1. Data Science**:**

Refers to the umbrella of techniques where you are trying to extract information and insights from data. This includes MIS reporting on the lowest level to building predictive models on the higher level.

1. Data Mining:

Refers to the science of collecting all the past data and then searching for patterns in this data. You look for consistent patterns and / or relationships between variables. Once you find these insights,

you validate the findings by applying the detected patterns to new subsets of data. The ultimate goal of data mining is prediction - and predictive data mining is the most common type of data mining and one that has the most direct business applications.

1. Data Analysis:

This is a loosely used term. People running reporting also say that they are analyzing data and so do predictive modelers. I would just take this as any attempt to make sense of data can be called as data analysis.

1. Machine learning -

Is the science of creating algorithms and program which learn on their own.

Once designed, they do not need a human to become better.

Some of the common applications of machine learning include following:

Web Search, spam filters, recommender systems, ad placement, credit scoring, fraud detection, stock trading, computer vision and drug design. An easy way to understand is this - it is humanly impossible to create models for every possible search or spam,

**so you make the machine intelligent enough to learn by itself.**

When you automate the later part of data mining - it is known as machine learning.