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BSCSNS-2A

Contribution in Application Development | Reporting

Literature reviews and supporting information supporting the group position.

a. Technology observations

    i. Adoption of cloud computing in the Philippines

        The Philippine government has embraced cloud computing through the GovCloud initiative, which was launched by the DOST-ICT Office in 2013. GovCloud provides government agencies with cloud infrastructure access as part of the country's digital transformation efforts. With a cloud first policy in place, the government is actively encouraging agencies to adopt cloud solutions. The DICT is compiling a list of accredited cloud service providers (CSPs) in order to expand and meet the public sector's cloud service requirements. This new version of GovCloud combines accredited CSPs and DICT on-premise resources, allowing government agencies to access cloud services tailored to their specific requirements. The goal of cloud adoption is to improve service delivery, lower costs, and boost productivity.

    ii. Government policies and regulations regarding cloud adoption

Cloud First Policy

1. Cloud computing has brought a new and more efficient means of managing government information technology resources. It is hereby declared the policy of the government to adopt a "cloud first" approach and for government departments and agencies to

consider cloud computing solutions as a primary part of their infrastructure planning and procurement.

2. All government agencies shall adopt cloud computing as the preferred ICT deployment strategy for their own administrative use and delivery of government online services, except:

   a. When it can be shown that an alternative ICT deployment strategy meets special requirements of a government agency; and

   b. When it can be shown that an alternative ICT deployment strategy is more cost effective from a Total Cost of Ownership (TCO) perspective and demonstrates at least the same level of security assurance that a cloud computing deployment offers.

iii. Global trends and adoption rates

1. Enterprise Adoption: Cloud computing has been adopted by large enterprises such as Netflix, Airbnb, and Spotify to support their high-volume, scalable operations. These businesses rely on major cloud infrastructure providers such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP).

2. AI and Machine Learning (ML): Cloud platforms such as AWS, Azure, and GCP provide extensive AI and ML services, allowing organizations to develop and deploy sophisticated models without significant hardware investments. Amazon SageMaker, Google Cloud AI, and Microsoft Azure Machine Learning are a few examples.

3. Startups and Innovation: By providing low-cost infrastructure and development platforms, cloud computing has fueled the rise of startups and innovation. Dropbox and GitHub began as cloud-based startups and have grown into successful enterprises.

4. Gaming Industry: Cloud gaming platforms such as Google Stadia and Microsoft xCloud make use of cloud infrastructure to allow users to stream and play high-quality games without the need for dedicated gaming hardware.

b. Technology Literature Reviews
    A. The Role of Cloud Computing in Artificial Intelligence

        The feedback provides high praise for the article on the role of cloud computing in artificial intelligence. The reader found the insights to be enjoyable and appreciated the clear explanation of concepts. The author's ability to highlight the advantages of using the cloud for AI applications, supported by relevant examples and case studies, was also commended. The feedback encourages the author to continue sharing valuable information on the intersection of AI and cloud computing, indicating their appreciation for the article.

    B. Building toward more autonomous and proactive cloud technologies with Artificial Intelligence

        This article effectively bridges the gap between AI and cloud technologies, offering valuable insights for both technical experts and those new to the field. It is evident that the author possesses a deep understanding of the subject matter, and their expertise shines through in every paragraph.

Summary

In this comprehensive set of entries, we discover the intersection of cloud computing, autonomous AI, and their effect on distinctive industries. The article starts with an advent to cloud computing, highlighting its function in delivering on-demand computing resources and putting off the need to control agencies' personal infrastructure. Autonomous computing, with a focal point on self-handling and self-optimizing structures, changed into additionally introduced.

The aim of the subject is to present the advantages and disadvantages of cloud computing and self-sufficient computing inside the subject of AI, give sensible case studies, and look at the benefits of scalability and earnings. The scope of the subject includes the integration of these technologies, their transformative ability as well as the

related challenges and moral issues. The article explores the uses and capabilities of cloud computing and self-sustaining AI, highlighting their position in powering applications which includes herbal language processing, computer vision, and voice recognition. It explores distinctive deployment fashions (public, private, hybrid) and kinds of cloud computing (IaaS, PaaS, SaaS) and their respective examples. The positive aspects of cloud computing encompass cost savings, accelerated productiveness, superior analytics, and progressed statistics management. However, challenges along with privateness and facts connectivity are also addressed.

Autonomous computing is then tested, highlighting self-configuring, self-optimizing, self-healing, self-protective, and self-aware features. The benefits of independent computing encompass accelerated performance, improved decision-making, scalability, and decreased mistakes. However, demanding situations related to records fine, device reliability, security, privacy, protection, and bias are identified.

Conclusions:

A. Cloud computing and autonomous AI technologies have the potential to revolutionize industries by enabling efficient and scalable computing resources, advanced analytics, and real-time data processing.

B. The integration of cloud computing and autonomous AI offers numerous benefits such as cost savings, increased productivity, enhanced decision-making, and improved system reliability.

C. Cloud computing provides different deployment models (public, private, hybrid) and types (IaaS, PaaS, SaaS), allowing organizations to choose the most suitable approach based on their specific requirements.

D. Autonomic computing enhances system performance by automating tasks such as configuration, optimization, healing, protection, and self-awareness, leading to increased efficiency and reduced errors.

E. Despite the advantages, challenges related to data privacy, connectivity, data quality, system reliability, safety, security, and biases must be addressed to ensure the successful implementation and adoption of these technologies.

Recommendations:

A. Organizations should explore the potential of cloud computing and autonomous AI in their respective industries to drive innovation, improve efficiency, and gain a competitive edge.

B. Enterprises should carefully consider the deployment models (public, private, hybrid) and types of cloud computing (IaaS, PaaS, SaaS) to align with their business goals, security requirements, and data privacy concerns.

C. It is crucial to invest in robust data management practices, ensuring high-quality, diverse, and accessible data for reliable autonomous AI systems.

D. Collaboration between industry experts, policymakers, and researchers is necessary to establish guidelines, standards, and regulations to address concerns related to privacy, security, transparency, and biases in AI systems.

E. Continued research and knowledge-sharing on the intersection of cloud computing and autonomous AI will contribute to the advancement and adoption of these technologies.