# Data Science Jobs

Data scientists solve problems. They possess the technical savvy to unravel complex queries and the creativity to know how to get there. Often seen as part mathematician, part computer scientist – and all trailblazer – data scientists work to gain insights, and ultimately find purpose in petabytes worth of unorganized, scattered and often disparate data.

Data scientists possess a deep understanding of the organizations and industries they support and know which questions to ask; questions that involve looking into the invisible relationship between disparate data sets. In many cases, these are questions most wouldn’t even think to ask or wouldn’t believe were possible to answer. However, the insights the answers uncover have been known to be worth billions of dollars in savings and new revenue streams.

The value of data scientists to a business or public sector organization lie with their ability to understand what is important, how their organization can benefit, and how to best communicate their findings to decision makers within the organization.

Data scientists are valuable members of the IT team, for a multitude of reasons:

* Data scientists serve as trusted advisors and strategic partners, ensuring that their organization maximizes their analytics capabilities.
* Data scientists communicate and demonstrate the value of analytics to decision makers within an organization, thereby facilitating the decision-making process.
* Data scientists address key business challenges by extracting insight from data and driving action.
* Data scientists strive to constantly improve the value of an organization’s analytics system by questioning existing processes and developing new methods and analytical algorithms.
* Data scientists understand how the implementation of new strategies, processes and behavioral changes based on data science can affect an organization’s bottom line.

A data scientist’s typical job duties include:

* Developing predictive systems and creating efficient algorithms to improve data quality
* Identifying, evaluating, designing, and implementing statistical analyses of gathered data to create analytic metrics and tools
* Designing, building, and deploying data analysis systems for large data sets
* Creating algorithms to extract information from large data sets
* Establishing efficient, automated processes for model development, validation, implementation, and large-scale data analysis
* Developing metrics and prototypes used to drive business decisions
* Identifying emergent trends and opportunities for future client growth and development

Their work includes employing a number processes, including:

* Data visualization: Presenting data in a visual format (picture, graphic format) so it can be easily analyzed
* Machine learning: Mathematical algorithms and automation (includes deep learning, which uses data to model complex abstractions)
* Pattern recognition: Technologies that recognize patterns in data (often used with—or as an alternative to—machine learning)
* Data preparation: Converting raw data into another format so it can be easily consumed
* Text analytics: Examining unstructured data to glean key business insights

Just a few of the proficiencies expected of data scientists include:

* Statistics, machine learning
* Coding languages (R, Python, SAS, etc.)
* Databases (Postgres, MySQL, etc.)
* Big data storage tools (Hadoop, Greenplum, MapReduce, etc.)

Data scientists possess the unique ability to analyze massive data sets generated by web logs, sensor systems, and transactional data as to glean insights otherwise overlooked in the mess of near-endless amounts of scattered data.

They are nearly twice as likely to use big data storage tools as other data professionals, and they frequently work in teams with statisticians, programmers, IT administrators, and other data scientists, all of whom combine efforts to gather, organize, and put big data into action.

Data scientist job descriptions often vary according to the employer’s needs, including their chosen software technologies and statistical analysis tools. However, a typical job description for a data scientist likely outlines the following requirements:

* An advanced degree (Masters or PhD) in a relevant field:
  + Computer science
  + Data science
  + Statistics
  + Applied Math
  + Physics
* A strong background in statistical concepts and calculations, infrastructure design, cloud computing, and data warehousing
* Proficiency with statistical analysis tools to include:
  + R
  + SAS
  + SPSS
* Proficiency with software development technologies to include:
  + Python
  + C++
  + Java
* Experience with big data tools to include:
  + Hadoop
  + Cassandra
  + Storm
* Excellent critical thinking skills
* Excellent verbal and written communication skills
* Excellent leadership skills
* Ability to:
  + Work in a fast-paced environment
  + Promptly recognize emerging problems and identify potential solutions
  + Deliver high-quality results on time