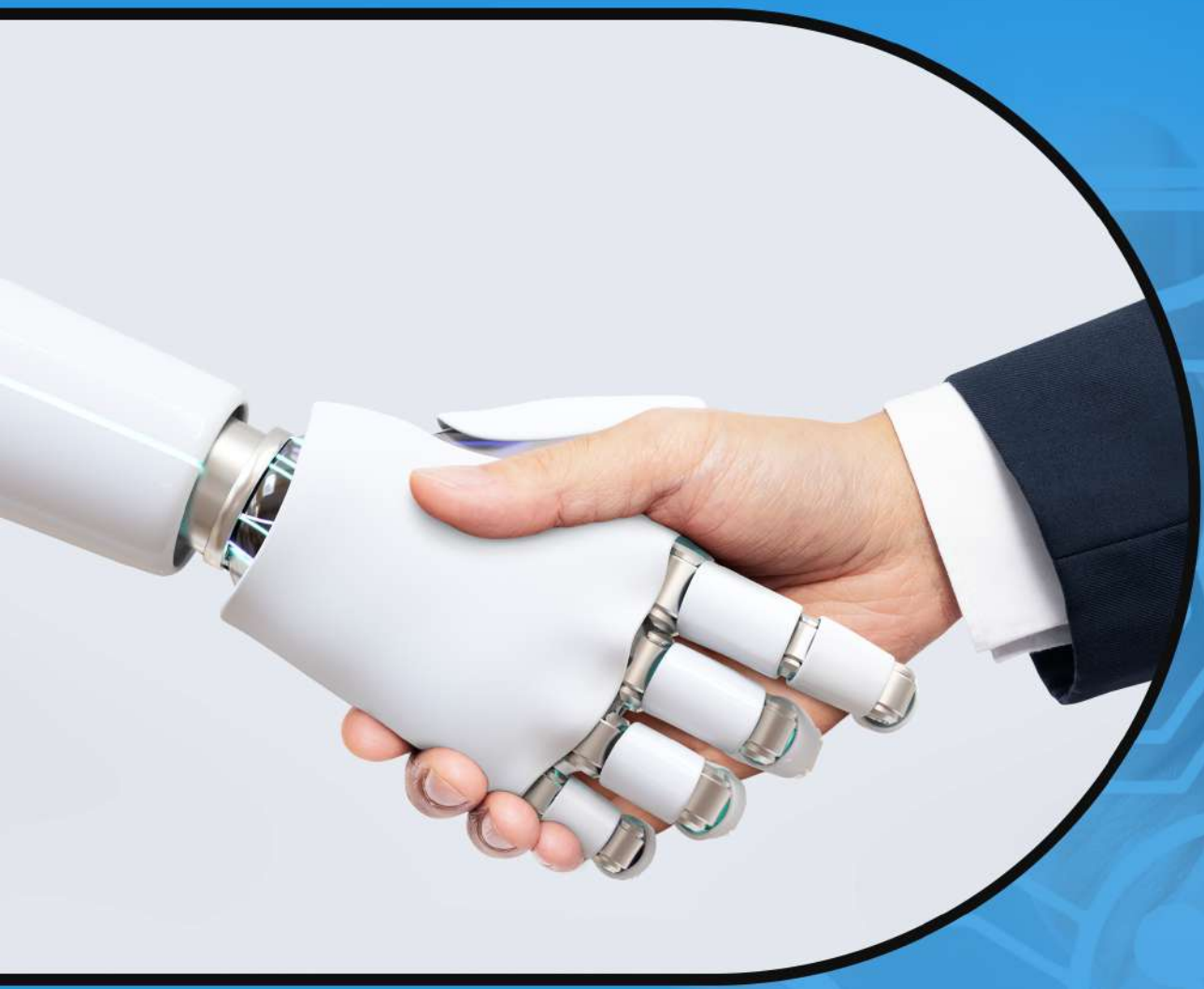
Shri Shankaracharya Institute of Professional Management & Technology , Raipur



COMPUTER SCIENCE AND ENGINEERING

PRESENTS

CYBER TRINITY

THE NEWSLETTER

VOLUME - 10

Keeping up with the pace of this technology, we require to be ahead of our time and adapt to new trends. As the world is evolving, technology is also growing and expanding at a faster pace, through the newsletter we are developing the students to improve their social, professional, and technical skills in a professional environment that's facilitative to their learning experience.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

OUR DEPARTMENT'S VALUES :-

VISION

To produce value-based quality Engineers with the knowledge of latest trends and research technologies to meet the developing needs of industry and society.

MISSION

1. To impart quality education in line quality teaching-learning process.
2. To provide a better environment to encourage and support research and development.
3. To strengthen linkage between industry-academia for overall improvement of students.

ARRAY OF CONTENT

SPORTS SAGA 2022

Congratulations to all the winners ! Whether you win a trophy or not , you are all winners. Over time, your active and continuous participation in sports and athletics will pay you rich rewards for fitness, well-being, and happiness. We were enlightened by the presence of our Chairman Nishant Tripathi Sir, Principal Alok Jain Sir, and members of the faculty of all departments and their active participation in every sport. We are happy to celebrate the success of our students at this year's sporting event Sports Saga. Congratulations to all of you for your excellent work ethic. However, more important than any difference will be your memories of that sports day celebration. Hope to see you all next year with the same dedication.

OUR FACULTY'S MESSAGE :-

DR. SUMAN KUMAR SWARNKAR

AI and ML are the fastest growing fields with intriguing job prospects for people who studied the topic at university and acquired the requisite abilities. Not only big MNCs but also medium and small businesses are embracing AI and applying machine learning to their products and solutions, from finance to security and defense to medical and manufacturing. As a result, the demand for data scientists and analysts, as well as machine learning experts and developers, has increased significantly. Lastly, congratulations to the batch of 2022 ! Your accomplishments are even more impressive as you carried them out during a worldwide pandemic! I wish the best to all graduates during this pivotal time in their lives.We all look forward to hearing about your future successes and accomplishments.

DR. CHAITALI BISWAS DUTTA

AI Deep fake takes its name from Deep learning. It's basically a technology that prevents cyber trickery done through faces, images, audio, and videos deception. Deep Learning is a fascinating development that has sparked an AI revolution in many aspects of our lives. It is the key technology behind recent spectacular developments in fields like biomedical signal analysis, image recognition, driverless cars, speech processing, and natural language processing. Now a-days deep fakes are created easily and also spread easily through social media platform. Deep fake quality has been improved, so the performance of detection method needs to be upgrade accordingly. This study is therefore beneficial for Artificial intelligence research community.

CAMPUS RECRUITMENT TRAINING

It gives us immense pleasure to introduce the most auspicious training program that is Campus Recruitment Training (CRT) which was conducted for batch (2019-23) by one of the most auspicious mentor Nachiket Joshi sir, in our institute. The main propaganda of this programme is "To ensure that our students can handle and know how to deal the further challenges with confidence, courage and passion" and to develop the student's technical knowledge with soft skills, professional communication and potential to its greatest height, for our students to compete and lead globally.

DEEP FAKES

Preface Ideology:

Deep fakes are the combination of two words- DEEP+FAKES which means creating a fake video or image using deep learning, a branch of Machine Learning (ML) that applies neural net simulation to massive data sets. Deep fakes are AI-generated synthetic video, image, or audio recordings of any person that impersonate the actual person and make them act or say anything they originally never did. In Deep fakes, Artificial Intelligence technology can replace faces, manipulate facial expressions, synthesize faces and synthesize speech.

Pros of DEEP FAKES:

·In video and audio production

It helps to change the audio or dialogues of any video or movies without the need of reshooting the whole video. In Moscow, deep fakes had been used by the researchers to bring the Mona Lisa back to life by creating a video where she moves her mouth, head and rolls her eyes.

· Time Savior

It saves a lot of time for actors as deep fakes can actually create entire scenes with actors, without bringing them for shooting for real.

· Financial savings

Deep fakes allow the cheap creation of everything from games, to advertisements, to videos. This technology allows individuals to enter these fields with less investment.

·In researches

Besides entertainment and training deep fakes have been also entered the medical field. Using this technology, "fake" scan brains has already been created which is based on actual data of the patient, which lately use to spot tumors in real images.

VOL-10
2022

DEEP FAKE

DEEP FAKES

Working Mechanism of DEEPFAKES:

Deep fake relies on artificial neural networks involving auto encoders that employ a face-swapping technique, which are computer systems that recognize patterns in data based on data input.

This program is fed with the vast amount of data which uses to learn to create its own new data, which is primarily based on Auto encoder (a family of self-supervised neural networks that copy its input) and sometimes on Generative Adversarial Networks (GAN), an approach to generative modelling from the input dataset that learns from input data to generate new data.

A deep fake image/video exploits two machine learning models. One model creates a copy of the data set of sample image/video, while the other tries to detect if the video is indeed a fraud. When the second model can no longer tell if the video is counterfeit, then the deep flake is probably believable enough as well as a human viewer.

JOB OPPORTUNITIES:

Data Scientist:

They provide a solution to an existing market problem by collecting the data then analysing and interpreting it. One must excel in core languages for this field.

Machine Learning Engineer:

The job role mainly demands excellence in framing algorithms and models to solve problems. One should have a strong math background and enjoy statistics.

Excelling in Python, R, Scala, and Java could boost the resume.

Research Scientist

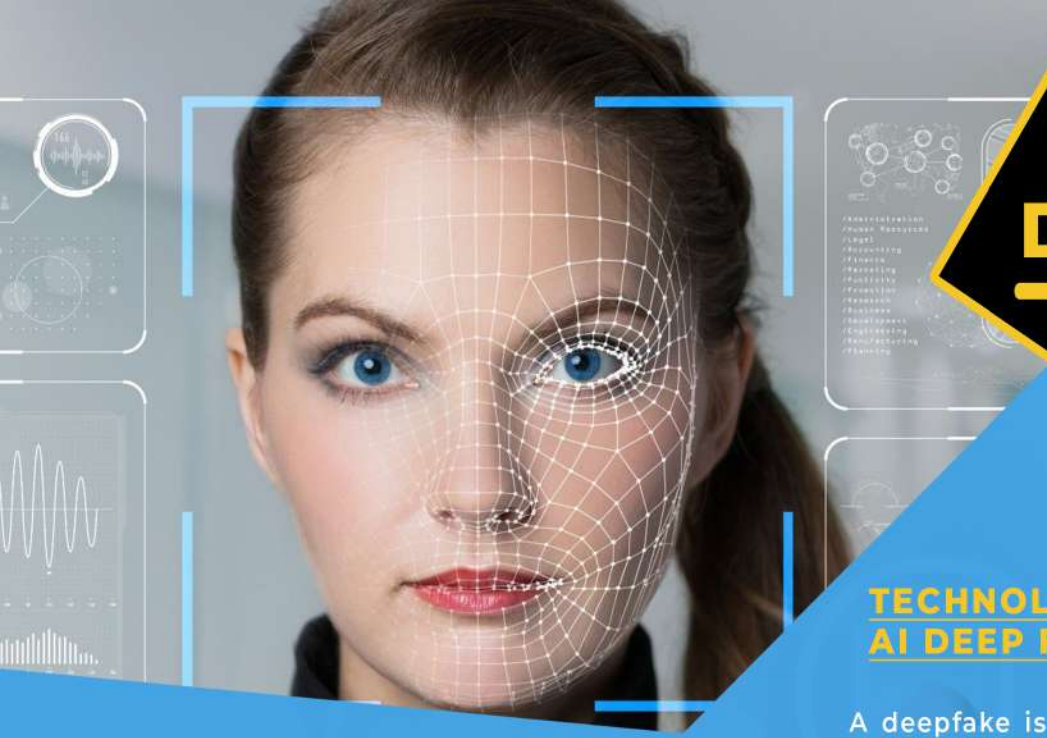
Someone who conducts and publishes scholarly research simultaneously develops systems to apply the knowledge gained from that research. One must have a Ph.D. or a Master's Degree in Mathematics or Informatics for this job.

Business Intelligence Engineer:

They work with other engineers and data scientists to apply the data collected in meaningful ways.

VOL-10
2022

DEEP FAKE



DEEP FAKES

TECHNOLOGIES USED IN AI DEEP FAKES:

A deepfake is a video or an audio clip that has been altered to change the concept of deep learning models. It often relies on a specific machine learning tool called a GAN. A GAN is also known as a Generative Adversarial Network.
Copious apps used for AI Deepfake:
Deepfacelab: It is a software compatible for PC's. It has multiple rich features inbuilt because of which it is a complex software to use.
ZAO deepfake app: This application has already gone viral in China for its ability to create deepfake videos.It allows you to put an image or face on a pre-existing video of a movie or a sitcom's scene.
Faceapp: It is one of the few early applications to popularise AI generated image editing on a smartphone.For instance the software can be used to see how the peson would look at any perticular age (Roughly not Accurate).
Some other major Deepfake apps/websites are: DeepArt, Myheritage, Reface, Deepfakes web Beta

How to Combat AI Deepfakes:

A capacity repair is to make use of the blockchain. Blockchain is a dispensed ledger that empowers you to save facts online without the requirement for centralized servers. Blockchain structures use a decentralized, immutable ledger to report facts in a manner that is constantly established and re-established with the aid of using each entity that makes use of it, making it almost not possible to alternate facts after it is been created. Besides, blockchains are hard towards a huge institution of safety threats that centralized facts shops are prone to. Distributed ledgers aren't but in reality, adept at placing away a variety of information, but they are perfect for placing away hashes and virtual signatures.

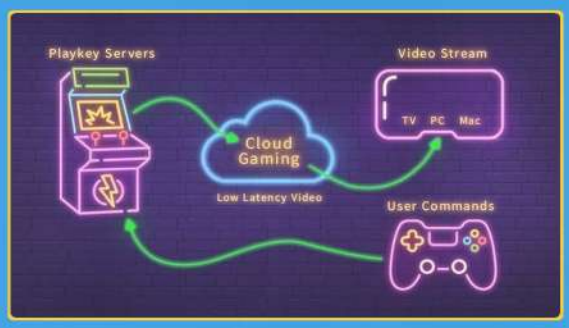
CYBER SECURITY

Cyber security remits to a series of technologies, software mapped out to procure data, devices, and networks and severs from damage, attack and unauthorized access. With increasing awareness over the cyber threats to procure sensitive information and data of any sector, public or private creates this field a significant career option. It offers various posts such as security auditor, cyber security -

- Specialist
- Analyst
- Architect
- Consultant.

It not only provides managerial benefits but also is followed by leadership training. Cyber security specialist aims at creative methods to attack protect and discover the malwares. It basically includes securing applications, endpoints, data, cloud, database and infrastructure.

CLOUD GAMING



Cloud gaming refers to the activity of playing video games that are run on remote enterprise and streamed locally to your device independent of the user's device specs.

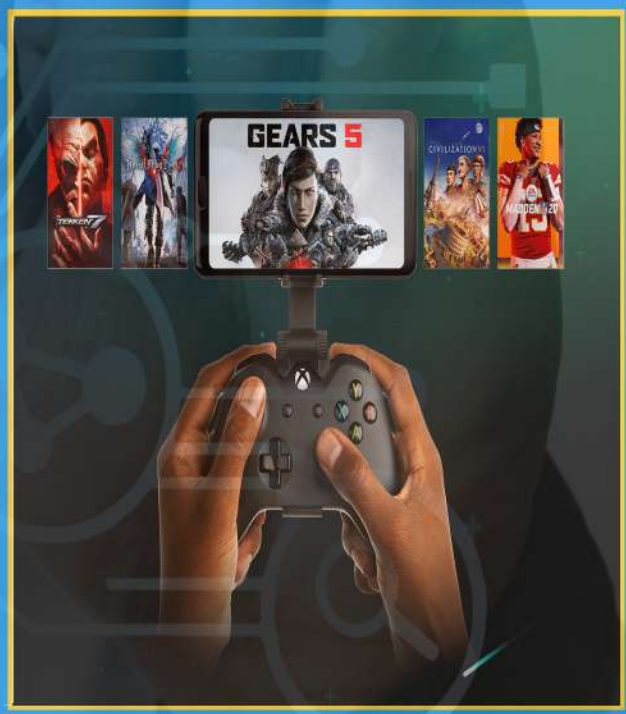
Traditionally, since the inception of computer and console gaming, users were required to own the rendering hardware to run the game, and have hardware that can handle the game requirements.

Eliminates the need for hardware using servers, allocating a share of resources like memory, CPU and GPU on server farms depending on the game requirements and the subscription model the user purchases.

First pioneered by OnLive, back in 2010. The current major platforms on the market are Nvidia GeForce Now, Xbox xCloud, Google Stadia and Sony Playstation Now.

Infrastructure:

- Users need to have a stable internet connection ranging from 50-100 Mbps at the least, a platform-compatible gaming controller, and a device to display the stream on.
- Cloud gaming uses "Remote mobile virtualization" which separates the server OS and its applications, like games in this case.
- Further, the applications are securely containerized to allow "mobile app virtualizations" so a single node can handle multiple connections and store data as well.
- Currently, each user is allotted a dedicated GPU which allows for maximum gaming performance combined with features like ray tracing, HDR while simultaneously lowering



Future:

- Improved GPU scheduling can reduce resource wastage.
- GPU virtualization combined with better processing queues for sharing a single GPU more effectively.
- There have been papers on machine learning algorithms to predict user inputs, applying compression to reduce latency and save bandwidth.

GAME ENGINES

Game engines are reusable components that game developers use to create sports frames, it is an architecture that developers use to run a computer game engine game.

A game engine allows you to add: physics, input, rendering, scripting, collision detection, artificial intelligence, and more without the necessity to program them.Programming Languages Used for game engines by developers are C++ and Java.

Artificial Intelligence in Game Engines

AI in gaming refers to responsive and adaptive video game experiences. Artificial Intelligence in-game engines need to program them These AI-powered interactive experiences are often created by non-player characters or NPCs who act intelligently or creatively as if controlled by one player. AI is the tool that determines the behavior of NPCs in the game world. Developers need to provide a gaming experience across different devices.

Importance of AI in Game Engine

AI in gaming is all about enhancing a player's experience. Players expect immersive gaming experiences across a wide range of mobile and wearable devices, from Smartphone to VR headsets and beyond.

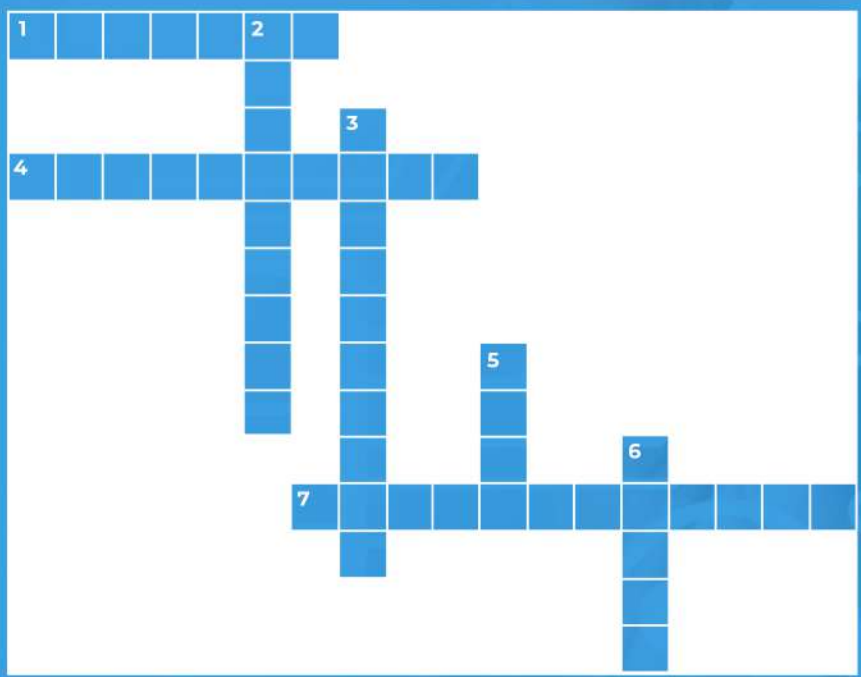
The game engines which uses AI :
unreal engine 4, unity 3D, Cryengine 3, Panda3D

Cloud Gaming Quiz Questions

1. Which cloud gaming company is also known for their graphics cards?
2. What is Sony cloud gaming platform called?
3. Which company successfully launched cloud gaming first and in what year?
4. What cloud gaming platform is also available on Chrome browser?
5. What rendering technique uses the path of light travelled to determine the 3D scene?
6. What GPU technology allows a single GPU to handle multiple games and users?

ANSWERS:
1. Nvidia 2. Sony PlayStation Now 3. OnLive, 2010 4. Google Stadia 5. Ray Tracing 6. GPU Virtualization

Crossword Puzzle Game !



DOWN

2. The engine in which games can be developed by visual scriptting

3. the architecture that developers use to run the game?

5. One of programming languages used for game engines bt developers

6. An engine which allows you to create interactive 3D content with ease.

ACROSS

1. In game engines for developing simulations of real-life activities, movements, and reactions.

4. A computer software that provides services to software applications beyond those available from the operating system

7. The engine which developed first 3d fps game

ANSWERS:
1. Physics 2. Crryengine 3. Gameengine 4. Middleware 5. Java 6. Unity 7. Unrealengine

PLACEMENTS

(Placement count - 88)

COMPANIES

- Microsoft
- Juspay
- Byju's
- HSBC
- TCS
- Infosys
- Nucleus software
- Hermann connect
- Persistent
- CapeGemini
- Teksystem
- SAP
- Indus valley Partner

GOOGLE SUMMER OF CODE INTERNS

AAKASH VERMA
(6TH SEMESTER)

PRATHMESH DESAI
(6TH SEMESTER)

KANHA AGRAWAL
(6TH SEMESTER)

DEPARTMENT'S ACTIVITIES

LAMHE 2022 - FAREWELL

Wishing Seniors a Happy journey ! As you all set sail for a new voyage of opportunities and career establishments. May you all have a good time and luck for your future accomplishments. Here are some glimpses of LAMHE'22

NEWSLETTER TEAM

FACULTY INCHARGE

MRS. SUMITRA SAMAL

Asst. Professor , CSE Dept.

We hope to share knowledge and wisdom through this newsletter. It is a report that focuses on a specific topic. This season we are working on Newsletter Vol10. The significance of a newsletter is to expand your reach and strengthen your ties with the ongoing technology trends. The topic of content for our current newsletter is AI Deep fakes. A newsletter is an expression of your opinion on a particular subject. In addition to bringing us up to date with the latest technology trends, it sheds light on myths and misconceptions. Learning something new, being motivated, and having a positive impact is what our newsletter provides to readers.

TEAM HEAD

Aman Gupta
Editor in Chief

Pranay Prajapati
Head Graphic Designer

Aayush Mishra
Head Moderator

Srijan Agrawal
Head Evaluator

Ishita Verma
Head Content Writer

TEAM MEMBERS

Yukti Jain
Graphic Designer

Praveen Sharma
Graphic Designer

Ayush Patre
Graphic Designer

Amaan Inayat
Photographer

Hardik Kaushik
Tech Geek

G Shreyas
Tech Geek

Harshita Amlani
Content Writer

Bhumi Panjwani
Content Writer

Suman Baghel
Content Writer

Shreyansh Sahu
Content Writer

Abhishek Singh
Content Writer

Anuradha Singh
Content Writer

UPCOMING NEWSLETTER TOPIC

The topic for the upcoming newsletter is Snowflake.It is a data platform.It enables data storage, data processing and analytic solution to oranizations that are far more efficient than any of the traditional offerings ever before.Snowflake architechture is made up of three layers: 1. Database Storage 2. Querry Processing 3. Cloud Service