

International Journal of Computer Science and Mobile Computing



A Monthly Journal of Computer Science and Information Technology

ISSN 2320-088X

IMPACT FACTOR: 6.017

IJCSMC, Vol. 6, Issue. 6, June 2017, pg.289 – 293

CYBER SECURITY SYSTEMS USING BIG DATA

G. Laxmi Deepthi¹, K.Navaneetha²

gopisettideepthi@gmail.com¹, navaneethakandle@gmail.com²

CSE Dept, Assistant Professor^{1,2}
VBIT^{1,2}

Abstract: while big data regularly become an important issue of research and has been used Everywhere in many industries, Big data security has been increasingly concerned. Nevertheless, there is noticeable challenge between Big data security and the common use of Big data. In this paper we firstly reviewed the definition of Big data, the rise of big data. Then, we present the needs for big data and data analytics and show the advance in big data analytics. After that we address some security challenges in big data. We highlight on the cyber security and how can we secure the bigdata, Also we will number some of the top security tools in fight against cybercrime .finally mention some of applications of big data techniques in learning.

1. Introduction

Big data has become an important topics in science, health, engineering, medicine, finance, business and finally society itself. More than 2.5 quintillion bytes of data are created every day [1]. Almost 90% of data in the world today had been created in last two years alone. Examples of big data include the quantity of data shared every day in internet, mobile phone location data, YouTube videos viewed and twitter feeds. In the latest years, data produced by learning environments started to have enough raising the necessitate for big data technologies and tools to handle them. In another words we can say Big data is shorthand for advance learning in technology that can open the door to a new approach to understanding the world and making the revelation that started in computing processes more than two decades had led to huge amount of digital data being amassed by corporations. Advances in digital sensors; proliferation of communication systems, especially mobiles and devices; massive scale logging of system events; and rapid movement toward paperless organizations also had led to massive collection of data sources within organizations.

2. What is big data?

The expression "big data" refers to "massive amount of digital information's which has been stored or transmitted in computer systems". Another definition of big data "any amount of data that is too huge or too multifaceted that predictable applications are not sufficient to process them". The term also refers to the tools and technologies used to hold "Big data". Definition and characteristics of big data ;3V's" big data is high- volume, high velocity and high -variety information assets that demand cost -effective ,innovative forms of information processing for enhanced insight and decision making . There is a lot of data all the time growing at 50 % a year or more than doubling every two years, estimates IDC, It's not just more steams of data, but entirely new ones. Internet improved access to information is also increasing the big data inclination. For example; In 2009 Washington opened the door for more data by starting Data.gov, a Web site that makes any one can access easily to all kind of government data. Data now is available and understandable to computers. Most of the big data is uncontrollable stuff like words, video on the Web, images and steams of sensor data, its traditional database.

Since 2011 the interest in a area known as big data has increased, and the enormous majority of computer science research, big data has received significant public and media interest. Headlines "Big data :the greater, good or attack of privacy?" and "Big data is opening doors , but maybe too many "speak volumes as to the common perception of big data .From the begging it obvious that the big data intertwined with substantial technical and socio-technical issues but an exact defection is unclear.

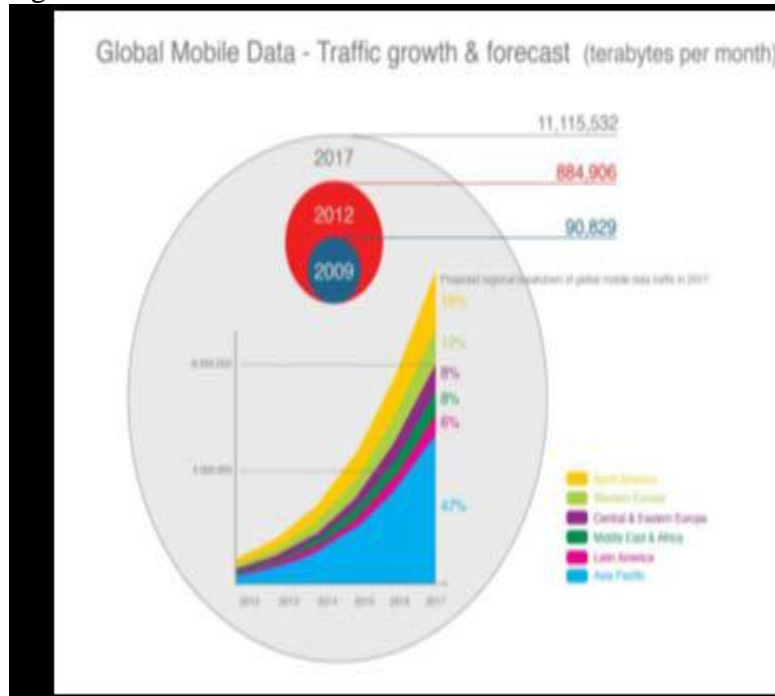
- Oracle defines Big data as; the derivation of value from traditional relational database driven business decision making , augmented with new sources (such as blogs, social media, sensor networks, images est.)of un structured data which vary in size ,structure , format and other factors. It focused upon infrastructure
- Intel describes big data through quantifying the expenses of its business partners. It also suggest that the organizations which were surveyed deal extensively with unstructured data and place an emphasis on performing analytics over their data.
- Micro soft provides a remarkable succinct definition:"Big data is the tern increasingly used to describe the process of applying serious computing power- the latest in machine learning and artificial intelligence to seriously massive end of ten highly complex sets of information" ,It states that big data requires the application of significant computer power .

3. The rise of big data

The first point and central feature of Big data as a phenomenon is the un -presented growth in the volume and variety of high-frequency digital structured and the un structured data which badly emitted by and picked up about humans populations behaviors and beliefs, each year since 2012, over 1.2 zeta byte of data have been produced -1021 bytes; enough to fill 80 billon 16 GB I phones that would the earth more than 100 times.

The volume of these data is increasing just like a human population of digital data .And just like a human population with a sudden outburst of fertility gets larger and younger, The proportion of digital data produced recently (i.e. new baby data) is growing .It has been said many times that 90% of world's data was created over just two years, Although the assertion is almost impossible to source or corroborate. The second development is what has primarily been called 'the industrial revolution of data 'big data' Mike Hooeigan at the US BLS defined big data as "non

sampled data ,characterized by the creation of database from electronic sources whose primary purpose is something other than statistical inference " .



4. What is cyber security?

Cyber security, we can also call it information technology security, focuses on protecting computers ,networks, programs and data from unintended access, change or destruction. Another definition; Cyber security is the body of technologies ,processes and practices designed to protect networks ,computers ,programs from attack ,damage or unauthorized access .In computing context ,The term security implies cyber security .According to a December 2010 analysis of U.S spending plans ,the federal government has allotted more than 13\$ billion to cyber security over the next five years.[7-1]

Why is cyber security Important? Governments, corporations, financial institutions ,hospitals and other business collect ,process and store confidential information on computers and transmit that data across networks or other computers .Because of difficulty and the growing volume of cyber attacks , constant attention is required to protect sensitive personal information and business as well as safeguard national security .On March 2013 The nation's top intelligence officials warned that cyber attack and digital spying are the top threats to national security ,eclipsing terrorism.[7] Ensuring cyber security requires corresponding efforts thought an information system .We can mention these elements of cyber security : Application security, Information security, Network security, Disaster recovery business continuity planning and End user education.



5. Conclusion

Big data technologies are changing the whole world, everything from internet of things to gathering both more qualitative and more quantitative data will lead to better decision-making and insight. By leveraging big data technologies effectively ,organizations can be more efficient and more competitive .Privacy advocates and data organizers criticize the history of big data as they watch the growing ubiquity of data collection and increasingly tough uses of data enabled by powerful processors and unlimited storage .Researchers ,business ,and entrepreneurs strongly point to concrete or anticipated innovations that may be dependent on the default collection of large data sets. Also the quick growth of the internet has bought with it an exponential increase in the type and frequency of cyber attacks. Many well-known cyber security solutions are in place to counteract these attacks. The huge argument today is how should privacy risks be weighed against big data rewards? especially the recent controversy over leaked documents revealing the massive scope of data collection, analysis .Big data creates tremendous chance for the world economy not only in field of security ,but also in marketing and credit risk analysis to medical research and built-up planning. At the same time the unexpected benefits of big data are tempered by concerned that advances of data ecosystem will turn over the power relationships between government, business and individuals, and lead to racial or other profiling. Discrimination over criminalization, and other restricted freedoms. Finally: It is really very important to understand the security and privacy implications resulting from big data implementations supporting non information security functions. Specifically, security required executives should be aware of who Big data increases attack surface of hackers and understand how to protect against link ability threats.

References

- [1] Pro Apache Hadoop-Date: 08 September 2014-Sameer Walker Affiliated with, Madhu Siddalingaiah. http://link.springer.com/chapter/10.1007/978-1-4302-4864-4_1#page-2
Motivation for Big Data-
- [2] Undefined By Data: A Survey of Big Data Definitions-Jonathan Stuart Ward and Adam Barker-School of Computer Science-University of St Andrews, UK{jonthan.stuart.ward, adam.barker}@st-andrews.ac.uk-<http://arxiv.org/pdf/1309.5821v1.pdf>
- [3] BIGDATA ANALYTICS - 5th QUARTER BY PHILIP RUSSOM -TDWI research.

- http://www.tableau.com/sites/default/files/whitepapers/tdwi_bpreport_q411_big_data_analytics_tableau.pdf.
- [4] Alvaro A. Cárdenas, Pratyusa K. Manadhata, Sreeranga P. Rajan-
<http://www.infoq.com/articles/bigdata-analytics-for-security>. Big Data Analytics for Security-
Posted by
- [5]<http://www.umuc.edu/cybersecurity/about/cybersecurity-asics.cfm>.
<http://whatis.techtarget.com/definition/cybersecurity>
- [6] <http://whatis.techtarget.com/glossary/Security-Threats-and-untermeasures>
- [7] [http://bigdata.teradata.com/US/Success-Stories/Innovations-and-Insights/teradata-
<http://www.teradata.com/Cyber-Security->](http://bigdata.teradata.com/US/Success-Stories/Innovations-and-Insights/teradata-http://www.teradata.com/Cyber-Security-)
- [8] Tuesday, January 06, 2015 Securing Big Data - Part 1-Posted by Steve Jones at
- [9] [http://service-architecture.blogspot.com/2015/01/securing-big-data-part-2-
understanding.html](http://service-architecture.blogspot.com/2015/01/securing-big-data-part-2-understanding.html).
- [10] <http://www.dummies.com/how-to/content/unstructured-data-in-a-big-data-environment.html>
unstructured data in big data environment-
- [11] http://ictactjournals.in/paper/IJSC_Paper_6_pp_1035_1049.pdf
- [12] ICTACT JOURNAL ON SOFT COMPUTING: SPECIAL ISSUE ON SOFT
COMPUTING MODELS FOR BIG DATA, JULY 2015, VOLUME: 05, ISSUE: 04 1035
- [13] <http://bmcbioinformatics.biomedcentral.com/articles/10.1186/1471-2105-11-12-1>
APPLICATION OF BIG DATA IN EDUCATION DATA MINING AND LEARNING
ANALYTICS – A LITERATURE REVIEW -Katrina Sin¹ and Loganathan Muthu²⁻¹Faculty
of Education and Languages, Open University Malaysia, Malaysia-
- [14] [https://developer.yahoo.com/blogs/hadoop/comparing-pig-latin-sql-constructing-data-
processing-pipelines-444.html](https://developer.yahoo.com/blogs/hadoop/comparing-pig-latin-sql-constructing-data-processing-pipelines-444.html) -
- [15] -http://link.springer.com/chapter/10.1007/978-3-319-06245-7_6#page-2.M.Chen *et al.*, Big
data: Related Technologies, Challenges and future Prospects,."-Springer Brief in computer
science