International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 06 Issue: 11 | November - 2022 Impact Factor: 7.185 ISSN: 2582-3930

THE FUTURE OF BIG DATA ANALYTICS AND ITS PROGRESS

Dr CK Gomathy-Assistant Professor, Department of CSE, SCSVMV Deemed to be University, India

Mr. R Subash,Mr. S. Srivathsav,Mr. V. Sai Vamsi Krishna,Mr. K.Prasannavenkatesan -UG Scholars,

Department of CSE, SCSVMV Deemed to be University, India

Abstract

Big data streams are now widespread because real-time applications that generate enormous amounts of data quickly have proliferated during the past 10 years. Big data is a treasure trove of vast quantities of data. Big data is commonly used in conjunction with other current buzzwords like data science, artificial intelligence, deep learning, and machine learning. Big data has a very promising future because of the demand for data across many technical industries. A massive amount of data has been produced as a result of the COVID-19 global epidemic. Big data analytics is helpful for evaluating, maintaining, and archiving information about COVID-19 patients for later use during the pandemic phase. Big Data Analytics (BDA), a growingly important technology, can significantly enhance sustainable tourism in terms of destination selection, traveller satisfaction, and the quality of travel experiences. Streaming Big Data is the term used to describe data that needs to be saved, processed, and analysed and that is continuously generated from various data sources, including Internet of Things (IoT) devices. The article provides information on - Big data analytics techniques in social media, COVID-19 Pandemic in the New Era of Big Data Analytics, Big data analytics and sustainable tourism, Predictive big data analytics for supply chain demand forecasting, Streaming Big Data Analytics, Big data stream analysis and Big Data Analytics in Crypto Currency.

Keywords: Big Data, Streaming Big Data, Predictive Big Data, Sustainable Tourism

I. Introduction

Every business needs to set up a system for gathering data. Finding patterns, trends, and correlations in enormous amounts of raw data in order to assist data-driven decision-making is known as big data analytics. A technique for examining the huge dimensions of organized, unstructured, and semi-structured data sets is known as "Big Data Analytics."

Healthcare organizations, like many other industries, are producing data at a great velocity that brings both many benefits and difficulties at the same time. The fundamentals of big data, including its administration, evaluation, and potential applications, particularly in the healthcare industry. Syndicate can deal with extreme uncertainties like those brought on by the current COVID-19 outbreak by using big data analytic tools.

Social media is used extensively by people of all ages. The most important use of big data in the area of social media is big social data, or information obtained from social networks. For the study of real-time application scenario, big data batch processing is insufficient. The majority of the data generated in a real-time data stream requires real-time data processing. A sizable volume of data must be processed quickly in order for organisations or enterprises to be able to respond in real-time to changing situations.

II. Literature Review

YEAR	AUTHOR	TITLE	CONTENT
2021	Sepideh Bazzaz Abkenar Mostafa Haghi Kashani Ebrahim Mahdipour Seyed Mahdi Jameii	Big data analytics meets social media: A systematic review of techniques, open issues, and future directions	Role and use of big data analytics in social media platform
2021	Jie Sheng, Joseph Amankwah-Amoah, Zaheer Khan and Xiaojun Wang	COVID-19 Pandemic in the New Era of Big Data Analytics: Methodological Innovations and Future Research Directions	Big data analytics tecnique for examine management issues arising from the global pandemic
2020	Agrawal, Rohit, Vishal A. Wankhede, Anil Kumar, Sunil Luthra, and Donald Huisingh	Big data analytics and sustainable tourism: A comprehensive review and network based analysis for potential future research	Big Data Analytics concepts and tools in tourism to help ensure improved tourist satisfaction.

2020	Seyedan, Mahya, and Fereshteh Mafakheri	Predictive big data analytics for supply chain demand forecasting: methods, applications, and research opportunities	Influence of Big Data Analytics in the field of supply chain and demand forecasting.
2019	SK. Wasim Akram , M.Varalakshmi , J.Sudeepthi	Streaming Big Data Analytics-Current Status, Challenges and Connection of unbounded data Processing platforms	Solving the current challenges in streaming using big data techniques
2019	Taiwo Kolajo, Olawande Daramola & Ayodele Adebiyi	Big data stream analysis: a systematic literature review	Systematic literature review about big data stream analysis

III. BDA in Various Fields

- Based on the analysis techniques used, there are two basic groups for big data analytic approaches in social networks. both network-oriented and content-oriented strategies.
- Healthcare firms, like many other industries, are producing data at a great velocity that brings both many benefits and difficulties at the same time.
- Big data analytics methods already in use can be used to advance academic research and inform managerial and governmental decisions regarding global pandemics (Covid-19).
- An enormous amount of data has been produced by the COVID-19 global epidemic. Big data analytics is helpful for evaluating, maintaining, and keeping data on the COVID-19 patient during the pandemic era for later use.
- BDA was included in sustainable tourism to create a framework. For better visitor satisfaction, hospitality service providers should adopt BDA concepts and methods and educate themselves on the advantages of employing BDA in sustainable tourism.
- The survey's predictive BDA applications for demand forecasting in the supply chain. Several methods and their uses in supply chain management, including time-series forecasting, clustering, K-

nearest-neighbours, neural networks, regression analysis, support vector machines, and support vector regression

- In order to analyze huge data streams, several different techniques and technologies have been used. Numerous alternative big data streaming solutions have been developed by the open source community and business technology companies in response to the rising need for big data streaming analytics.
- Scalability is a significant obstacle in big data streaming analysis. The big data stream is expanding exponentially at a rate that is far quicker than that of the computing power. Although Moore's law is followed by processors, data size is growing exponentially. In order to deal with the ever-increasing size and complexity of data, research efforts should focus on developing scalable frameworks and algorithms that will support data stream computing mode, effective resource allocation strategy, and parallelization challenges.
- Big data analytics can assist users of cryptocurrencies better understand the market's future and the value of the thousands of digital currencies they can buy and sell, which can help solve many of these problems. This is so that cryptocurrency investors can utilise data analytics tools to identify trends by examining previous data and use them to make decisions about the direction of the cryptocurrency market.
- Big data development is complicated by the diversity of big data. The majority of big data benchmarks now in use are intended to assess a particular system or architecture.
- For instance, GridMix and PigMix are appropriate for MapReduce Hadoop systems, while HiBench is excellent for evaluating Hadoop, Spark, and streaming workloads.

IV. Algorithm Techniques

S.no	Topic	Year	Algorithm / Methodology / Implementation
1.	Big data analytics meets social media: A systematic review of techniques, open issues, and future directions	2021	ML algorithms to protect cyber-attacks. 3 machine learning algorithms, namely Logistic Regression, Support Vector Machine, and Naïve Bayes for classifying eight types of events and Modified Threshold-based Cuckoo Search Algorithm

			(MTCSA) was applied as a heuristic search algorithm for weight optimization.
2.	COVID-19 Pandemic in the New Era of Big Data Analytics: Methodological Innovations and Future Research Directions	2021	machine learning algorithms to build complex models on very large datasets to predict future outcomes and Biological evolution-inspired algorithms for global optimization.
3.	Big data analytics and sustainable tourism: A comprehensive review and network based analysis for potential future research	2020	SLR (Systematic Liteature Review) METHODOLOGY
4.	Predictive big data analytics for supply chain demand forecasting: methods, applications, and research opportunities	2020	Predictive big data analytics for supply chain demand forecasting: methods, applications, and research opportunities
5.	Streaming Big Data Analytics-Current Status, Challenges and Connection of unbounded data Processing platforms	2019	tools and technologies employed Hadoop, Spark and streaming workloads, GridMix and PigMix are for MapReduce Hadoop systems. BigBench is suitable for benchmarking Teradata Aster DBMS, MapReduce systems, Redshift database, Hive, Spark and Impala
6.	Big data stream analysis: a systematic literature review	2019	tools and technologies employed for big data stream analysis are Shape of the data, Data access, Availability and consistency requirement, Workload profile required, Latency requirement

V. Conclusion

The information on the potential application of big data analytics is systematically reviewed or gathered in this article. Additionally, this article makes clear references to the impact and potential applications of big data analytics in industries including healthcare, social media, and others. Along with the proposed methodology, many big data analytics methodologies and procedures are also being explored. This article offers a structured overview of social media big data analytics. Big data analytical methodological advancements can be used to investigate management concerns resulting from the COVID-19 worldwide pandemic. This page provides information on the advantages of employing BDA in sustainable tourism for travelers, the travel industry, and hotel and hospitality service providers.

In the future, computational physics will continue to make extensive use of big data using predictive analytics, high-speed computing systems, machine learning, and other techniques. By utilizing these big data-related systems, engineers and scientists have been able to more readily develop cars, planes, and other vehicles. Additionally, they have improved their ability to forecast both the everyday weather and natural calamities. Nearly since the discipline of computational physics was founded, big data analytics has had an impact.

VI. Reference

1. Abbasi, A., F. M. Zahedi, D. Zeng, Y. Chen, H. Chen and J. F. Nunamaker (2015). 'Enhancing predictive analytics for antiphishing by exploiting website genre information', Journal of Management Information Systems, 31, pp. 109–157.

2. Amankwah-Amoah, J. (2018). 'Global consolidation of industries and business failures: insights from brick-and-mortar and online outlets', International Journal of Comparative Management, 1, pp. 185–201. Amankwah-Amoah, J. (2020). 'Stepping up and stepping out of COVID-19: new challenges for environmental sustainability policies in the global airline industry', Journal of Cleaner Production, 271, art. 123000.

3. Amankwah-Amoah, J., Z. Khan and G. Wood (2020). 'COVID19 and business failures: the paradoxes of experience, scale, and scope for theory and practice', European Management Journal, https://doi.org/10.1016/j.emj.2020.09.002.

4. Amankwah-Amoah, J. and S. Adomako (2019). 'Big data analytics and business failures in data-rich environments: an organizing framework', Computers in Industry, 105, pp. 204–212.

5. Araz, O. M., D. Olson and A. Ramirez-Nafarrate (2019). 'Predictive analytics for hospital admissions from the emergency department using triage information', International Journal of Production Economics, 208, pp. 199–207.

6. C.K.Gomathy.(2010),"Cloud Computing: Business Management for Effective Service Oriented Architecture" International Journal of Power Control Signal and Computation (IJPCSC), Volume 1, Issue IV, Oct - Dec 2010, P.No:22-27, ISSN: 0976-268X .

7. Dr.C K Gomathy, Article: A Study on the recent Advancements in Online Surveying , International Journal of Emerging technologies and Innovative Research (JETIR) Volume 5 | Issue 11 | ISSN : 2349-5162, P.No:327-331, Nov-2018

8. Dr.C K Gomathy, Article: A Study on the Effect of Digital Literacy and information Management, IAETSD Journal For Advanced Research In Applied Sciences, Volume 7 Issue 3, P.No-51-57, ISSN NO: 2279-543X,Mar/2018

9. Dr.C K Gomathy, Article: An Effective Innovation Technology In Enhancing Teaching And Learning Of Knowledge Using Ict Methods, International Journal Of Contemporary Research In Computer Science And Technology (Ijcrcst) *E*-Issn: 2395-5325 Volume3, Issue 4,P.No-10-13, April '2017

10. Dr.C K Gomathy, Article: Supply chain-Impact of importance and Technology in Software Release Management, International Journal of Scientific Research in Computer Science Engineering and Information Technology (IJSRCSEIT) Volume 3 | Issue 6 | ISSN : 2456-3307, P.No:1-4, July-2018.

11. Dr.C K Gomathy, ANALYSIS OF MUSIC GENRE CLASSIFICATION, Journal Of Engineering, Computing & Architecture, Volume: 12 Issue: 03 March – 2022, Impact Factor:6.1, ISSN:1934-7197, Available at http://www.journaleca.com/

12. Dr.C K Gomathy, THE EFFICIENT MANAGEMENT FOR MALICIOUS USER DETECTION IN BIG DATA,COLLECTION., International Journal of Scientific Research in Engineering and Management (IJSREM) Volume: 05 Issue: 10 | Oct- 2021, ISSN: 2582-3930, Impact Factor:7.185,Available at www.ijsrem.com

13. Dr.C K Gomathy, BIG DATA ANALYSIS OF AIRLINE DATASET USING HIVE, International Research Journal of Engineering and Technology (IRJET), Volume: 08 Issue: 10 | Oct 2021, e-ISSN: 2395-0056, p-ISSN: 2395-0072, Impact Factor value: 7.529, Available at www.irjet.net.

14. Dr.C K Gomathy, THE CUSTOMER DATA ANALYSIS USING SEGMENTATION WITH SPECIAL Reference Mall, International Research Journal of Engineering and Technology (IRJET), Volume: 08 Issue: 9 | Sep 2021, e-ISSN: 2395-0056, p-ISSN: 2395-0072, Impact Factor value: 7.529, Available at www.irjet.net.

15. Dr.C K Gomathy, THE EFFICIENT MANAGEMENT FOR MALICIOUS USER DETECTION IN BIG DATA,COLLECTION., International Journal of Scientific Research in Engineering and Management (IJSREM) Volume: 05 Issue: 10 | Oct- 2021, ISSN: 2582-3930, Impact Factor:7.185,Available at www.ijsrem.com

Author's Profile

1. 

R. Subash (11199A225) , Student, B.E. Computer Science and Engineering, Sri Chandrasekharendra SaraswathiViswa Mahavidyalaya deemed to be university, Enathur, Kanchipuram, India. His Area of Interest in Big Data Analytics.

2. 

S. Srivathsav (11199A215) , Student, B.E. Computer Science and Engineering, Sri Chandrasekharendra SaraswathiViswa Mahavidyalaya deemed to be university, Enathur, Kanchipuram, India. His Area of Interest in Big Data Analytics.

3. 

V. Sai Vamsi Krishna (1199A211) , Student, B.E. Computer Science and Engineering, Sri Chandrasekharendra SaraswathiViswa Mahavidyalaya deemed to be university, Enathur, Kanchipuram, India. His Area of Interest in Big Data Analytics.

4. 

K. Prasannavenkatesan (11199A191) , Student, B.E. Computer Science and Engineering, Sri Chandrasekharendra SaraswathiViswa Mahavidyalaya deemed to be university, Enathur, Kanchipuram, India. His Area of Interest in Big Data Analytics.

5. 

Dr. C.K. Gomathy is Assistant Professor in Computer Science and Engineering at Sri Chandrasekharendra Saraswathi Viswa Mahavidyala, Enathur, Kanchipuram, India. Her area of interest: Software Engineering, Web Services, Knowledge Management and IoT