

CAREER

DATA SCIENCE VS DATA ANALYSIS: What's the difference?

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From social media posts and advertisements to influencing what we think and which information we consume, data plays a dominating role. It is both fascinating and a little unsettling how our digital footprints are recorded and transformed into refined information for the platforms we additively consume.

In simple terms, data is information; it is the figures and statistics that are collected and analysed which is then transformed into knowledge. This manipulation of data into knowledge and insight is made possible through the disciplines of Data Science and Data Analysis.

Data scientists use machine learning techniques, statistical models, and algorithms to make sense of large datasets, identifying trends and patterns that serve specific purposes. In the case of social media platforms, it serves to create personalised strategies.

On the other hand, data analysts focus on interpreting the data to guide decisions, such as how to improve user experience and maximise platform performance.

As data is now a key player in service sectors worldwide, the demand for data analysts and scientists is gradually rising. Both fields are multidisciplinary and require expert knowledge and skills from areas of Statistics, Computer Science, etc. to produce informed decisions and predictive data models.

However, although Data Science and Data Analysis share the same end goal, the paths to achieving said goal differ to some extent. Several key differences separate the job profile of a data analyst from that of a data scientist.

A background in a quantitative field such as Statistics, Mathematics, Computer Science, or Economics might be the optimal path forward. However, the key is to build proficiency in essential tools. This can be done with the help of available resources and learning platforms that offer legitimate certifications widely recognised by employers.

Data analytics revolves around analysing existing data to forecast trends and recommend actions to solve problems. Analysts use tools like Microsoft Excel, Tableau, and Microsoft Power BI to spot patterns, predict sales, study customer behaviour, and develop strategies.

Data scientists, on the other hand, use more advanced technologies, such as machine learning and AI, to analyse big, complex data sets. A data scientist's job would be to study and investigate the collected data and design and implement analytical models and algorithms. To do so, data scientists use programming languages like Python and R, and various data visualisation, AI, and machine learning techniques.

Proficiency in programming languages and machine

learning models is essential in the field of Data Science. Big data analysis also requires the use of tools like Apache Spark. Additionally, advanced knowledge of Mathematics and Statistics plays a major part in the field.

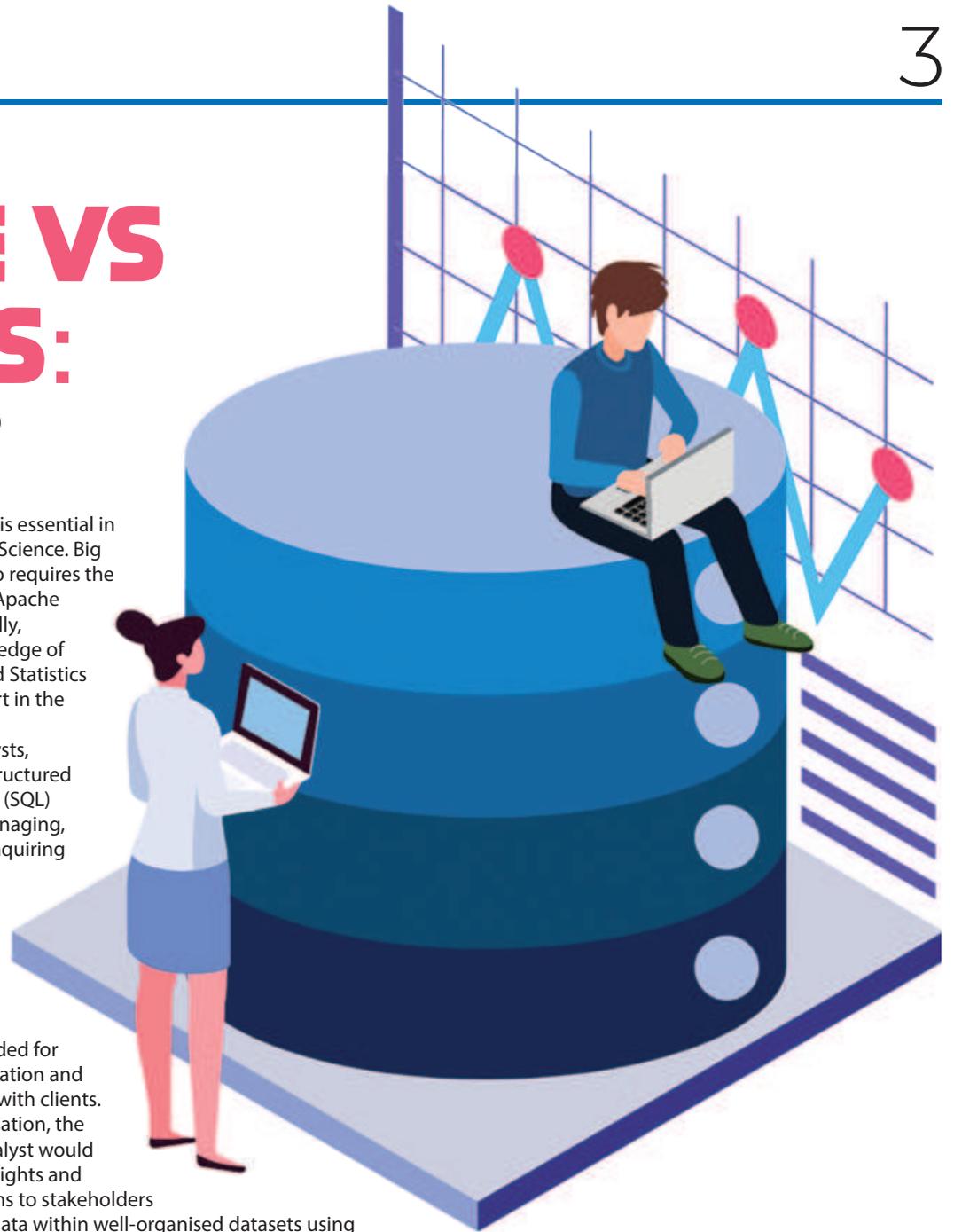
For data analysts, knowledge of Structured Query Language (SQL) is needed for managing, retrieving, and inquiring data. Advanced Excel skills and expertise in data visualisation tools, like Power BI and Tableau, are needed for effective presentation and communication with clients.

In any organisation, the role of a data analyst would be to provide insights and recommendations to stakeholders by interpreting data within well-organised datasets using statistical tools and highlighting emerging trends and findings. Analysts also have to create dashboards and visualisations in addition to managing data governance policies and improving data integration. In summary, they work to maximise and better company performance by leveraging past information or data.

Data scientists, on the other hand, develop and aid in making business decisions based on their findings and conclusions from typically unstructured or scattered data. They interpret results and manage the data infrastructure by employing programming languages, and statistical and software tools. They need more extensive skills to effectively collect, pre-process data, design algorithms, and build predictive models.

Data scientists and analysts are expected to have a broader set of technical competencies and qualifications and are not just limited to expertise in these core tools.

Even though data science and analytics fields don't require strict academic routes, having a background in a quantitative field is always considered an advantage. Irrespective of educational background, anyone interested and passionate about these fields can learn from online



platforms such as Coursera. These platforms provide flexible learning hours, making it particularly convenient for those with existing academic or professional commitments.

A career in the data field also demands a solid grasp of transferrable skills such as critical thinking, communication, problem-solving, teamwork, etc. Professionals working in this arena have to communicate and collaborate with team members, business partners, stakeholders, engineers, and higher officials, translating technical findings into simpler terms in meetings.

Although a career as a data scientist or data analyst might seem glamorous and is no doubt highly rewarding, it requires a strong foundation and understanding of technical and analytical skills and a commitment to continuous learning. The field is both intellectually demanding and constantly evolving. Success in this field often comes down to a genuine interest in organising and working with complex data sets and producing solutions to existing and future problems.

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