

The background is an abstract composition of overlapping shapes and patterns. It features a dark purple and blue color palette. A prominent pattern of binary code (0s and 1s) is visible, particularly in the upper right and lower right areas. Flowing, ribbon-like lines in shades of blue and purple sweep across the frame, creating a sense of movement and depth. The overall aesthetic is modern and technological.

What is Data Science?

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Data Science Defined

Data Science: an area of study that uses maths and statistics combined with computing science to find answers and solve problems in business and society.

Analytics: the discovery of patterns and trends from data.

Big Data: a dataset that is too large to be processed by traditional tools and software.

Describe problems solved

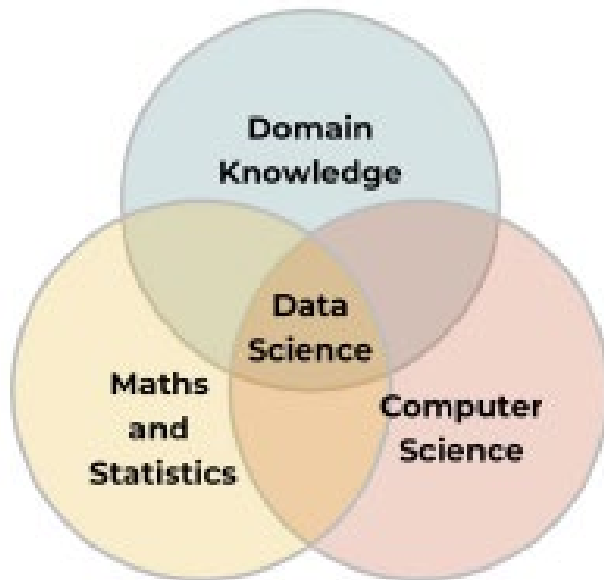


Data Professionals talk about their work
and uses of Data Science / Analytics:



<https://youtu.be/O6kIA5Y8TdY>

Data Science further defined



The field of data science combines computer science, specific knowledge about a particular topic or subject area, and mathematical skills to extract insights and knowledge from data

The ability to identify the problem to solve, the correct data to use, carry out the analysis and then implement the outcome requires all three areas to be brought together.

If any one of these areas is missing it is not possible to extract value effectively from data.

Pros and cons

Computers do not need to eat or sleep so can be used 24 hours a day to make consistent predictions.

Although more consistent than a human, they are not necessarily more accurate.

Machine learning models require updated data to constantly improve their predictions as the world around them changes.

Applications of data science and machine learning are far and wide, touching every aspect of our lives. Let's see examples ...

Applications of Data Science
How many can you think of?



Applications of Data Science - examples

PERSONAL

- ❖ Translation apps and websites
- ❖ Image recognition
- ❖ Speech recognition devices
- ❖ Personalised medical treatment
- ❖ Self-driving cars
- ❖ Movie recommendations
- ❖ Website sort-order and recommendations

BUSINESS

- ❖ Fraud detection
- ❖ Financial risk estimation
- ❖ Preventing customer attrition
- ❖ Delivery logistics
- ❖ Testing marketing approaches
- ❖ Airline route planning
- ❖ Real-time pricing optimisation
- ❖ Personalised advertising

GOVERNMENT

- ❖ Detecting tax evasion
- ❖ Preventing cyber attacks
- ❖ Detecting terrorism threats
- ❖ Improving national security
- ❖ Improving health services
- ❖ Coordinating responses to emergencies such as floods, terrorist attacks or pandemics across multiple services



Time for you to investigate

All Students: Investigate the different job roles in Data Science

For example

- ✓ Data Analyst
- ✓ Data Engineer
- ✓ Data Architect
- ✓ Data Manager
- ✓ Chief Data Officer
- ✓ AI Engineer
- ✓ Data Scientist