



Vivekanand Education Society's College of Arts,
Science and Commerce (Autonomous)



Since 1962

THAT'S IT VERSION 15



NEXT GENERATION TECHNOLOGIES

AI

ARTIFICIAL
INTELLIGENCE

*Greatest invention
of human mind*



WEB 3.0

What does
the future
hold ?

GAMING

From Table-top
to Desktop

Upcoming Trends

Cybersecurity
Metaverse
Robotics





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Editorial

Principal

Digitalization has changed the world, with connectivity all around, the concept of distance and time no longer interferes with the transfer of information. It is available at the click of a button. Because it is very important to choose the right kind of information. We should be in a position to differentiate what is correct and authentic. I congratulate the IT department for their efforts in compiling the information in the form of a magazine "THAT's IT" full of articles which can be used to learn and develop new skills. I also take this opportunity to wish all of them a better future and prospect ahead.



DR ANITA KANWAR

Co-Ordinator



PROF. SHITAL PATIL

The next generation, from computers filling whole rooms to cellphones fitting in the palm of our hands, technology has come a long way. Modern and latest means of technology are applied in various fields. Here we are with a version of that's IT containing information about the next generation technologies. Gaming, robotics and cybersecurity are few of the most interesting topics to learn about these days. A lot of new information about Artificial intelligence is in the tech market. With the advancements that have been made we are able to dive into a whole new world of possibilities like never before.

Teacher-in-charge

Utilizing VR, AR, and the latest technology tools the metaverse will blend the digital and physical realms. There are myriad ways to fully realize metaverses that could change the way we interact, relax or even meet. The core concepts of Metaverse coupled with Artificial Intelligence, are meticulously explained in our magazine. Our brilliant team has explained the notion of how the future of Information Technology is going to shape. Optimistically, you all would gain a lot of insights from our "THAT's IT".



PROF. DIWYA SHETTY

Editor



ARYAN JETHI

Technology is the application of knowledge to reach practical goals in a specific and reproducible way. Technology has been advancing at a fast rate these days. Now the next generation of technologies is here: advanced robotics, AI, the Internet of Things, web 3, metaverse and gaming. They are already influencing global trade, and their impact will grow in the years ahead. Some of them, including digital platforms and logistics applications, will continue to reduce transaction costs and encourage economic growth. For the most part, technology has always been developed to improve lifestyle. With that said, I hope you have a clear picture of what next gen tech holds up after reading this tabloid and share the knowledge with others.



ARTIFICIAL INTELLIGENCE

CREATING ART FROM JUST FEW WORDS-DALL-E

AI has come a long way; from making efficient Search Engines like Google, recognizing faces & fingerprints for our device lock, improving Voice Assistants to giving recommended ads in our socials through our recent online searches, and now, turning few words into actual human-like art and real-life looking images!

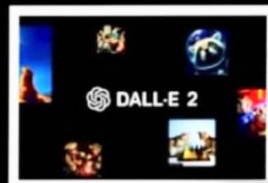
DALL-E (in beta), and DALL-E 2 (under-development), an extraordinary AI made by the company OpenAI, is a transforming model made to create art and even images from a few descriptive words. Recently, the images produced by this AI were viral on Twitter & Instagram, making it more popular than the time when it had been revealed, i.e., January 2021. DALL-E Mini, a demo-beta version of DALL-E, is currently available over the internet.

"A neural network that creates images from text captions for a wide range of concepts expressible in natural language."



ARTIFICIAL INTELLIGENCE

DALL-E Mini takes the context from the user, does the work in the backend, finds everything available over the internet, and then converts it to 9 different possible pictures. It uses Google's Imagen Software and OpenAI's innovative technology to create these images. The output you get from it is just unbelievable, in a good way but in an inferior way too. As the AI is still in early access, some images may look like MrCreepyPasta's YouTube video thumbnail! But from 9 out of 3, the DALL-E tries to make a spot-on image that matches the user's given descriptions to show what AI would be capable of doing through this Next-Gen AI Technology



DALL-E 2, which will be the future of Art AI, "creates even more realistic images and art from a description of natural language", says OpenAI. To experience DALL-E 2 asap, you can join the early-bird waitlist, available on their website (Image Source - <https://openai.com/dall-e-2/>).



METAVVERSE



INTRODUCTION

The internet that we use today is currently at its 2D phase where we normally interact with people with our computer/mobile screens, but Metaverse is a 3D virtual universe which consists different kinds of virtually or digitally created worlds.

Where people can socialize, work, play, learn and do everything that you can do in the physical world or even beyond of that with the help of your avatars (A digital representation of ourselves).



DO YOU KNOW?

In 2021, the founder and CEO of Facebook, Mark Zuckerberg, changed the name of the Facebook app to Meta

VIRTUAL REALITY

It refers to an entirely 3D digital spaces that are accessed through hardware's like VR headsets. These headsets use special lens technology, cameras and motion tracking controllers to fully immersed you into a digitally created environment which to be real but it's not.

BLOCKCHAIN & CRYPTOCURRENCIES

When we talk about Metaverse, cryptocurrencies and blockchain play an important role. In blockchain, data is stored in the form of blocks, and each block has its unique fingerprint and the data of block before it and since every block in a system is connected to every other block, any attempt to alter data in a block will change both that block's fingerprint and the fingerprint of the data before it, resulting in changing the fingerprint of the of the entire blockchain, proving the attempt to hack these data useless.

Blockchain Technology
And Cryptocurrency

Overview, Benefits, And Use Cases



FUN FACT

- The word metaverse is made by combining two words, "Meta," a Greek word that means "Beyond," and
- "Verse," short form of universe. We often use this word to defy an artificial world or a world beyond this universe.
- The 1st VR headset was patented in the 1960's and was named "Telesphere Mask" by inventor Morton Heilig

METAVVERSE



PROS AND CONS OF METAVVERSE



PROS

1. More Immersive & effective digital communication.
2. New Business opportunities.
3. Revolution in Education.
4. Advancement in E-commerce and Virtual economy



CONS

1. Privacy challenges
2. Health concerns
3. Desensitisation
4. Identity hacking
5. Regulatory challenges



FUN FACT

1 The virtual reality haptic gloves created by Meta contain tiny air pockets that allow us to feel virtual reality objects. For example, if you are holding a ball in virtual reality, the air pockets in the gloves stiffen in the areas of your hand to give you the feel that you are actually

2 If the metaverse becomes successful in future and more than 60% of the world's population joins it, consider how much power that one person gets who owns that corporation, he/she has every detail about you and is assumed to be the God of that time.



CYBER-SECURITY

INTRODUCTION

To decipher the meaning of Cyber security is the practice of protecting or defending computers, servers, mobile devices, networks, and data from malicious attacks. It's also known as information technology security or electronic information security. The term is applicable in a variety of contexts, from business to mobile computing, and can be distributed into a few common categories. Security and technology go hand in hand. There's always been a war between data protectors and data thieves, so we have to take a stand and be InfoSec (Information Security) warriors.



THREADS

February of 2020, the FBI notified U.S. citizens to be aware of confidence fraud that cybercriminals commit using dating sites, chat rooms and apps. Perpetrators take advantage of people seeking new partners, convincing victims into giving away personal data. The FBI reports that romance cyber threats impacts 114 victims in New Mexico during 2019, with financial losses accounting to \$1.6 million.



CYBER-SECURITY

RISING IMPORTANCE OF CYBER SECURITY

Cyber Security unemployment rates go down to 0% throughout 2020 and with an average employment deprivation of around 1.3 million skilled professionals estimated by 2020, it is clear that we need to take some rigid steps to protect the globe's critical systems from dangerous hackers and defend against potentially devastating cyber-crime which impacts all of us. You may be aware that in November last year, the UK Government proposed to pump £5.9 billion into cyber strategies, with one of the major aims of this funding being to provide the UK with the next generation of Cyber Security. This is affirmatively a step in the right direction. Prominently, education and awareness are crucial towards inspiring a generation. One of the initiatives announced towards the end of 2020 was the Government's plans to initiate a successful Cyber Security college at the home of historic UK Site, Bletchley Park. Schemes such as this should prove beneficial in focusing that Cyber Security is an appealing career possibility, side by side training the next generation of professional enthusiasts. Throughout the past year, we have observed an inclination in the importance of learning to code within the Primary School Curriculum, also rise in toys aimed for teaching children how to code.



THE FACTS!!



- 43% of cyber attacks target small business.
- There is a hacker attack every 39 seconds



ROBOTICS



INTRODUCTION

The word robotics first appeared in Isaac Asimov's science-fiction story Runaround (1942). Along with Asimov's later robot stories, it set a new standard of plausibility about the likely difficulty of developing intelligent robots and the technical and social problems that might result. Runaround also contained

WHAT IS ROBOTICS

Robotics is a branch of technology that deals with the design, construction, operation, and application of robots. It focuses on developing robots and automation. Robots are gaining intellectual and mechanical capabilities which include human control bots that perform tasks without any external influences



ROBOTICS



Recently, the variety and range of applications for next-generation robotics have increased dramatically. These include those working with humans (sometimes called co-bots), interacting with humans (such as educational robots), assisting humans (surgical robots, exoskeletons) or adapting and integrating into human-made environments. We now see uses for robots across industrial manufacturing, the home and the battlefield.

THE TECHNOLOGY



New sensors (such as cameras, distance, force and proximity sensors etc.) now enable robots to recognize and respond to their environment. The robots can also use software and algorithms (including artificial intelligence) to interpret the data collected and to control their movement. That movement is then enabled through actuators such as wheels, grippers and robotic arms. The new generation of robot designs make it easier and safer for humans to interact and work with them in these conditions, with the potential to bring dramatic changes to the world of work.



ROBOTICS



THE BARRIERS

Automating more and more tasks using industrial robots can improve efficiency and lower production costs but are also able to reduce the number of human operators required.

There are also safety and privacy concerns with robots having the potential to be hacked and used to gather data or perform dangerous actions.

Public perception of these factors will also be a key factor in the rate and level of uptake of robotic technology.

Asimov's famous Three

Laws of Robotics:

1. A robot may not harm a human being, or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.



ROBOTICS



TYPES OF BOTS

SPAM BOT

DOWN-LOAD BOT

SEARCH ENGINE CRAWLER BOT

MONITORING BOT

FACTS

FUTURE FACTS

- Robots can work in the corporate field they are fit for Industry, Marketing, and Factories.
- In 2050 robots will reach remarkable advancements that will not only be able to attain but also generate any task in a cost-efficient, timely, and meticulously manner.



WEB 3.0



Introduction

Before Web 2.0, The Internet was nothing but just a huge number of html pages. These html pages contained a lot of information but the user had no involvement in this world of information.

The term web 3.0 was first coined by John Markoff of the New York times in 2006. It first appeared prominently in early 2008 in a blog article written by Jeffrey Zeldman.

Web 3.0 (Web3) is the third generation of the evolution of web technologies. The web, also known as the World Wide Web, is the foundational layer for how the internet is used, providing website and application services. It content can be expressed not only in natural language but also in a form that can be understood, interpreted and used by software agents.



<http://www.>

How WEB 3.0 Works?

In Web 3.0 data will be connected in a decentralized way, unlike generation 2.0 of the internet in which data is primarily stored in centralized storage locations. In Web 3.0, user will also be able to interact with data through the use of AI and machine learning technology.

Web 3.0 also fundamentally works with crypto currency, more so than with fiat currency. Finance and the ability to pay for goods and services with a decentralized form of payment is enabled across Web 3.0 with the use of crypto currencies, which are all built and enabled on top of block chain technology.

Linked Data: New ways of finding, interacting and analyzing data from diverse sources to achieve new information and insights never before possible.

Machines will better do all these tasks. We only will need to view the data, modify it in the way we want, and create whatever new thing we wish to create.



WEB 3.0



Examples

- Going out for a movie and then to eat somewhere outside, provide details to the browser and get the possible outcomes.
- A patient might want to ascertain his disease from the symptoms shown.



<http://www.>

CROSS WORD PUZZLE

Clue: Challenges of Web 3.0



Answers:

1. (Across) Inconsistency
2. (Across) Decentralization
3. (Across) Lack of Security
4. (Across) Lack of Privacy
5. (Across) Lack of Interoperability



Do you Know!!

- 1) Web 3.0 is made with open source software that the public can view.
- 2) Web 3.0 allows users to create a single profile for all platforms

DID YOU KNOW?

GAMING HISTORY



The first game in history was approximately more than 50,000 years ago this game is known to be board game which was represented by course and pieces

The first ever thought of video game was by a physicist William Higginbotham and his idea for video game was hit at the Brookhaven National Laboratory open house.



SCIENTIFIC FACTS



- "Playing games can reduce stress and help with depression".
- "Gaming help dyslexic (disorder) kids improve their reading".



FUN FACTS

DID YOU KNOW?

- A Japanese man married a video character.
- The youngest professional gamer was 11 years old.
- Minecraft is the best selling game.

BIGGEST GAMING TECHNOLOGY.



THE METAVERSE:-

In 2022 this idea of in-game worlds expanding to take in other forms of entertainment such as music concerts in Fortnite or branded market in "pop-ups" in the hug popular universe of Roblox will undoubtedly have a bit if impact on the industry and culture of games.



CLOUD GAMING:-

This model is incorporated with the benefits where one dont need to buy and upgrade expensive, power hungry hardwares instead Chromecast or FireTV are all that's needed.



VIRTUAL REALITY:-

Apparently brought technology where they benefit from being capable of functioning cloud VR could become a reality further reducing the size of headsets



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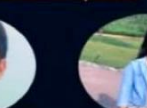
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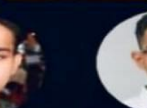
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IT DEPARTMENT





That's it

You've reached at the end of
this tabloid

About this Magazine

That's I.T. is a magazine published by the B.Sc. I.T. Department of VES College of Arts, Science and Commerce, Chembur. B.Sc. I.T.

Department is one of the dynamic, proactive and vibrant departments of our College. The magazine contains content from various domains, updations in the existing areas, careers in I.T. and details of new gadgets. It launches this annual magazine, that includes contents from various domains and updations in existing areas, careers in I.T., recent trends in I.T. and the details of new gadgets in store. The first edition of the magazine was launched in the year 2003 followed by the second edition in the same year, the third was launched in 2007. Following a gap of two years, the fourth edition was launched in 2010 and since then, we publish this magazine every year. As the world is so dependent on the Internet, this edition 15 contains information about the next generation technology that every techie should be aware of!



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