

Unit 6

Roles & responsibilities of a data science professional in healthcare

- The efficiency of healthcare workers is increased due to the constant improvements and innovations in the industry.
- The important role of data science in healthcare is crucial to integrating **data modeling** methods throughout the industry.
- Data scientists can make use of the available data to draw conclusions and develop models for the future.

A data scientist's primary functions in the healthcare sector include the following:

- To gather patient information or data
- To assess the needs or requirements of the hospital
- To organize and classify data so that medical practitioners can use it
- To execute data analyses using a variety of tools
- Implement various methods to draw insights from unstructured or raw data
- Using the assistance of the development teams to create predictive models

Role of Data Science in Stock Market Trading

- Data science has transformed our economy.
- The best example of data science is the disruption it had on the Indian stock market.
- As one of the major segments of a country's economy, the stock market has used this digital revolution to go from strength to strength.
- From analyzing market trends and predicting stock prices to identifying potential trading opportunities in the stock market, **data science** provides invaluable financial business intelligence.

- **Role Of Data Science In Stock Market Trading**

- Data science is the study of data, primarily focusing on extracting insights and understandings and using them to make informed decisions.
- Here is some **data science application** that is critical in stock market trading.
- **Capital Market Insights In Real-Time**
- **Algorithmic Trading**
- **Identify Fraudulent Behavior**

What Types Of Analysis Are Used In Stock Market Trading?

- **Predictive Modeling For Stock Trading:**

- Predictive modeling uses statistics, data mining, and artificial intelligence to analyze data and predict future outcomes and performance.
- It can help identify stocks that are undervalued or overvalued and identify potential earnings surprises.

- **Sentiment Analysis:**

- In the stock market, sentiment analysis has been particularly helpful in identifying trends, sentiments, and opinions of investors, which can then be used to predict stock price movements and identify trading opportunities.

- **Machine Learning For Stock Market:**

- Machine learning involves using self-improving algorithms to forecast the future value of stocks and other financial instruments.
- For example, machine learning algorithms such as classifiers and regression can help predict stock market fluctuation.

Bioinformatics and Data Science in Biology

- Bioinformatics is a multidisciplinary field that utilizes computer programming, machine learning, algorithms, statistics, and other computational tools to organize and analyze large volumes of biological data.
- Fields of biology that generate massive amounts of data include genomics, transcriptomics, proteomics, and metabolomics.
- Bioinformatics entails the storage and management of biological data via the creation and maintenance of powerful databases, as well as the retrieval, analysis, and interpretation of data via algorithms and other computational tools.
- As such, it has applications for a wide range of fields. Here are just a few examples of how bioinformatics helps tackle real-world problems:
- It can help cancer researchers identify which gene mutations cause cancer. Scientists can then develop targeted therapies exploiting that knowledge.
- It can help biologists map evolutionary connections and ancestry.
- It can help pharmaceutical companies develop new drugs customized to a person's individual genome.
- It can aid in the development of new vaccines.
- It can enable the development of crops that are more resistant to insects and disease.
- It can identify microbes that have the ability to clean-up environmental waste.
- It can improve the health of livestock.
- It can help forensic scientists identify incriminating DNA evidence.