

## What is data science?

Data scientists extract insights from data. They use predictive analytics, data mining, text mining, pattern recognition, data modeling, machine learning, and statistical methods to uncover the meaning hidden in vast data sets.

SOURCE:  
[https://www.ibm.com/us-en/employment/newcollar/ccsa/data\\_scientist.html](https://www.ibm.com/us-en/employment/newcollar/ccsa/data_scientist.html)

## What math skills will I need?

- + Statistics
- + Algebra and geometry
- + Linear algebra
- + Calculus
- + Discrete mathematics



SOURCE:  
<https://www.ibm.com/downloads/cas/3RL3VXGA>

## How will I apply my skills?

- + Data science methodologies
- + Data access, visualization, and preparation
- + Model building to explain relationships and provide predictions
- + Communicating insights
- + Machine learning
- + Programming languages such as R and Python
- + Apache Hadoop

SOURCE:  
[https://www.ibm.com/us-en/employment/newcollar/ccsa/data\\_scientist.html](https://www.ibm.com/us-en/employment/newcollar/ccsa/data_scientist.html) and  
<https://www.ibm.com/downloads/cas/3RL3VXGA>

## What do data scientists do?

- + Map the spread of disease
- + Study autonomous transportation
- + Support robotics development
- + Analyze baseball statistics
- + Counsel families on genetics
- + Manage the cyber city
- + Analyze investments



SOURCE:  
<https://blog.coursera.org/ds-academy-7-seriously-cool-jobs-in-data-science/>

## How many jobs are there?

In 2015:	By 2020:
2,350,000	3,640,000

SOURCE:  
<https://www.ibm.com/downloads/cas/3RL3VXGA>

## What will make me a great data scientist?

Critical thinking

Digging for facts and relationships

Communication  
Learning on the fly

SOURCE:  
<https://hbr.org/2018/08/what-data-scientists-really-do-according-to-35-data-scientists>

## What can I earn?

Entry-level median:  
**US\$95,000**

Mid-career:  
**US\$85,000 to US\$170,000**



SOURCE:  
[https://www.burtchworks.com/wp-content/uploads/2018/05/Burtch-Works-Study\\_DS-2018.pdf](https://www.burtchworks.com/wp-content/uploads/2018/05/Burtch-Works-Study_DS-2018.pdf) and  
[datajobs.com](http://datajobs.com)

## What are the top industries?

- + Finance and insurance
- + Professional, scientific, and technical services
- + Information Management of companies and enterprises
- + Manufacturing
- + Utilities



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