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AI Cloud Computing in Education

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Abstract: ***Cloud AI is a growing field that focuses on creating intelligent solutions countless industries. AI Cloud Computing provides machine learning and statistical tools that can work advanced calculations that companies can use to build dynamic applications. AI Cloud Computing focuses create smart applications, help companies use Big Data, implement advanced application algorithms functionality, as well as predicting and anticipating future growth, which greatly contributes to the profitability and Longevity. This article examines the evolution of artificial intelligence in cloud services and its benefits. There is no denying that AI and cloud computing have enhanced innumerable lives. People use digital assistants like Siri, Google Home, and Amazon's Alexa on a daily basis. These assistants enable simple spoken commands that, among other things, can buy an item, change the temperature in a smart home, or play music on a linked speaker. AI approaches are used on current cloud computing platforms to add value. To give users more functionality, SaaS (Software-as-a-Service) providers integrate AI technologies into larger software packages.***

Keywords: ***Cloud Computing, Artificial Intelligence, Machine Learning, Internet of Things, Automated ML, Data Management, Deep Learning.***

1. INTRODUCTION

Cloud computing provides advanced computing resources over the Internet to help education system grows. Artificial intelligence is a means of using tools of cloud computing for modifying its uses. Cloud computing seamlessly combines ML capabilities with advanced cloud-based computing environments. This merger brought us technologies like Google , the smart thermostat etc and the ability to listen to topic with voice command. AI Cloud Computing systems are able to increase flexibility and efficiency strategic insights. For example, SAAS developers can use artificial intelligence tools to provide users with greater flexibility.

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Artificial intelligence has already ingrained itself into our daily lives. Artificial intelligence is commonly used in chatbots, GPS tracking services, fast speech recognition, digital assistants, and autocorrect features, but its applications go far beyond Siri and Amazon Alexa. Analytics solutions, data mining and processing apps, cloud security automation, and overall lower costs and improved decision-making are all made possible by AI when combined with cloud computing. Integrated systems are becoming more and more necessary as Big Data gathers traction in order to provide flexibility, security, and efficiency. In terms of Big Data management, customer experience, and increased security, organisations will soon heavily depend on AI.

2. Artificial Intelligence

To define and comprehend artificial intelligence is challenging task. As a result, two definitions that are complementary to it are given below:
A body of knowledge, including theories and methods, whose aim is to replicate human cognition in machines. For example, current research aims to enable the delegation of complicated activities traditionally performed by humans to machines. (Council of Europe 2021)

Machine-based systems that are capable of making predictions, suggestions, or judgements that have an impact on real-world or virtual environments in response to a set of human-defined objectives.AI systems engage in direct or indirect interactions with humans and our environment. They frequently give the impression of being autonomous and are able to change their behaviour as a result of learning about the environment. (UNICEF 2021: 16)

2.1Artifificial Intelligence and Education (AI&ED):

A few examples of the connections between AI and education include "learning with AI," "learning about AI," and "preparing for AI." Another name for AI-based education is "artificial intelligence for education."

2.2Artificial Intelligence in Education (AIED):

In1980s,an academic discipline that focuses on the study of AI learning aids (also known as learning with AI).

3. Users of AI in Education:

Researchers routinely suggest answers to fundamental problems in education—such as a shortage of well-trained teachers, learner's underachievement, and the rising performance gap between rich and poor students—but these remedies are rarely well-supported by solid data. This, however, highlights a number of important considerations that must be made, such as the goals of utilising AI in education, where it is used, by whom (individuals, institutions, or industry), how it is operationalized, at what levels (from the individual learner to entire classrooms, collaborative networks, and national and transnational levels), how it operates, and so on.

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3.1 Learning with AI:

- Learning with AI refers to the use of AI-powered teaching and learning tools, such as chatbots, intelligent tutoring systems, dialogue-based tutoring systems, exploratory learning environments, automatic writing evaluation, and learning network orchestrators, to directly assist students;
- The application of AI to support administrative systems (such as scheduling, learning management, and hiring);
- The direct application of learning with AI is to support teachers (although there are few instances, aside from the intelligent choice of learning resources)

3.2 Learner-supporting AI:

Over the past three decades, the majority of AIED research has been concentrated on learner-supporting AI, which by definition aims to automate teacher functions in order to empower learners to learn independently of teachers or to have access to their own virtual personal tutor and benefit from the Bloom 2-Sigma effect. However, much of technology takes a pretty archaic pedagogical stance and all too frequently focuses on automating ineffective teaching methods rather than innovation (for instance, enabling exams rather than coming up with creative ways to assess and accredit learning).

3.3 Teacher-supporting AI:

The number of authors and government agencies have hoped that artificial intelligence (AI) will free up teachers' time, others have predicted that AI will eventually make teachers de facto redundant, or at the very least, change the nature of their job to that of classroom orchestrators or technology facilitators responsible for directing student's way of behaving and making sure that the technology is turned on. The truth is that, over the course of its more than 30 years, the majority of AIED research and development has concentrated on using AI to directly support learners with the goal of enhancing learning, typically by taking over (specifically, replacing) teacher functionalities, such as through AI-powered adaptive tutoring.

3.4 Institution-supporting AI:

A recent comprehensive assessment of the literature on AI applications in higher education found that over half (48%) of the included research looked at AI-support for institutional and administrative services. The use of AI to directly support elementary or secondary educational institutions, however, is not well supported by the facts.
Automating procedures connected to student admissions, simplifying contact with students, and allocating resources are the three main uses of AI in support of educational institutions.
The use of chatbots for 24/7 self-service and to facilitate communication with students is a focus of institution-supporting AI.

Cloud Computing

Cloud computing is the delivery of computer services via the Internet ("the cloud"), including servers, storage, databases, networking, software, analytics, and intelligence. It aims to provide rapid innovation, adaptable resources, and scale economies.

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AI and Cloud Computing

AI based Cloud computing offers an advanced way to store and process data while using machine learning tools constantly learn and improve operations.

Like many other scientific discoveries, artificial intelligence was first conceived as a science fiction idea. Following a variety of philosophical and mathematical theories that viewed human thought as the mechanical change of many symbols, the idea of AI gained traction.

Cloud computing helps businesses enhance productivity and data processing capabilities by providing cutting-edge computer resources over the internet. The method for utilising those resources to improve skills is AI. AI cloud computing effortlessly combines modern cloud-based computing environments with ML functionalities. By this combination, we now have access to Google Home, a smart thermostat, and the ability to voice-command our favourite music. Systems using Greater adaptability and cost effective strategic insights may be offered by AI in cloud computing. Developers of SAAS, for instance, can use AI techniques to provide their users with more options.

Benefits of AI Cloud Computing In Education

Cloud computing and AI work together to optimise data processing and storage, while machine learning technologies continuously learn and increase operational effectiveness.

- **Reduced overall costs:** With IAAS platforms or AI Cloud Computing, the education sector can take advantage of these technologies' cutting-edge capability without incurring the high expenditures associated with conventional data centres and technology.
- **Smart automation and improved productivity:** AI can handle complicated data processing and analysis activities without the need for human involvement, which lessens the stress on staff and frees up resources for more important duties.

Challenges of AI Cloud Computing

Network connectivity:

Applications for machine learning in the cloud need dependable network connectivity. Operations that use machine learning algorithms can be severely hampered by a lack of connectivity. The data must also travel a distance before it can be processed further on the cloud, which takes time. Sending data to the cloud has a significant time latency, which affects timely responses and the quick steps required for resolution.

Data privacy:

Data privacy is a significant issue with AI cloud computing. Before being sent and analysed, the data from diverse users is captured by AI sensors. Lack of security protocols in cloud computing for the web and mobile devices can result in data hacks that could cause additional security problems.

4. CONCLUSION

It's a booming time for AI. It is thriving and offering improved solutions for ingenious applications that are improving lives and boosting the economy. We can confidently predict, based on our research, that AI sensors will become clever enough to handle much more

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complicated data in the future, enabling dynamic applications that were once the stuff of science fiction. As more sectors rely on AI applications, ML algorithms and models will be developed by AI cloud computing to increase productivity. Last but not least, AI cloud computing will enable the future Metaverse era in which we communicate with one another in real time across the internet.

For humanity, artificial intelligence has been nothing short of a miracle. AI applications have helped humanity develop better apps that forecast, measure, and assist us in solving important and challenging problems, from their inception to their current expansion. The range of those applications has increased thanks to AI cloud computing, providing even more flexibility and agility necessary for long-term growth in any industry.

Education is changing, thanks to AI and cloud computing. AI and cloud computing help education make sense of enormous volumes of data, speed up difficult processes, and improve the delivery of goods and services.

Start considering how utilising cloud computing and AI together might benefit you as the market becomes more competitive by the hour.

- Yield fantastic client experiences
- Work more productively.
- Utilise your data and insights to the fullest extent.
  With AI and cloud computing at your disposal, there is no obstacle your education sector cannot surmount.

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