Artificial Intelligence & Augmented Reality

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What Is Artificial Intelligence?

Artificial Intelligence is a method of making a computer, a computer-controlled robot, or a software think intelligently like the human mind. AI is accomplished by studying the patterns of the human brain and by analyzing the cognitive process. The outcome of these studies develops intelligent software and system.

A Brief History of Artificial Intelligence

- 1956 - John McCarthy coined the term 'artificial intelligence' and had the first AI conference.

- 1969 - Shakey was the first general-purpose mobile robot built. It is now able to do things with a purpose vs. just a list of instructions.

- 1997 - Supercomputer 'Deep Blue' was designed, and it defeated the world champion chess player in a match.

- 2002 - The first commercially successful robotic vacuum cleaner was created.

- 2005 - 2019 -Speech recognition, robotic process automation (RPA), a dancing robot, smart homes, and other innovations make their debut.

- 2020 - Baidu releases the LinearFold AI algorithm to medical and scientific and medical teams developing a vaccine during the early stages of the COVID-19 pandemic. The algorithm can predict the RNA sequence of the virus in only 27 seconds, which is 120 times faster than other methods.

Goals of Artificial Intelligence

- It helps you reduce the amount of time needed to perform specific tasks.
- Making it easier for humans to interact with machines.
- Facilitating human-computer interaction in a way that is more natural and efficient.
- Improving the accuracy and speed of medical diagnoses.
- Helping people learn new information more quickly.
- Enhancing communication between humans and machines.

Subfields of Artificial Intelligence

- Machine Learning
- Deep Learning
- Natural Language Processing
- Expert System
- Fuzzy Logic

AI IN EDUCATION

Artificial intelligence provides a secure solution to ensure the integrity of online test system assessments in a cost-effective and scalable manner. The use of AI can reduce or even eliminate the need for physical supervisors/inspectors and can make deployment far more scalable. And with AI-supported online supervision, such incidents are automatically highlighted. Warnings are often automated as well.

AI-POWERED REMOTE PROCTORING

As online proctoring generates a large quantity of image/audio/video streams, the same can also be analyzed automatically using AI-based algorithms. Products like UCanAssess and Smart Exam meet the demanding high stake exam criteria and remote proctoring services.

HOW DOES AI HELPS CONDUCT FAIR EXAMS?

- The AI Proctored assessment uses a combination of artificial intelligence and human proctors. Since a video of the candidate taking the test is recorded through a webcam, the AI is able to flag or report any suspicious movement or activity.

- An AI-assisted proctor is software that is often powered by artificial intelligence (AI), which keeps an eye on a candidate. It helps educational institutions by detecting voices, detecting another person apart from the examinee.

LEARNING THROUGH CHATBOTS

Chatbots are available 24x7 and help to resolve students' and potential student's doubts related to admission, fees, subjects, classes, teachers, etc. It helps students to solve queries at any time of the day. The Education chatbot works in a very effective and efficient manner. It presents a specific topic to the students in the form of text, images, videos, or a combination of these. After learning the topic, students take quizzes and submit the results to their teachers.

PERSONALISED LEARNING THROUGH RECOMMENDATIONS

AI helps students get personalised answers to relevant questions from teachers. It also helps educate students according to the issues and questions they face in class materials and online sessions. Students now have access to a larger system for interacting with professors.

AI can provide fast feedback and work directly with students, giving them all the equipment they need to study remotely.

EDUCATION WITHOUT BOUNDARIES

AI can now help manage education systems, including exams, beyond boundaries. AI is facilitating the learning of any course across the globe and at anytime and anywhere.

Many AI applications are being used within the framework of the education system to help students get educated through online courses and online exams and to help many schools and colleges acquire the right students around the world.

Virtual Reality

Virtual Reality, or VR, is the use of computer technology to create a simulated environment which can be explored in 360 degrees. Unlike traditional interfaces, VR places the user inside the virtual environment to give an immersive experience.

VR in the classroom

Virtual reality is an emerging technology in classrooms to supplement the teaching of a subject or topic to in order to 'feel' the content. Beyond engagement, VR allows students to explore, experience, and become immersed in virtual environments. There are two ways virtual reality can be used in the classroom: a student explores a virtual environment using a computer, keyboard, and mouse; or a student explores using some input device, e.g. controller, virtual reality headset.

Resources

- Google Expeditions
- Nearpod

Google Expeditions

- Google Expeditions is a free mobile app for iOs and Android.
- The app includes now over **500 FREE Expeditions** to explore in virtual reality
- Each Expedition comes with several panoramic scenes, curriculum connections, notes, and discussion questions to supplement curriculum.
- There are 2 modes on the app: Guide (teacher) & Explorer (student)
- The Guide launches an Expedition and the Explorers view it in 3D through their Google Cardboard viewers with device inside.
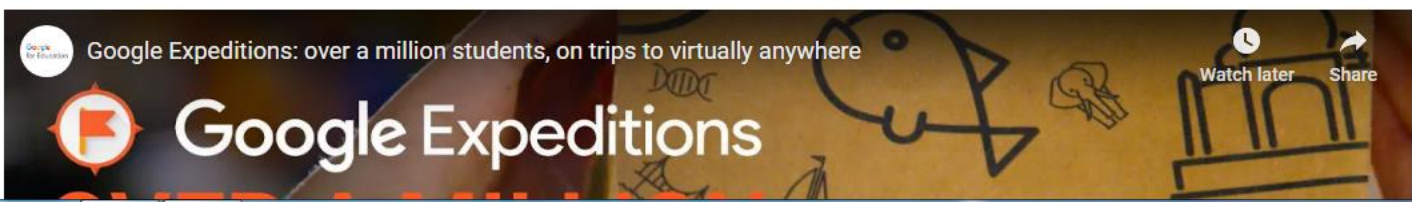
Nearpod

- Nearpod's VR field trips **allow you to take your students anywhere in the world, without leaving their seat**. Nearpod has a library of hundreds of thousands of VR images that you can add to your lesson. Best of all, students don't need a headset to join a lesson. Nearpod VR works on any device.

Augmented Reality

- Augmented Reality is a technology that enhances the real world by affixing layers of digital elements onto it. These elements include computer-generated graphics, sound or video effects, haptic feedback, or sensory projects.

AR vs VR

- **Augmented Reality (AR)** is often mistaken with **Virtual Reality (VR)**. The main difference between the two is that while Virtual Reality replaces the entire real environment with an artificial one, Augmented Reality is applied in a direct view of an existing real environment and adds elements like sounds, videos, or graphics onto it.

How does the AR technology work?

- When we use a device or application enabled with the AR technology the hardware of the device or application captures the object's picture, sharing it with the computer vision program which then processes the image to gather all relevant details like the measurements of the object, any other objects which are present on the same surface, while also calculating how far these other objects are from the main object in focus.

- By applying these insights the AR-enabled device will then develop and create virtual information that will serve as an overlay over the real object, giving a unique customer experience.

Augmented reality in education

- Math – Photomath , Mergecube
- Chemistry & Biology – ChemAR101
- History – 360cities,Timelooper
- Coding - Tynker

Thank u

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