mention 2 important factors that might be at play here. First, the sample size is not large, especially for job postings which call for PhD holders. Second, the data we're analysing here only applies to candidates who meet just the minimum requirements for the position. For instance, if you are applying for a job that requires at least a Master's degree, on average you will be expected to have around 4.8 years of experience. If, however, you have a Master's degree, but the offer asks for "at least a Bachelor's degree", then it is highly likely that you would be required to possess less previous work experience than the 4.7 years stated.

Candidate work experience in relation to company size



For this analysis, we have grouped the companies into 5 categories: small (1 – 100 employees), medium (100 – 1,000 employees), big (1,000 – 10,000 employees), sizeable (10,000+ employees) and those with No size data. However, please note that the sample size for companies in the 'small' category is smaller than the rest (17 entries).

Our data shows that the smallest companies have the highest requirements for work experience. This is a finding which may be explained by the companies' limited number of employees. If these companies are looking to expand and establish themselves, it is in their best interest to invest in skilled professionals. Sizeable companies, in contrast, may not necessarily need an experienced individual but someone they can train to become a future asset for the company. In other words, it's reasonable to conclude that bigger companies invest in future potential.

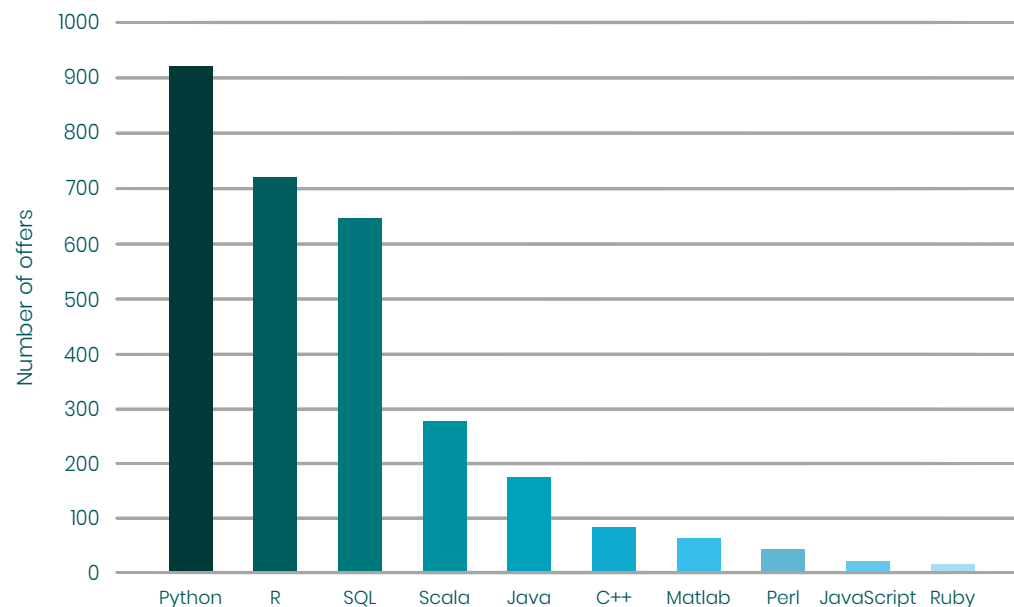
SKILLS

Here are the most quoted programming languages, according to the 1,170 job postings we analysed.

Unsurprisingly, Python is the most popular one, followed by R and SQL. The other languages with a significant number of mentions are Scala, Java and C++.



Top 10 Programming languages



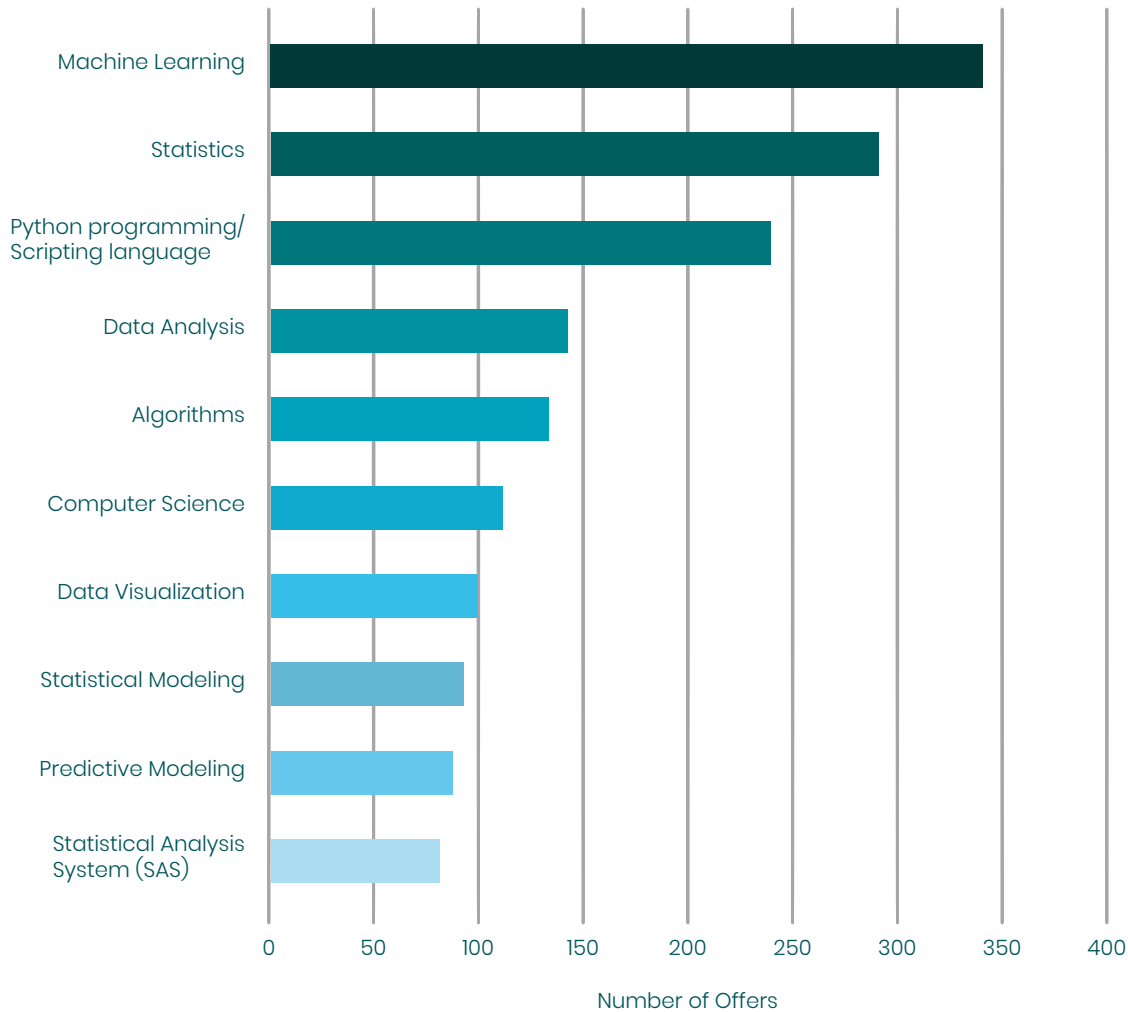
Become a Data Scientist in 2020

Find out the full set of skills, education and experience you need to become a data scientist in 2020.

[Learn More](#)



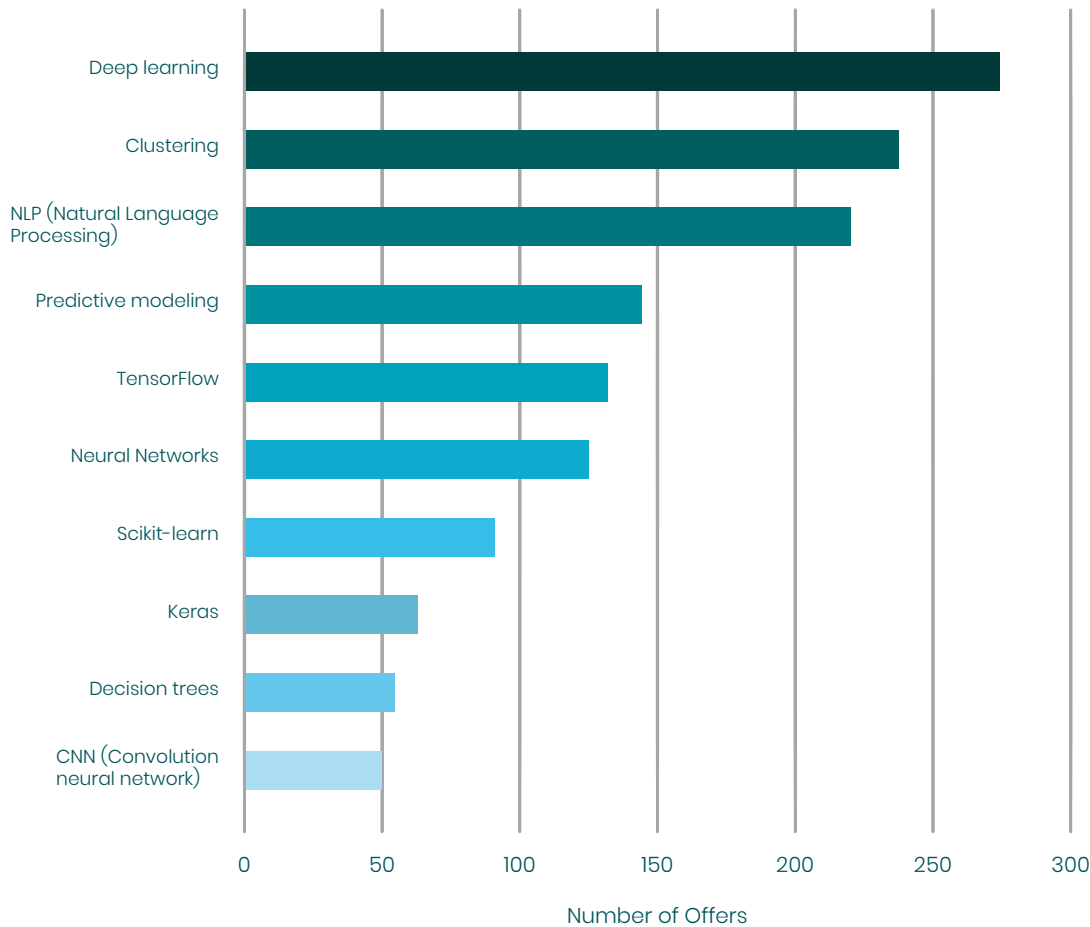
Top 10 Most Cited Skills and Machine Learning Techniques



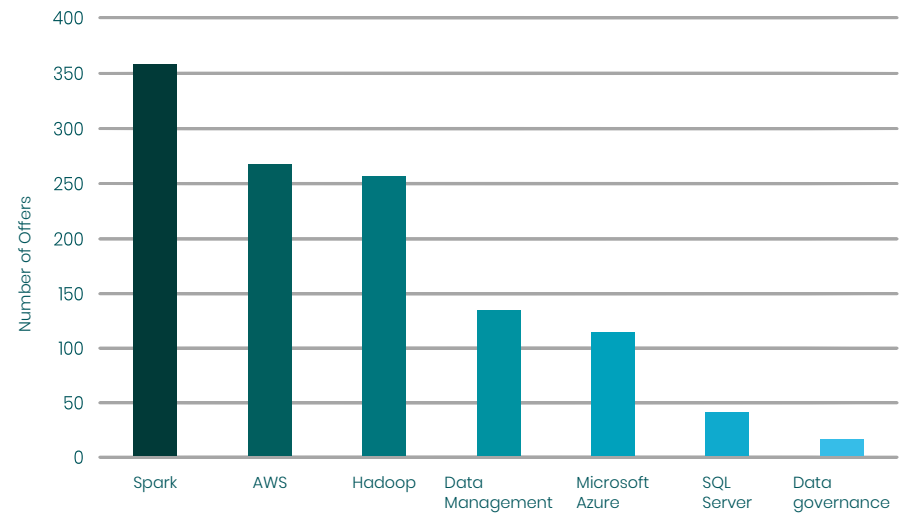
We also performed keyword analysis on the job offers descriptions to extract the most cited skills and machine learning techniques. As expected, the most prominent competencies are **Machine Learning (ML)**, **Statistics**, and **Python programming**.



Top 10 Machine learning (ML) techniques



Top 7 most cited Database / Cloud skills



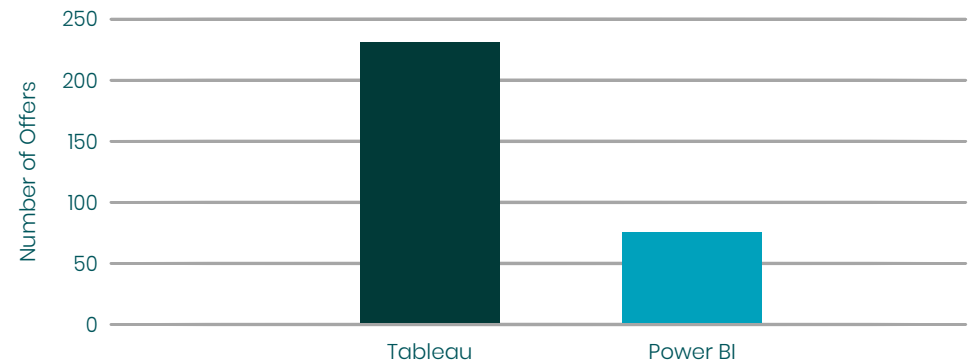
Looking closer into Machine Learning, the most in-demand techniques within that domain are **Deep Learning, Clustering and Natural Language Processing (NLP)**. In terms of Database/Cloud skills, our data shows that the most sought-after tools are **Spark, AWS, and Hadoop**.



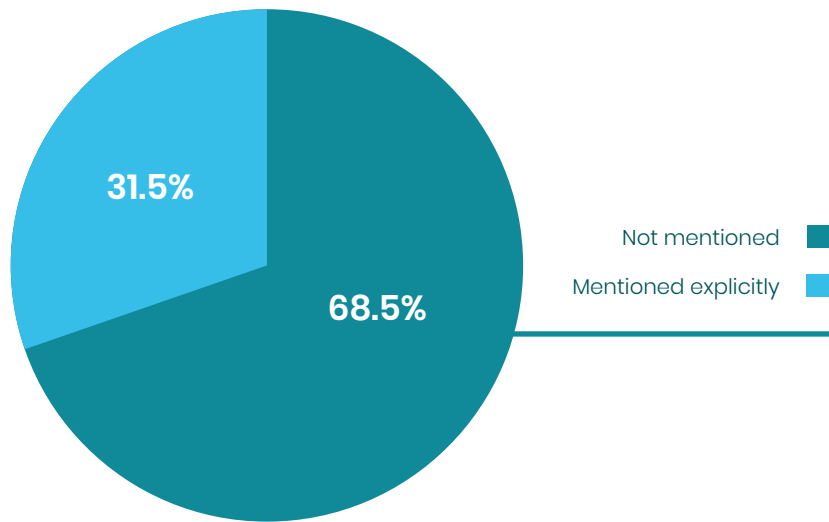
DATA VISUALIZATION & COMMUNICATION

As to data visualization, the most distinguished tools are Tableau and Power Bi: Tableau being mentioned in 228 job offers, whereas Power Bi in 79.

Data visualization tools



Importance of communication



Finally, we established whether there was any emphasis on communication skills. That was true in 31,5% of the offers, while in the rest 68,5% there was no mention of communication skills or teamwork at all.



CONCLUDING THOUGHTS

That was our compelling glimpse into the data scientist position requirements, based on **1,170** job offers. We hope some of this information has been useful and advantageous for you in your path to landing your dream data scientist job.

