Data Science Vs. Data Engineering

Data Science and **Data Engineering** are two different branches of big data paradigm — an approach in which enormous speeds, varieties and volumes of structured, unstructured, and semi-structured data are captured, processed, stored, and analyzed using a set of techniques and new technologies compared to those used decades past.

What is Data Science?

If science is a systematic way by which people study and explain domain-specific phenomena that occur in the natural world, then we can think of **Data Science** as a scientific field dedicated to the discovery of knowledge through the data-driven world.

Data Scientists use mathematical techniques and algorithmic approaches to find solutions to complex business and scientific problems. **Data Science** practitioners use their methods to obtain information that would otherwise be inaccessible.

In business, the goal of data science is to provide businesses and organizations with the information they need to optimize organizational processes for maximum efficiency and revenue generation.

By Waqas Ali Munawar

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What is Data Engineering?

If engineering is the use of science and technology to design and build systems that solve problems, we can think of **Data Engineering** as a field of engineering dedicated to overcome processing bottlenecks and data processing issues for applications that use big data.

Data engineers use their computer and software engineering skills to design systems and solve problems in handling and processing large data sets.

Difference Between Data Science and Data Engineering:

The roles of **Data Scientist** and **Data Engineer** are often completely confused and intertwined by recruiters. If we look at the most job descriptions for companies that are hiring, they often don't match titles and roles, or just expect candidates to do both data science and data engineering jobs.

If we hire someone to help us understand our data, be sure to define our needs very clearly before writing the job description. Since a data scientist must also have expertise in the particular field they are working in, this requirement typically prevents a data scientist from also having expertise in data engineering (although some data scientists have experience use of engineering data platforms).

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And if we hire a data engineer who has data science skills, he or she usually won't have much expertise outside of the data realm. Be prepared to call in a subject matter expert to help you.

So many organizations combine and confuse roles in their data projects, sometimes data scientists are stuck spending a lot of time learning how to do the job of a data engineer, and vice versa. To get the highest quality working product in the shortest time possible, hire a data engineer to process data and a data scientist to understand it.

Keep in mind that Data Science and Data Engineering are just two roles within a larger organizational structure. Managers, mid-level employees and business leaders also play an important role in the success of any data-driven initiative. The main benefit of integrating data science and data engineering into our projects is to leverage our external and internal data to strengthen our organization's decision support capabilities.

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