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Application of AI in Cloud Computing

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ABSTRACT

AI in cloud computing is a growing field that focuses on creating intelligent solutions for many industries. AI cloud computing enables companies to create dynamic applications by providing machine learning and analytics tools to perform advanced tasks. AI cloud computing focuses on creating these intelligent applications to help businesses use big data, provide systems for advanced operations, and predict and forecast future growth. Do it. This leads to good profitability and long-term operation of the business. This white paper examines the evolution of cloud computing, its benefits for small and large businesses, the latest business trends, use cases, and future predictions.

Keywords: AI, Cloud, Big Data, Saas, Paas, Iaas.

I. INTRODUCTION

The main purpose of developing skills quickly is to make it better for other businesses. AI-as-a-service products based on cloud computing also best reflect this development goal. To maintain a significant position in the competitive market, more and more AI companies are trying to combine AI with other applications, products, services, and more types of big data analysis. Companies are always turning to AI technology to create the easiest and most popular way to use AI products such as cloud services.

CLOUD COMPUTING

Cloud computing is a form of distributed computing. This means that a large data processing program is divided into several smaller programs that are processed and analyzed by various server machines from the Internet "cloud." The results of these applications are returned to the user. Cloud service providers combine a wide range of computing, storage, and networking services and provide these resources to users using virtualization and other technologies. These resources are allocated based on demand and paid for according to usage. With the continuous development of air technology, its application has become more and more extensive. In the early days of cloud computing, only distributed computing solved the problem of dividing work and aggregating content. Therefore, cloud computing is also called grid computing. This technology can process tens of thousands of files in a short time (seconds) and achieve high-performance network services..

II. AI IN CLOUD

AI has become a part of our lives. GPS tracking services, real-time speech recognition, digital assistants, chatbots, and automation are examples of AI. But the application world goes far beyond Siri and Amazon Alexa. AI is combined with cloud computing to provide advanced decision-making through analytics solutions, data mining, and processing applications, cloud security automation, overall cost reduction, and intelligence-driven solutions. As big data gains momentum, the need for integration with flexibility, security, and performance also increases. In the future, AI will play a key role in improving big data, customer experience, and security. This white paper explores how AI will shape the future of organizations, both small and large, through advances in AI technology and its capabilities.

III. CHARACTERSTICS

Ultra-large-scale cloud computing provides many benefits to users. These resources do not appear out of nowhere. Therefore, we need a place to store these resources. Take Google for example. It already has more than 1 million servers supporting its "cloud". IT giants like Amazon, Microsoft, and IBM also have hundreds of thousands of servers to support their clouds. Enterprise-level private clouds usually have hundreds or thousands of servers. Cloud computing allows users to enjoy various services on their terminal devices anytime and anywhere. All requests are received from the resources of the cloud platform. These services run on some parts of the platform. This eliminates the need for users to know where their services are running. So we can say that all cloud services are transparent to users. The system is on-site (usually provided by a third party) and accessible via the Internet, allowing users to connect from anywhere. Hardware server. Servers are supposed to serve web pages on the World Wide Web. So when someone visits your website from a computer via a browser (user), a request is sent to the server and the page is returned to the client. However, purchasing these servers is expensive and inefficient. For example, if you only need the power of 1.5 servers, you still need to buy 2 servers. The cost is too high for most people who get cheap electricity from cloud services. Security, trust, and crime prevention technologies such as multiple copies of files and migration services. Provide services to users.

CLOUD SERVICES

In the past, if you wanted to create a web application and send it to the web, you had to buy a hardware server. Servers are needed to run web pages on the World Wide Web, so when someone visits your website from their computer using a browser (user), a request can be sent to your server and the web page can be sent back to the client. However, buying these servers is expensive and inconvenient because if you only need the computing power of one and a half servers, you still have to buy two servers. These costs are now prohibitively expensive for most people who have access to affordable electricity through cloud services.

(SaaS) is a fancy word to describe how low-cost these services are, or in other words, how much control you have over the servers, storage, and documents. IaaS): In this model, companies rent the necessary servers and storage from cloud providers. They then use cloud computing to build their applications.

IaaS is similar to a company renting a plot of land where they can build anything they want, but they have to provide the equipment and materials. IaaS providers include Google Compute Engine and OpenStack. Instead, they pay for what they need to build their applications.

PaaS providers provide everything needed to build applications over the Internet, including development tools, infrastructure, and functionality. PaaS can be likened to renting all the tools and equipment used to build a building, rather than renting the building itself. Examples of PaaS include Heroku and Microsoft

Azure. SaaS is similar to renting: the landlord manages the building, but the tenant can often use it as if they owned it. Examples of SaaS applications include Salesforce and Slack. Imagine renting a small house at one time: Leta□□s say the tenant only pays for the dining room when they eat, the bedroom when they sleep, the living room when they watch TV, and when those rooms arena□□t being used. They Dona□□t pay rent for those rooms.

CLOUD ARCHITECTURE

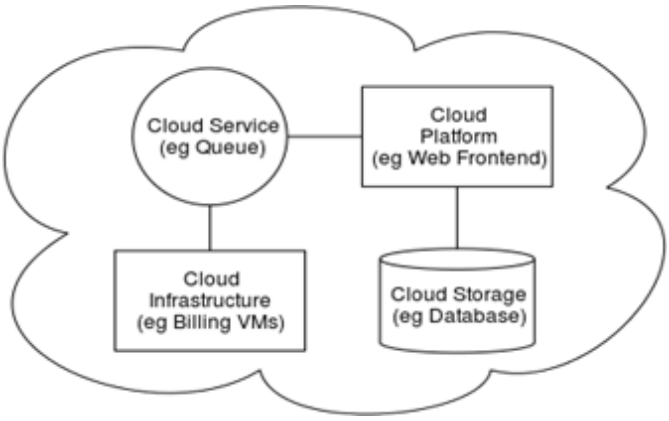

Fig: Cloud Architecture

Cloud architecture is the system architecture of the software systems involved in providing cloud computing and typically includes multiple cloud components communicating with application programming interfaces. Typically web services and his 3-tier architecture. This is similar to the UNIX philosophy of having multiple programs, each doing one thing well and working together through a universal interface.

Complexity is controlled and the resulting system is easier to manage than a monolithic system. The two most significant components of cloud computing architecture are known as the front end and the back end. The front end is the part seen by the client, i.e. the computer user. This includes the client's network (or computer) and the applications used to access the cloud via a user interface such as a web browser. The back end of the cloud computing architecture is the "cloud" itself, comprising various computers, servers and data storage devices.

IV. CHALLENGES IN CLOUD COMPUTING

1) Network connectivity: Cloud-based machine learning applications require network connectivity, which can also affect the working process of the machine learning algorithm. It also takes time for data to reach the cloud for further processing. There is a large time delay in data being delivered to the cloud, which affects the timely intervention and rapid work required to resolve issues. This is private information. Data collected by smart sensors captures customer and delivery information before it is sent and processed. The absence of security protocols in web and mobile cloud computing will allow information to be stolen and will lead to additional security problems.
2) Identity and Access Protection· Key Management· Virtual Machine Security Among the important security issues in the cloud, information security and fairness are considered the most difficult problems that will prevent the use of cloud computing. In fact, access control and key management are issues related to information security. Information security in the cloud is related to data confidentiality, integrity, availability and traceability (CIAT), and these requirements create serious problems for cloud computing.

V. CONCLUSION

In this paper we discussed the basics of Cloud Computing, Characteristics, Advantages and Disadvantages of Computing. These are very useful to understand cloud computing. Besides the above topics we discussed some more topics Cloud Architecture, Cloud Services. Cloud Architecture of Cloud is used to understand the working procedure of cloud, how it is used for organisations and how the cloud is used to store, retrieve and modify the data without physical equipment. We hope this paper will give efficient

information about what the readers want about Cloud Computing and be very useful to researchers.

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