Visualizing Insights with AnalyticsBay: A Data Analytics Study

[1]Rajshri Ingle, [2]Amit Bodke, [3] Sampada Deshpande, [4]Pallavi Shewale, [5]Abhishek More

[1]Professor, [2] Student, [3]Student, [4]Student, [5]Student
[1] Department Of Computer Engineering,
Zeal College Of Engineering And Research, Pune, Maharashtra

Abstract

Recently, the phrase "Big Data" has been used to refer to datasets that get so big that they are difficult to manage using conventional database management systems. These are data sets that are too large to be processed by most tools. Current big data quantities range from a few dozen terabytes (TB) to many petabytes (PB) of data in a single data set, and these numbers are steadily rising. As a result, gathering, storing, searching, sharing, using analytics, and displaying large data are some of the challenges. Enterprises nowadays are examining massive amounts of extremely detailed data to learn things they didn't know previously. They do this by using software tools and storage systems to record, store, manage, and interpret the data in a reasonable amount of time. We provide a tool that will enable users to enter a dataset jointly and employ intelligent solutions for data visualization. This program will be made available to the general public on a playstore, where users can use it without paying.

Keywords: Data Science, Analytics, Data Analytics, Cleaning, Prediction, Regression, clustering;Productivity; Visualization; Consensus; Ease of access.

Introduction

At AnalyticsBay, we are deeply committed to developing and sustaining our application in the market through a collaborative approach. We recognize the challenges that arise from conflicts between data and its users, and we seek to address this issue by connecting them through a single application that simplifies the process of analyzing data. Our goal is to facilitate seamless collaboration and data sharing among users, while providing them with a user-friendly platform to effectively manage and analyze their data. By leveraging our expertise in analytics and data management, we are confident that our application will deliver significant value to users across a range of industries.

Our approach involves incentivizing cryptocurrency holders by staking their cryptocurrency and earning profits by liquidating it into the market at higher rates. In addition to this, we offer bonus points to those who are contributing positively to the fields of health, happiness, and the economy. Conversely, we also have measures in place to penalize those who support terrorism or engage in activities that threaten peace and security, such as invading other countries and causing war-like situations.

We recognize that trust, security, and equality are critical factors in maintaining peace within nations and organizations. As such, our platform is designed to foster coordination by promoting these values among cryptocurrency holders. By incentivizing positive contributions and penalizing negative behaviors, we aim to create a community of responsible and ethical cryptocurrency holders who work together to build a better future for all.

Organizations that are in poor economic conditions or are burdened with debt often face difficulties in achieving financial growth. In many cases, these taxes can lead to decreased purchasing power for individuals and can make it difficult for organizations to expand their operations and improve their financial situations.

Big Data Analytics

Big data is data whose scale, distribution, diversity, and/or timeliness require the use of new technical architectures, analytics, and tools in order to enable insights that unlock new sources of business value. Three main features characterize big data: volume, variety, and velocity, or the three V's. The volume of the data is its size and how enormous it is.

Analytics Tools and Methods

With the rapid evolution of technology and the exponential growth of data generated by organizations, the need for faster and more efficient data analysis has become paramount. Simply having a large volume of data is no longer sufficient to make timely and informed decisions. Traditional data management and analysis methods are inadequate for dealing with the complex and diverse nature of big data sets. Thus, there is an urgent requirement for specialized tools and techniques tailored for big data analytics, along with robust infrastructure for storing and managing these large data sets. The impact of big data extends across the entire data lifecycle, from data collection to processing to decision-making, eliminating any potential points of vulnerability and reducing potential weaknesses in the system.

The B-DAD framework has been proposed to address the need for incorporating big data analytics tools and methods into the decision- making process. With the ever-growing volume, velocity, and variety of data, traditional data management and analysis techniques are no longer adequate to derive valuable insights in a timely manner. The B-DAD framework is designed to integrate different big data storage, management, and processing tools, analytics tools and methods, and visualization and evaluation tools to the different stages of decision-making. This comprehensive approach ensures that organizations are equipped with the necessary tools to efficiently manage and analyze big data, resulting in informed and data-driven decisions.

Optimizes resource distribution. The impact of big data analytics is apparent in three distinct areas: the architecture and storage of big data, the processing of data and analytics, and the subsequent analyses that are used to extract insights and support informed decision-making. This section will delve into each area in greater detail, exploring the specific changes that have been brought about by therise of big data and its associated tools andtechnologies.

	Centralized	Distributed	Decentralized
Network/hardware resources	Maintained & controlled by single entity in a centralized location	Spread across multiple data centers & geographies; owned by network provider	Resources are owned & shared by network members; difficult to maintain since no one owns it
Solution components	Maintained & controlled by central entity	Maintained & controlled by solution provider	Each member has exact same copy of distributed ledger
Data	Maintained & controlled by central entity	Typically owned & managed by customer	Only added through group consensus
Control	Controlled by central entity	Typically, a shared responsibility between network provider, solution provider & customer	No one owns the data & everyone owns the data
Single Point of Failure	Yes	No	No
Fault tolerance	Low	High	Extremely high
Security	Maintained & controlled by central entity	Typically, a shared responsibility between network provider, solution provider & customer	Increases as # of network members increase
Performance	Maintained & controlled by central entity	Increases as network/hardware resources scale up and out	Decreases as # of network members increase
Example	ERP system	Cloud computing	Blockchain

figure1**:**comparison of centralized, decentralized and ,distributed etc.

Analytic Processing

Businesses and organizations of all sizes rely significantly on data t o make choices in today's datadriven environment.However, raw d ata can be overwhelming and challenging to understand, especially when working with large datasets.Data visualization can help with this.Data visualization aids decisionmakers in seeing patterns, tren ds, and insights that may not be immediately obvious from raw dat a by converting complex data into simple visual representations.An innovative way to accomplish this is by developing a data visualiz ation app.Users may engage with data in realtime, personalize repr esentations, and acquire insights quickly and effectively using an a pp created exclusively for data visualization. With the growing need for data analysis in various industries, an app for data visualization can save time, improve accuracy, and ultimately help organizations make better-informed decisions. In addition to improving decision-making, an app for data visualization can also promote collaboration and communication within an organization. With the ability to share visualizations and insights in real-time, team members can work together more effectively and make data-driven decisions collectively.

Moreover, an app for data visualization can democratize data access, making it more accessible to stakeholders at all levels of an organization. EMC explains that the MapReduce paradigm involves adding more resources or computers, rather than increasing the capacity of a single computer or its processing power. This approach emphasizes scaling out as opposed toscaling up. The MapReduce paradigm is founded on the principle of distributing a task across multiple computers or resources, rather than scaling up the power or storage capacity of a single computer. This approach, also known as scaling out, has the advantage of reducing the time needed to complete a task. MapReduce breaks a computational task into several stages, executing each stage in parallel. In the first phase of a MapReduce job, the input values are mapped to a set of key/value pairs, which are then assigned to the relevant smaller computational tasks. This mapping process makes it possible to convert unstructured data such as text into structured key/value pairs. The Reduce function collects and combines the output of the Map function, merging values that share the same key value to provide the result of the computational task.

In addition to the traditional advanced dataanalytics techniques like association rules, clustering, classification, decision trees, and regression, there are several other analyses that have become common in big data. One such analysis is sentiment analysis, which has gained significant importance due to the exponential growth of online opinion data from sources like blogs, product reviews, forums, and social media platforms like Twitter and Facebook. Sentiment analysis involves analyzing subjective text patterns to understand the emotions conveyed. This is done through text mining to identify opinions and attitudes towards specific topics. It helps to classify viewpoints as positive or negative, making it a valuable tool for businesses and organizations to gauge public sentimenttowards their products or services.

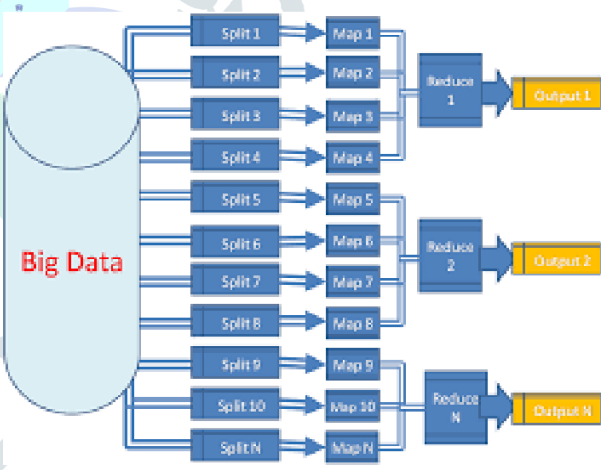

figure 2: Analytic processing

Decision Making

In the ever-evolving world of technology, the amountof data being generated and exchanged by organizations has grown significantly. In order to make informed decisions in a timely manner, simply having access to large volumes of data is no longer enough. Consequently, specialized tools and techniques are required to process and analyze the vast amounts of data generated every day. As a result, there has been a growing need for new methods and architectures specifically designed for big data analytics. One such framework is the Big-Data, Analytics, and Decisions (B-DAD) framework, which integrates bigdata analytics tools and methods into the decision- making process. By mapping various big data storage, management, and processing tools, analytics methods, and visualization and evaluation tools to different phases of the decision-making process, the B-DAD

framework enables organizations to leverage the benefits of big data analytic.

To fully take advantage of big data analytics, organizations need to consider the changes in three main areas: big data storage and architecture, data and analytics processing, and the application of big data analysis for knowledge discovery and informed decision making. Additionally, MapReduce, which involves breaking down complex tasks into smaller tasks and executing them concurrently to minimize the time required to complete the task, is an important concept in big data processing.

Application Component

One of the distinctive characteristics of Android is its ability to allow an application to use component elements of another application, provided it has the necessary permissions. To enable this feature, the Android system needs to launch the application and instantiate the Java objects that are requested whenever any part of the application is needed. Unlike traditional operating systems, there is no singular point of entry for the Android application. Instead, an activity is used torepresent a single screen with a user interface.

The activities within an application collaborate to create a seamless user interface, but they operate autonomously. This allows any external application to initiate any one of these activities. To implement an activity, it is created as a subclass of Activity. Unlike other operating systems, Android does not have a single entrypoint to access an application. Instead, any part of an application can be requested, and the Android system launches the application and creates therequired Java objects.

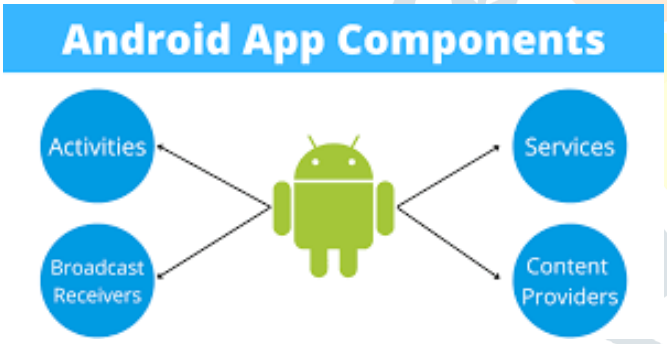

figure 3:Components of android app

The application framework provides a standardized structure for programs within a particular domain, serving as a reusable component that establishes thearchitecture of applications through a set of abstract classes and the collaboration of their instances. Google's Android operating system is built on the Linux kernel and is open source. Mobile phone operating systems face constraints such as limited hardware, storage space, power consumption, and mobility that differentiate them from PC operating systems. Consequently, application development on mobile phone operating systems exhibits distinct characteristics compared to PC applications.

Defining AI in Analytics

AI plays a crucial role in data analytics by providing advanced algorithms and techniques to analyze large and complex data sets. With the help of machine learning and deep learning, AI

can make predictions and identify patterns in data that would be difficult for humans to recognize.AI-powered analytics can also automate the process of data analysis and decision-making, leading to increased efficiency andaccuracy. Overall, AI is a valuable tool in unlocking the insights and value hidden within big data.

Combined values of Data analytics and AI

Authenticity

The implementation of blockchain technology can aid in providing transparency and accountability in the utilization of data by AI systems, thus resolving the issue of explain ability. This enhances the level ofconfidence in the data and the decision-making process. The practice of using data to improve business decision-making has been around since the beginning of modern computing. Predictive modeling is now widely used to forecast future demands and trends, enabling organizations to efficiently manage inventory, procurement, and other operations.

To create a mass visualization app, it is important to understand the role of data analytics in the process. Data analytics provides insights into the patterns, trends, and correlations within large datasets, allowing for meaningful interpretations and visualizations. In addition, the Android platform provides a robust framework for developing and deploying mobile applications with powerful visualization capabilities. By leveraging the features and tools provided by Android, developers can create visually compelling and interactive applications that engage users and convey complex information in an intuitive way. The combination of data analytics and Android technology has the potential to revolutionize the way we understand andinteract with data, making it more accessible and meaningful to a wider audience By leveraging blockchain, it is possible to improve the integrity of AI recommendations. This is because blockchain provides an audit trail that can ensure the authenticity of data and models.

AI thrives on knowledge, which is gleaned from data that provides insights into global events and occurrences. This constant flow of information helps AI to continually enhance its capabilities. Conversely, blockchain technology is designed to securely store data through encryption on a distributed ledger. It empowers the creation of impregnable databases that can only be accessed by authorized parties. Given the sensitivity of data like medical and financial information, it is imprudent to entrust them to a single company or its algorithms. By storing such data on a blockchain, it can be accessed by AI with the requisite permissions and safeguards in place. This approach offers enormous potential for personalized recommendations while also ensuringthat our sensitive data is safely and securely stored.

Productivity

The ability of AI to process and interpret vast amounts of data at a rapid pace can greatly enhance the intelligence of blockchain-based business networks. With blockchain's capacity to provide access to a large pool of data both internally and externally, AI can expand its capacity to provide practical insights, regulate data usage, share models, and foster a dependable and transparent data ecosystem. This integration between AI and blockchain can pave the way for better data management and create a more efficient and reliable system.

Automation

The convergence of AI, automation, and blockchain can revolutionize business processes that involve multiple stakeholders. This convergence can eliminate obstacles, add speed, and increase

efficiency.

For instance, smart contracts executed on a blockchain with embedded AI models can recommend recalling expired products, trigger transactions based on pre-set events or thresholds, such as re-orders, payments, or stock purchases, help resolve disputes, and choose the most sustainable shippingoption.

Need to create a data visualization android app ?

The advantages of developing an Android app for data visualization are numerous. First of all, it enables users to quickly access complex data in a visual format and interact with it, making it simpler to comprehend and evaluate. Additionally, an Android app can provide a streamlined and customized user experience that is catered to the unique requirements of the intended user base. The Android platform's powerful graphics and touch input, for example, can be used by developers to build extremely engaging and dynamic data visualization applications that support users in making wise decisions. Last but not least, an Android app can offer real-time access to data, enabling users to keep up with the most recent news and trends. This can be particularly useful in industries such as finance, where timely and accurate data can be critical for making informed decisions.

Accurate and timely data are crucial in various industries, such as banking, for informed decision-making. In consumer-facing industries, like retail, blockchain technology can gather customer data that can be utilized to build marketing automation through the use of artificial intelligence (AI).

How AI Can be added to Data science

Artificial Intelligence (AI) can be added to data science in a number of ways:

1. **Machine Learning (ML)**: Machine learning is a subfield of AI that involves teaching machines to learn from data without being explicitly programmed. ML is widely used in data science for predictive modeling, clustering, and classification.

2. **Natural Language Processing (NLP)**: NLP is another subfield of AI that deals with the interaction between computers and human languages. NLP is used in data science to extract insights from unstructured data such as social media feeds, customer reviews, and email exchanges.

3. **Deep Learning**: Deep learning is a subset of machine learning that uses artificial neural networks to learn from data. Deep learning has been used to build models for image and speech recognition, natural language processing, and recommendation systems

4. **AI-Powered Analytics**: AI-powered analytics involves using AI and ML algorithms to analyze large amounts of data quickly and accurately. This can help data scientists to identify patterns and trends that may be difficult to detect using traditionalstatistical methods.

Organizations can enhance their capacity to derive value from data, make better decisions, and provide better commercial results by incorporating AI into data science.

Data Monetization

The convergence of these two technologies also holds promise for revolutionizing the validation of information. Big corporations like Facebook and Google derive significant profits from monetizing the data they collect. However, allowing others to dictate how this data is sold poses a major threat, effectively weaponizing our data against us. By leveraging blockchain technology, we can now cryptographically safeguard our data anddetermine how it should be utilized in line withour own preferences. This empowers us to legitimize our data individually, without riskingthe compromise of our personal information. This is an essential step in countering biased algorithms and creating more diverse data sets, a necessity forAI programs that rely on our data.

Trusting Analytical Decision Making

By leveraging analytics technology, AI decision- making processes are underpinned by immutable records of all data, variables, and procedures utilized, rendering the entire process more amenable to auditing. With the right programming, all stages - from data input to final outcomes - can be monitored with complete assurance that no unauthorized modifications haveoccurred. This instills a sense of trust in the veracity of AI-driven conclusions, a critical prerequisite for users and organizations to embrace and employ AI applications. It is imperative for individuals and enterprises to comprehend the inner workings of AI and the information upon which it bases its decisions.

Conclusion

After conducting extensive research, we have delved into the cutting-edge field of big data, which has sparked immense interest owing to its unparalleled potential and benefits. In the current age of information, copious amounts of high-velocity data are generated on a daily basis, carrying within them crucial details and elusive patterns of valuable insights that ought to be extracted and harnessed. As such, our focus lies in developing an application that adheres to the foundational principles of the data analytics cycle, while remaining accessible and cost-effective for users of all levels of expertise.

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