Applications of Big Data analytics

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Abstract: Big Data analytics is the process of collecting, organizing and analyzing large sets of data (*called* Big Data) to discover patterns and other useful information. Big Data analytics can help organizations to better understand the information contained within the data and will also help identify the data that is most important and future decisions. Analysts working with Big Data typically want the *knowledge* that comes from analyzing the data. As the technology that helps an organization to break down data silos and analyze data improves, business can be transformed in all sorts of ways. Today's advances in analyzing big data allow researchers to decode human DNA in minutes, predict where terrorists plan to attack, determine which gene is mostly likely to be responsible for certain diseases and, of course, which ads you are most likely to respond to on Facebook.

Key words: Big Data, Data Analytics, Applications of Big Data

Introduction

Big data has increased the demand of information management specialists so much so that Software AG,Oracle Corporation, IBM, Microsoft, SAP, EMC, HP and Dell have spent more than $15 billion on software firms specializing in data management and analytics. In 2010, this industry was worth more than $100 billion and was growing at almost 10 percent a year: about twice as fast as the software business as a whole.[1] Developed economies increasingly use data-intensive technologies. There are 4.6 billion mobile-phone subscriptions worldwide, and between 1 billion and 2 billion people accessing the internet.[3] Between 1990 and 2005, more than 1 billion people worldwide entered the middle class, which means more people became more literate, which in turn lead to information growth. The world's effective capacity to exchange information through telecommunication networks was 281 petabytes in 1986, 471 petabytes in 1993, 2.2 exabytes in 2000, 65 exabytes in 2007[8] and predictions put the amount of internet traffic at 667

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exabytes annually by 2014.[1] According to one estimate, one-third of the globally stored information is in the form of alphanumeric text and still image data,[2] which is the format most useful for most big data applications. This also shows the potential of yet unused data (i.e. in the form of video and audio content).While many vendors offer off-the-shelf solutions for big data, experts recommend the development of in-house solutions custom-tailored to solve the company's problem at hand if the company has sufficient technical capabilities.[3]. [4] proposed a system which uses intermediate features of maximum overlap wavelet transform (IMOWT) as a pre-processing step. The coefficients derived from IMOWT are subjected to 2D histogram Grouping. This method is simple, fast and unsupervised. 2D histograms are used to obtain Grouping of color image. This Grouping output gives three segmentation maps which are fused together to get the final segmented output. This method produces good segmentation results when compared to the direct application of 2D Histogram Grouping. IMOWT is the efficient transform in which a set of wavelet features of the same size of various levels of resolutions and different local window sizes for different levels are used. IMOWT is efficient because of its time effectiveness, flexibility and translation invariance which are useful for good segmentation results.

Applications of Bigdata Analytics

Travel and hospitality

Keeping customers happy is key to the travel and hotel industry, but customer satisfaction can be hard to gauge – especially in a timely manner. Resorts and casinos, for example, have only a short window of opportunity to turn around a customer experience that's going south fast. Big data analytics gives these businesses the ability to collect customer data, apply analytics and immediately identify potential problems before it's too late.

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Health care

Big data is a given in the health care industry. Patient records, health plans, insurance information and other types of information can be difficult to manage – but are full of key insights once analytics are applied. That's why big data analytics technology is so important to heath care. By analyzing large amounts of information – both structured and unstructured – quickly, health care providers can provide lifesaving diagnoses or treatment options almost immediately.

Government

Certain government agencies face a big challenge: tighten the budget without compromising quality or productivity. This is particularly troublesome with law enforcement agencies, which are struggling to keep crime rates down with relatively scarce resources. And that's why many agencies use big data analytics; the technology streamlines operations while giving the agency a more holistic view of criminal activity.

Retail

Customer service has evolved in the past several years, as savvier shoppers expect retailers to understand exactly what they need, when they need it. Big data analytics technology helps retailers meet those demands. Armed with endless amounts of data from customer loyalty programs, buying habits and other sources, retailers not only have an in-depth understanding of their customers, they can also predict trends, recommend new products – and boost profitability.

Conclusion:

Big data analytics helps organizations harness their data and use it to identify new opportunities. That, in turn, leads to smarter business moves, more efficient operations, higher profits and happier customers. In his report *Big Data in Big*

Companies, IIA Director of Research Tom Davenport interviewed more than 50 businesses to understand how they used big data. He found they got value in the following ways:

1. **Cost reduction.** Big data technologies such as Hadoop and cloud-based analytics bring significant cost advantages when it comes to storing large amounts of data – plus they can identify more efficient ways of doing business.

2. **Faster, better decision making.** With the speed of Hadoop and in-memory analytics, combined with the ability to analyze new sources of data, businesses are able to analyze information immediately – and make decisions based on what they've learned.

3. **New products and services.** With the ability to gauge customer needs and satisfaction through analytics comes the power to give customers what they want. Davenport points out that with big data analytics, more companies are creating new products to meet customers' needs.

References:

[1] "Data, data everywhere". The Economist. 25 February 2010. Retrieved 9 December 2012

[2] "An Error Occurred Setting Your User Cookie". The Information Society. **30**: 127–143. doi:10.1080/01972243.2013.873748.

[3] Rajpurohit, Anmol (11 July 2014). "Interview: Amy Gershkoff, Director of Customer Analytics & Insights, eBay on How to Design Custom In-House BI Tools". KDnuggets. Retrieved 2014-07-14. Dr. Amy Gershkoff: "Generally, I find that off-the-shelf business intelligence tools do not meet the needs of clients who want to derive custom insights from their data. Therefore, for medium-to-large organizations with access to strong technical talent, I usually recommend building custom, in-house solutions."

[4] Christo Ananth, A.S.Senthilkani, S.Kamala Gomathy, J.Arockia Renilda, G.Blesslin Jebitha, Sankari @Saranya.S., "Color Image Segmentation using IMOWT with 2D Histogram Grouping", International Journal of Computer Science and Mobile Computing (IJCSMC), Vol. 3, Issue. 5, May 2014, pp-1 – 7

[5] Kalil, Tom. "Big Data is a Big Deal". White House. Retrieved 26 September 2012.

[6] Executive Office of the President (March 2012). "Big Data Across the Federal Government" (PDF). White House. Retrieved 26 September 2012.

[7] Lampitt, Andrew. "The real story of how big data analytics helped Obama win". Infoworld. Retrieved 31 May 2014.

[8] "Big Data Definition". MIKE2.0. Retrieved 9 March 2013.