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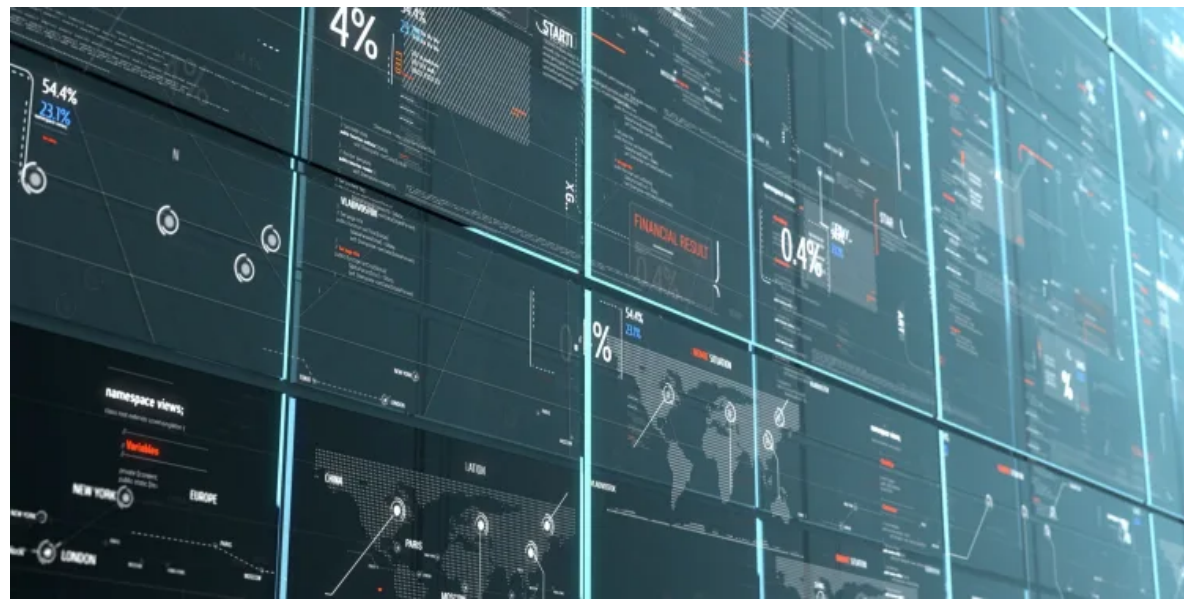
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9 FUNDAMENTAL DATA SCIENCE SKILLS FOR BUSINESS PROFESSIONALS

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According to Glassdoor, data science is one of the top three jobs in America in 2020. It boasts a high job satisfaction rating, along with a median salary of $107,801. With more than 2.5 quintillion bytes of new data generated every day, it's no surprise that there's a growing demand for professionals who can process, interpret, and leverage information in just about every industry.

Big data has transformed the way we work, and data fluency is something all professionals can benefit from. Whether you dream of becoming a data scientist or simply need the tools to become an educated data consumer, data analytics expertise can help you succeed in business today. Before

diving into the skills you need to become adept at working with data, here's an overview of what data science is.

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WHAT IS DATA SCIENCE AND WHY IS IT IMPORTANT?

Data science is the process of deriving meaningful insights from raw data. Data science aims to make sense of the copious amounts of data, also referred to as **big data**, that today's organizations maintain.

Practitioners of data science—whether they're data scientists or other professionals skilled in data, such as analysts, engineers, or statisticians—use scientific methods, algorithms, and systems to draw actionable conclusions with big data. These individuals are concerned with the deeper meaning hidden within data and what it means for the future.

Data science is incredibly valuable from a business perspective. It allows organizations to make data-driven decisions, automate processes to increase efficiency, develop higher-quality products backed by data, and predict and plan business outcomes.

For example, in manufacturing, big data can make factories more efficient and cut down on waste by producing exactly what consumers desire, exactly when they need it. Additionally, in marketing, big data can show which

consumers are most valuable and how to make less valuable consumers more valuable through customer engagement or loyalty programs.

There's no denying the tremendous business value of data science across all industries, which also speaks to the importance of data science skills for business professionals. To keep up in a world that relies so heavily on data, professionals of any background can benefit from gaining data science skills.

Whether you're looking to become a data scientist or simply want to learn how to drive business results with data, here are the top nine data science skills for professionals.

THE TOP DATA SCIENCE SKILLS

1. Critical Thinking

Data science is focused on using data to solve business problems. Because of this, anyone who wants to become adept at using data needs to be able to critically think about challenges they face.

An ability to recognize business problems, conduct testing, and swiftly identify trends in data is fundamental to data science. Critical thinking skills are a must-have for anyone participating in data analysis.

2. Mathematical Ability

You don't have to be a mathematician to become proficient in data science, but strong math skills become increasingly important as you begin dealing with more complex analyses.

A seasoned data scientist needs a solid understanding of statistics, probability, linear algebra, and multivariable calculus. Data scientists often call on statistical methods to find structure in data and make predictions,

and linear algebra and calculus can make machine-learning algorithms a lot easier to comprehend.

3. Data Visualization

Data scientists and business professionals alike need strong data visualization abilities. It's crucial to be able to transform raw data into compelling visuals that tell a story.

Rather than simply presenting a list of values to your stakeholders, it's more effective to visually communicate data in a way that's easy for them to digest. Some popular [data visualization techniques](#) that all business professionals should know include pie charts, bar charts, and histograms.

4. Programming Skills

Programming languages, like Python and R, are commonly used to solve complex statistical problems with data. In addition, proficiency in a database querying language, like SQL, can help you more easily extract and change data in a database.

While programming skills are immensely valuable, they're not entirely necessary for beginners dabbling in data. It's more important that you focus on effectively analyzing and visualizing data to draw conclusions.

5. Data Wrangling

Data wrangling is the process of cleaning up raw data in preparation for analysis. It involves identifying and resolving any mistakes, filling in missing data, and organizing and transferring it into a different format.

This is an important skill for anyone dealing with data to acquire because it leads to a more efficient and organized data analysis process. You can

extract valuable insights from data more quickly when it's cleaned up and in its optimal viewing format.

6. Business Fluency

An understanding of business language is important in any field. But in data science, it's a requirement.

One of the core responsibilities of professionals who work with big data is to interpret large figures that inform [business decisions](#)—from KPIs to quotas to supply and demand. Regardless of your industry, [developing your business skills](#) can make it easier for you to make connections between data and business objectives.

7. Communication

It's not enough to just read data; you also have to be able to interpret it in a business setting and communicate your findings to stakeholders and colleagues, even if they're less technically inclined.

Try to incorporate data visualizations into your presentations whenever possible to make it easier for your audience to understand the meaning behind the numbers. While your visualizations should speak for themselves, it's important to mention any details or calculations that can further clarify the data.

8. Machine Learning

As artificial intelligence continues to grow in popularity, machine learning is a highly valuable skill for professionals working with big data.

Machine learning refers to the use of computer algorithms that automatically learn and adapt from data. Some business uses of machine

learning include risk management, <u>performance analysis</u>, trading, and automation.

Knowing the basics of machine learning can help you gain a deeper understanding of your organization and boost efficiency through automation.

9. Ethical Skills

While ethics might not be top of mind when it comes to increasing your data science knowledge, there's a good reason why it should be.

With big data comes a huge ethical dilemma regarding <u>consumer privacy</u>. Consumers are sharing more data online than ever before, and organizations are able to provide better, more personalized customer experiences because of it.

It's imperative that customer privacy is at the forefront of your mind during the data analysis process. Data scientists and business professionals alike need to maintain a set of ethical tenets that guide their data privacy policies.

THE IMPORTANCE OF DATA SCIENCE SKILLS

Data science skills are immensely valuable for aspiring data scientists and business professionals who want to make an impact at work. While technical skills like programming and machine learning are fundamental to understanding data science, soft skills like critical thinking and ethics shouldn't be overlooked.

Regardless of your industry or title, knowledge of data science concepts and tools can enable you to make more data-driven decisions, understand your organization's performance, and plan for the future.

Are you interested in improving your data literacy? Download our [Beginner's Guide to Data & Analytics](#) to learn how you can leverage the power of data for professional and organizational success.

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