IOSR Journal of Computer Engineering (IOSR-JCE)
e-ISSN: 2278-0661,p-ISSN: 2278-8727, Volume 18, Issue 4, Ver. II (Jul.-Aug. 2016), PP 101-102
www.iosrjournals.org

Big data

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Abstract: *Big data refers to huge chunks of data that are very large and complex for it to be processed or analyzed by traditional methods. Initially, this enormous amounts of data brought about major challenges concerning analysis, curation, searching, dissemination, storing, visualizing, running queries and updating. It because of these challenges that big data was born and it answered effectively all these concerns. Big data analytics refers to using advanced data analysis methods that can extract valuable data from the huge chunks of information. Big data is often said to be accurate and has been used to make more informed decisions that have led to increased efficiency, low risk and reduction in costs. Big data has brought about the ability to spot trends in businesses, observe patients, identifying criminals in the streets and for espionage purposes. This paper will attempt to look at some of the applications and challenges of big data.*
Keywords: *Amazon big data, big data, big data analytics, EBay big data, healthcare*

I. Introduction

It is estimated that each two days, humans generate a total of 5 billion GB of data (Gunelius, n.p.). This is data from their computers, phones, tablets, smart devices, websites and applications. With the ongoing adoption of smartphones and the growing production of smart devices for homes and healthcare, the 5 exabytes mark will soon be just a quarter of the real number. Where all that data might be coming from? Well, some of it is a bit obvious. Smartphones continually send GPS coordinates, people text and call, people send and receive emails, people create accounts online, people make bank transactions online and they also make online purchases among other things. The unobvious sources of data are from sensors such as wireless sensor networks. They are increasingly becoming key contributors for improved quality of healthcare as well as advancements in computer science. These WNS are scalable, use energy efficiently, are unobtrusive and come with diverse security features to prevent against hacking. The data from all these types of sources is insanely enormous. It is so huge such that it cannot be handled by traditional data analysis systems and this is where big data comes in. Big data enables the huge chunks of data to be used for innovating, gaining a competitive edge and making people or processes more productive (Manyika et al, n.p).

II. Body

Giant companies

The first application of big data is in giant companies dealing with online stores, social media sites or search engines due the amounts of data these have to work on. Giant companies often have to handle data in large amounts. A site like eBay houses 2 data warehouses. The first one handles seven and a half petabytes of data and the second one handles 40 petabytes of data. The information contained is about search queries, customer purchases, their recommendations as well as the product they offer just to mention a few. Amazon as well handles transactions in the range of millions per day from online purchases and it has 3 of the largest databases (Rijmenam, n.p). Facebook currently houses over fifty billion photos of its users. Google has to handle over a hundred billion search queries per month. All these giant companies would have been overwhelmed by these amounts of data and users would have been highly inconvenienced by this. Thanks to big data, these companies are able to handle all their transactions, queries, search histories and user data without any challenges. Big data is in the background of the operations, ensuring that data is processed and stored appropriately, ensuring that users on search engines get the most accurate results from their search query on the internet, ensuring that users can upload or view as many photos and videos on social media site as they want. There has been no delay in making online purchases or searching from a 40PB database of products just because of big data.

Healthcare

The second application of big data is in healthcare where it has brought about improved quality of life. Big data has been used to provide personalized healthcare to specific patients, do a prescriptive analysis of a patient, have automated reports on different patients produced periodically and better manage patients' medical records (Grooves et al, n.p). When it comes to decision making, big data has enabled hospital service providers to make confident and well-informed decisions as concerns critically ill patients. From their database, they can identify patients who had similar illnesses, what kind of measures were taken and how effective they were.

Also, health organizations are able to survey on certain diseases, their spread and how they can be managed if hospitals store their data into a central repository. For personalized healthcare, patients are also being given smart sensors either as wearables or inserted into their bodies to monitor specific things in a patient (Chawla & Darcy, 662). This data needs to be stored somewhere and where there are strange patterns from a given patient, the hospital needs to be made aware so as to assist. Thanks to big data, all this is possible, it can identify in real time from the thousands of sensors the one that has strange patterns. Also, new healthcare data is continually being produced, drug trials, new types of illnesses, new strains of viruses and bacteria, new drugs and their effectiveness and all this information has to go somewhere. Thanks to big data, hospitals are able to store all this data and make use of it.

III. Conclusion

It may seem that big data is doing marvels in the world today, however, is big data all that necessary? Could people have resulted to collecting huge amounts of data for nothing? Is big data really necessary? It is without a doubt that big data is an absolute necessity in today's world. It has helped a lot in businesses, healthcare, scientific research and so many other things. Business operations are now becoming hyper-efficient, quality healthcare is being provided, and better decisions are being made all thanks to big data. Big data has unleashed lots of opportunities and lots have been achieved just in its infancy.

References

[1] Gunelius, Susan. "*The Data Explosion In 2014 Minute By Minute – Infographic*". *ACI.* N.p., 2014. Web. 2 July 2016.
[2] Manyika, James, et al. "*Big data: The next frontier for innovation, competition, and productivity.*" (2011).
[3] Rijmenam, Mark. "How Amazon Is Leveraging Big Data". *Datafloq.com*. N.p., 2016. Web. 2 July 2016.
[4] Groves, Peter, et al. "*The 'big data'revolution in healthcare*." *McKinsey Quarterly* 2 (2013).
[5] Chawla, Nitesh V., and Darcy A. Davis. "Bringing big data to personalized healthcare: a patient-centered framework." *Journal of general internal medicine* 28.3 (2013): 660-665.