Data Analytics vs. Data Analysis Executive Summary

Analytics is 'the method of logical (data) analysis' [7] (e.g. work on approach, methods, platform, algorithm, technology, etc.), while the analysis process(!) is 'the careful study of something to learn about its parts, what they do, and how they are related to each other' [8] (e.g. mental though process, analyse knowledge, hypothesis, reasoning, etc.). Analytics includes 'extensive use of mathematics and statistics, the use of descriptive techniques and predictive models to gain valuable knowledge from data – data analysis. The insights from data are used to recommend action or to guide decision making rooted in business context. **Thus, analytics is not so much concerned with individual analyses or analysis steps, but with the entire methodology' [4].** Analytics is 'the systematic computational analysis of data or statistics' [6]. One goal of analytics is to support/improve data analysis.

Data Analytics
- Data Analytics 'is the discovery and communication of meaningful patterns in data' [4].
- 'Big Data analytics is the ability to process large amounts and various types of information' [1]. 'Analytic processes are often characterized as discovery for the initial hypothesis formulation, development for establishing the analytics process for a specific hypothesis, and applied for the encapsulation of the analysis into an operational system' [1].
- Traditional statistical analytic techniques downsize, sample, or summarize the data before analysis' [1]. 'Big Data analytics often emphasize the value of computation across the entire dataset, which gives analysts better chances to determine causation, rather than just correlation' [1]. 'Today, most analytics in statistics and data mining focus on causation—being able to describe why something is happening' [1].
- 'Analytics is the synthesis of knowledge from information' [1].
- 'Big Data Analytics is the process of examing big data to uncover hidden patterns, unknown correlations and other useful information that can be used to make better decisions' [2].
- 'Big Data Analytics referes to the process of collecting, organizing and analyzing large sets of data to discover patterns and other useful information' [5].

Data Analysis
- Data analyis is 'a process of inspecting, cleaning, transforming, and modeling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making' [3].
- Data science 'refers to the conduct of data analysis as an empirical science, learning directly from data itself' [1].

Appendix: References

[1] NIST Big Data Definitions & Taxonomies Subgroup, Draft SP 1500-1 -- Volume 1: Definitions,
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[2] SAS on Big Data Analytics, Online: http://www.sas.com/en_us/insights/analytics/big-data-analytics.html
[3] Wikipedia on Data Analysis, Online: http://en.wikipedia.org/wiki/Data_analysis
[4] Wikipedia on Data Analytics, Online: http://en.wikipedia.org/wiki/Analytics
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