



# Internship and Career Services Industry Guide: Data Science/Data Analytics

## OVERVIEW

How does LinkedIn know who your 2<sup>nd</sup> and 3<sup>rd</sup> degree connections are and exactly how you are connected to them? How does Facebook target advertisements to your newsfeed based on websites you visited? How does google know how to autocomplete the terms you enter into the search field? We are now living in the age of “Big Data” and businesses need big minds to code, collect, store, analyze, interpret, report, and utilize those data in ways that can improve their products and services. Analytics uses techniques such as mathematic modeling, data simulation, probability, and statistic to mine complex data sets for answers to complicated business questions. The emerging field of data science is not clearly defined, but can be thought of as a special case of analytics. Data science requires mathematical, engineering, technological, communication, analytical, and business skills – which together are used to link multiple datasets from disparate sources and identify patterns and solutions across them.

## WHAT IS A DATA SCIENTIST?

Data scientists are a mix of mathematicians, trend-spotters, and computer scientists. The data scientist’s role is to decipher large volumes of data and carry out further analysis to find trends in the data and gain a deeper insight into what it all means. Data scientists operate between the business and IT worlds and drive industries by analyzing complex datasets to tease out insights that companies can leverage into actions. The successful data scientist is one part programmer, one part statistician, one part creative, and thinks like a CEO seeking solutions to business problems and a research scientist experimenting with the cyber world.

## WHAT IS A DATA ANALYST?

Generally speaking, a data analyst will retrieve and gather data, organize it, and use it to reach meaningful conclusions. Companies in nearly every industry hire data analysts, from healthcare providers to retail stores to fast food chains. The insights that data analysts bring to an organization can be valuable to employers who want to know more about the needs of their consumer or end user. Regardless of which industry they work in, data analysts can expect to spend their time developing systems for collecting data and compiling their findings into reports that can help improve their company. A data analyst’s true job is to add value to a company—either their own or their clients.

## DATA SCIENCE/ANALYTICS CAREER TITLES

Data Scientist	Data Analyst	Statistician	Data Architect
Data Engineer	Database Administrator	Business Analyst	Data and Analytics Manager

## DATA SCIENTIST/DATA ANALYST SKILL SETS

Technical	Non-Technical
<p><u>Python Coding</u> – Python is the most common coding language typically required in data science roles, along with Java, Perl, or C/C++.</p>	<p><u>Intellectual Curiosity</u> – It is a term used to describe one's desire to invest time and energy into learning more about a person, place, thing or concept, an essential skill for data scientists.</p>
<p><u>Hadoop Platform</u> – Although this isn't always a requirement, it is heavily preferred in many cases. Having experience with Hive or Pig is also a strong selling point. Familiarity with cloud tools such as Amazon S3 can also be beneficial.</p>	<p><u>Business Acumen</u> – To be a data scientist or data analyst you'll need a solid understanding of the industry you're working in, and know what business problems your company is trying to solve. In terms of data science, being able to discern which problems are important to solve for the business is critical, in addition to identifying new ways the business should be leveraging its data.</p>
<p><u>SQL Database/Coding</u> – Even though NoSQL and Hadoop have become a large component of data science, it is still expected that a candidate will be able to write and execute complex queries in SQL.</p>	<p><u>Communication Skills</u> – Companies searching for a strong data scientist or data analyst are looking for someone who can clearly and fluently translate their technical findings to a non-technical team, such as the Marketing or Sales departments. A data scientist must enable the business to make decisions by arming them with quantified insights, in addition to understanding the needs of their non-technical colleagues in order to wrangle the data appropriately.</p>
<p><u>Unstructured Data</u> – It is critical that a data scientist be able to work with unstructured data, whether it is from social media, video feeds or audio.</p>	<p><u>Teamwork</u> – A data scientist or data analyst in particular cannot exist in isolation. Data scientists need to be able to offer help and mentorship to others, give and take feedback, and be willing to constantly share their knowledge, methods, and results with each other.</p>

### Online Resources

[Butler University Data Science Minor](#)

[Butler University Data Center](#)

[Internship & Career Services: Guide to Professional Success PDF](#)

[Data Analyst Job Description \(snagajob.com\)](#)

[What is Data Science? \(datajobs.com\)](#)

[What is a Data Scientist? \(sas.com\)](#)

[The Life of a Data Scientist \(mastersindatascience.org\)](#)

[Explore the Big Data Job Market \(analyticaltalent.datasciencecentral.com\)](#)

[Data Science Jobs \(cybercoders.com\)](#)

[Machine Learning, Data Science, Data Mining, Big Data, Analytics \(kdnugget.com\)](#)

[Data Science Central \(datasciencecentral.com\)](#)

[Internships in Data Science \(internships.com\)](#)

["Tech Scene Grows in Indy" \(theeconomist.com\)](#)

[Data Science Indiana Job Board \(techpoint.com\)](#)

[20 Websites to Find Data Science Jobs \(springboard.com\)](#)

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