



# Evolution of Data Science in Information Technology

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## ABSTRACT

*The data which we collect in large amount may not be processed for a longer time. Many different traditional ways are been followed with sophisticated development of computers. Majorly Data Science motto is to analyze systematic data with large sets, which should be useful As the data science explains the extraction of information from the data sets, the data is collected from different applications mostly applications from healthcare, banking, travel etc. This paper majorly focusses on the data science introduction and various applications, benefits in the data science.*

**KEYWORDS:** data science1, data mining2, data analytics3, big data4, business data intelligence5;

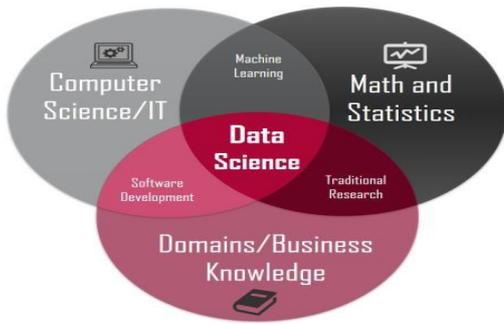
## 1. INTRODUCTION

The data which is stored is increasing rapidly, here the major problem is that collection and extraction of necessary information from data. Here the data scientists and experts must need to have exact knowledge from the data collected and must have statistics. Computer Science with business problem perspective with data sciences, basically data science is a inter-disciplinary system with new data research cycle, algorithms and different process. Here the systems extract data from structured and unstructured data with classical disciplines like mining, databases, and distributed system mechanism which possess common properties. Majorly Data Science deals with the assembled and unassembled mechanisms and algorithms. Here this paper tells the use of data science, history of data science, differences between data science and business problems related to business intelligence, applications, benefits and life cycle

of datascience.

## 2. ROLE OF DATA SCIENCE

Most of the data we collect from the internet is from various sources like healthcare, travelling, banking etc. As the availability of data has extremely raised owing to the hike of internet with cheaper equipment. Information gathering through online records, online tweets, social media, data streams will have some computational problems while processing, by following the traditional ways, it's not up to the mark as lot of time is required for data processing. A new trend called Data Science with combination of statics and knowledge with computer science has emerged



In the past decades data science has become an emerging trend for business and research area. As it passed to all areas of human life with business intelligence, research economics, government sectors and social sciences with medical informatics.

### 3. BUSINESS INTELLIGENCE AND DATA SCIENCE

Here we illustrate the likeness between the data science and its applications. It works with large and business intelligence. In this section, we will explain similarities and differences between Business Intelligence and Data Science, since these terms are often mixed or used as synonyms. They both work with large amount of data, and they both have the capability for interpreting data into useful information for better decision making, but the approaches are different. Business Intelligence platforms have become deficient to control huge data. The Business Intelligence and Data Science differ in data. Business Intelligence works with highly structured data, while Data Science can work with all types of data, structured, semi-structured and unstructured data gathered from different source.

Difference between Data science and Business intelligence:

- i) Past data is analyzed for future predictions
  - ii) Works with dynamic unstructured data
- Visualize of data, Stats, and Machine learning are required skills for emerging Data Science.

Data science is an interdisciplinary field that employs scientific techniques, procedures, algorithms, and frameworks to extract knowledge and insights from a variety of structured and unstructured data sources. Data science is related to data mining, including machine learning tools and big data analysis.

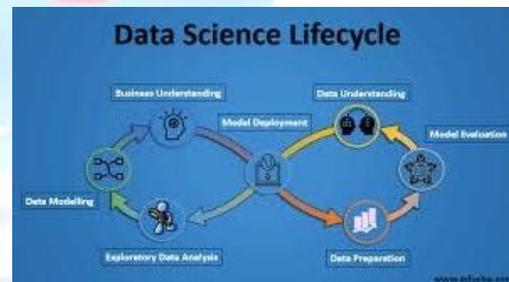
Basically, Data science will work on structured and un structured data which is collected from different resources

### 4. BUSINESS INTELLIGENCE

- i) Analyses past data
- ii) Works with static structured data
- iii) Statistics and Visualization are the two skills required for business intelligence.
- iv) Analytical method
- v) Data stored in a Data Warehouse

Business intelligence will majorly focus on current state and business trends, data science is used for analyzing the past data which can be help full for future predictions and also used for Predictive Analytics or Prescriptive Analytics. According to Merritt-Holmes the BI systems are majorly developed to analyze the real data events which focus on future. Business intelligence generates the detail reports which makes to understand the current trend and information prediction that helps to gain more knowledge on data mining.

### 5. LIFE CYCLE OF DATA SCIENCE



### 6. UNDERSTANDING THE DATA SCIENCE LIFECYCLE

Data science can be understandable by different phases like data discovery in retrieving data from various sources. Like structured and un-structured format. Where in structured, data is organized into a formatted way, and analyzing the data is very easy here. In unstructured the data is variable and regulated. Mostly un-structured data is from different sources.

The data preparation in which the data is transformed into a pre specified format which includes complex methods and model building with various mathematical models with optimal value.

## 7. APPLICATION OF DATA SCIENCE

Application of data science in various areas is most and numerous with emerging use in finance, trading, genetics, banking, social media, medicine, business and transportation, this helps in credit scoring and fraud detection in the online streams. Basically, data science is general purpose customer relationship. Using data science and machine learning data scientists has developed recommended systems for analyzing the data They use Speech Recognition system to understand users, to convert human speech into textual data and to provide an appropriate response.

## 8. CONCLUSION

With large amount of a data increase there is need of analyzing the information which is collected from various sources. Data science includes machine learning models which defines the future benefits.

As we can conclude data science with multi-disciplinary field with mathematical and statistical computer science, as the application of data science has very wide range applications. The main aim of data scientists is to recognize and use a meaning full data platform which helps in taking smarter decisions as they uses different tools and models methods to identify patterns and hidden knowledge with the transformed data with use of hardware and efficient algorithms and programming application

### Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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