An Overview About Data Sciences

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***Abstract*—The ability to get, to mean, and do some change with information is a key in the modern world. With the growth of technology anything can be a producer of "information". So, how can we keep the coherence between what we understand / do with information and a virtually innumerable amount of data? The answer is only one, Data Sciences, the concept that arises from both, Big Data and Machine Learning, and is strongly related with most of 2017 Tech Trends according to Forbes and Gartner. This paper is a overview about Data Sciences and the context that around it.**

***Index Terms*—Big Data, Machine Learning, Data Analysis.**

I. Introdction

ACCORDING Gartner [1] , "Artificial Intelligence(AI) and Advanced Machine Learning(AML)" is one of 2017 Technology Trends. On same way, in 2017[2], [3], other trend topics has arise at last years that have made world a place completely different from 10 or 15 years ago. The concept of Artificial Intelligence and Machine Learning was release in totally different time. Now, these concepts are surrounded by a new world [4]. With this, people that uses Data Sciences(DS) - word that represents the universe of Artificial Intelligence, Advanced Machine Learning and Big Data -, must to transform the way to use this universe to continue delivering important results.

Velocity demands mutations(a new way to get the same result, or a new vision about the same concept). This idea is approached by Eddie Obeng on his work about business and it actual necessities[5]. Figure 1 is a strong(and simple) representation of the needs that we will see if Data Sciences is a tool that we want to use. On the following sections, this paper will try to explain the most important ideas (changes too) from Data Sciences and the needs(maybe already in use) to keep in up its results.

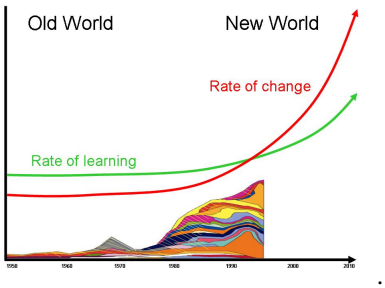

Fig. 1. The Rate of Change [5]

II. Main Concepts

To avoid the idea that Data Science is a tool that can solve everything, we need to understand the aim of this concept, even before knowing the concept itself. The benefit of collecting and storing data is no enough to the modern demands, for example, IBM [6] and other top players on the universe of DS has alerted about the needing of correct look to the data and assertive methods to transform this data in value. To they, in the near future, many companies can be collapse if the collecting of data and its storage become aim of his business[7]. In other words: its much more important do something with some information(with right value) than collect all the available information[8], [9]. When we understand this domain, it is possible to go a little deeper into the concepts.

The Data Science is the universe that involves the means to collecting, storing, "understanding" and valuing data. Today is no more possible make business with only the "personal opinion" of the owner. The billions of people interacting with things (at any time) and producing the archetype of "how the things works" are certainly an way to keep any success business alive[10]. So, what are needed to use the DS at my newly(or already established) enterprise? Sensors(1), can be cellphones, people, or really anything. It produce data and send it to some database or approach to store "information"(2). With the data on hands is needed make it clean(3) and concise(4). After this, some Machine Learning(chose carefully to your data types and domain)(5) technique is applied to the data with aim to train the method or evaluate the entrance(6). Then, the results of machine learning(ML) method are analyzed(7). The previous step can indicate a new start, from step 3 or 4, or can indicate some doings on the business domain.

Obviously this paper don't have the pretension to explain each one step. This is only an overview of process with a hight level of abstraction. However, all discussion in this job occurs focusing the step 1, 3 and 4, and these are the "most important" steps to take good results on modern enterprise context. With the approximation of exponential increase of Internet of Things [11], no one method or tech will work with all data from all things. There will be neither time nor money to extract the perfect and exact result from it. It is exactly at this point that steps 1, 3 and 4 will be more important.

III. Conclusion

THIS paper try to explain how important are the "non-technological" aspects of the Data Sciences on modern contexts. Theses aspects are the listed steps 1, 3 and 4, that represent the interaction of humans with data and information about business domain. To keep business alive, the human aspect and it actions on the Data Sciences steps will need more importance each day.

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