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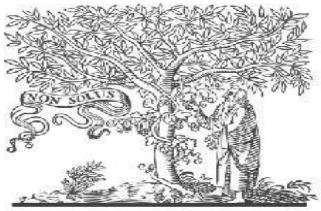

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Paper Authors **Dr. Rinkey,Dr. Raino Bhatia**

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AI Cloud Computing in Education

Dr. Rinkey, Asst Prof,AIMT,Ambala City

Dr. Raino Bhatia, Principal,Akal College of Education,Eternal University,H.P.

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, Big Data, Data Privacy, Web etc.

1.Introduction

Cloud computing provides advanced computing resources over the Internet to help education system grows. Artificial intelligence is a means of using these resources to improve functions. 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.

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

Artificial intelligence is notoriously challenging to define and understand. Accordingly, we offer two complementary definitions:
A set of sciences, theories and techniques whose purpose is to reproduce by a machinethe cognitive abilities of a human being. Current developments aim, for instance, to be able to entrust a machine with complex tasks previously delegated to a human.(Council of Europe 2021)1

Machine-based systems that can, given a set of human-defined objectives, make predictions, recommendations or decisions that inflfluence real or virtual environments.
AI systems interact with us and act on our environment, either directly or indirectly.Often, they appear to operate autonomously, and can adapt their behaviour by learning about the context. (UNICEF 2021: 16)2

2.1Artifificial Intelligence and Education (AI&ED):

What might be referred to as "learning with AI," "learning about AI," and "preparing for AI" are just a few of the linkages between AI and education that exist. AI-based education has also been referred to as "artificial intelligence for education."3

2.2Artificial Intelligence in Education (AIED):

An academic field of enquiry, established in the 1980s, that primarily researches AI tools to support learning (i.e. learning with AI).

3. Users of AI in Education:

The lack of qualified teachers, student underachievement, and the widening achievement gap between rich and poor students are just a few of the fundamental issues in education that are frequently cited as solutions by researchers, though infrequently supported by strong evidence. However, this calls attention to a number of issues that need to be taken into account, including the objectives of using AI in education, where it is used, by whom (individuals, institutions, or industry), how it is operationalzed, at what levels (from the individual learner to entire classrooms, collaborative networks, and national and transnational levels), how it functions, and so on.

3.1Learning with AI:

The use of tools powered by AI in teaching and learning is known as learning with AI and includes:

- The application of artificial intelligence (AI) to directly assist learners, including chatbots, intelligent tutoring systems, dialogue-based tutoring systems, exploratory learning environments, automatic writing evaluation, and learning network orchestrators;
- The application of AI to support administrative systems (such as scheduling, learning management, and hiring);
- The direct use of AI to assist teachers (albeit there are few examples, with the exception of intelligent selection of learning resources).

3.2 Learner-supporting AI:

The majority of AIED research over the past three decades has been focused on learner-supporting AI, which by definition aims to automate teacher functions in order to enable learners to learn independently of teachers or to have access to their own artificial personal tutor and take advantage of 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:

While many authors and government ministries have expressed the hope that artificial intelligence (AI) will free up teachers' time, others have predicted that AI will eventually render 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 managing student behaviour 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:

Almost half (48%) of the included studies examined AI-support for administrative and institutional services, according to a recent systematic literature review of AI applications in higher education. However, there is little evidence that AI is used to directly support primary or secondary education institutions.
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.

4.Cloud Computing:

In order to provide quicker innovation, adaptable resources, and scale economies, cloud computing is the distribution of computer services over the Internet ("the cloud"), including servers, storage, databases, networking, software, analytics, and intelligence.

5. 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 AI in cloud computing can provide greater flexibility and efficiency for strategic insights. For instance, SAAS developers can leverage AI tools to give their users more options.

6. 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.

7. 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.

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 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 assist education in making sense of massive amounts of data, accelerating challenging procedures, and enhancing the provision 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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