THE BYTE

EDITION 7, PART 2

FE INCHARGE

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Department of engineering sciences and humanities plays an extremely crucial role in an engineering college. It firmly believes in the overall holistic development of an individual and does not restrict itself to one domain or branch. Instead, the department profoundly focuses on creating an environment that caters to and facilitates for all the students of all the branches. It has been successful in organizing various events and activities for all the students which help them in exploring the domains of interest.

The department firmly believes in knowledge that can be gained by theoretical learning, skill can be obtained by practical and to get outcome students require attributes.

DR. SUNITA PACHORI

Department provides various platforms for budding engineering at the first-year level to enhance their writing skills, imagination, innovation in the form of various articles published in the department magazine Hence, we have our oldest and one of the most elegant magazines of the department called The Byte.

I wish that all my students contribute to our country's wealth and create a change in their life by bringing excellence!

The goal of publishing the byte magazine is to provide students with a platform to explore various technological domains and apply them to real-life problems. The Byte magazine also focuses on the innovations in technology that would prove a boon for humanity in the future. The editorial committee and all the student contributors of the department have worked enthusiastically hard to publish this magazine.

The interest of every student is unleashed through the articles they have contributed to this magazine. The process of making the magazine encouraged the student to research various topics related to technology and enhance their knowledge. It's a pleasure for me to have such students who work extremely hard and achieve feats in the field of science and technology. I am extremely happy with the contribution made by the first-year students.

I congratulate all the students for contributing and bringing this magazine to its fruition. Wish you all best wishes!

DEPUTY FE INCHARGE

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Our students have the passion to do something really innovative and unique. I am very delighted to have such students who have utilized their talents to build up aspiring writers and give them a chance to publish their articles through our magazine-The Byte!

The Byte signifies the circle of knowledge and truly portrays the writer's intellect and gives them an amazing platform to showcase their writing skills. It is visible that the students have taken the initiative to promote the writing and publishing skills of students. The Byte Magazine has been a helper to our students to share and express their thoughts in a detailed manner.

MR. ROHITKUMAR SINGH

The senior's column and the interview section is a must read and I can assure that this will surely be a great guidance tool for the students for planning their future. This is because of the motivational factor these sections have which would help our students to achieve the standard of excellence.

The magazine has a lot of importance because it not only provides a platform for the students to present multifaceted personalities but also makes them aware of their changing surroundings which could help them to adapt with. I am glad to take this opportunity to express my gratitude to our respected principal Dr. B.K. Mishra,vice principal Dr. Deven Shah and the faculty in-charges for their perpetual inspiration and never ending support. It is rightly said,"Teamwork is the ability to work together towards a common vision". With this, I would like to congratulate the students and the faculty members of the TCET-ISTE Byte Core Team for their amazing performance in publishing this edition of The Byte.

Wishing everyone all the best and hope that you all achieve success in your future endeavours.

ACTIVITY HEAD

Each day is filled with new experiences through which we often learn valuable lessons and in turn, make our day better. Igniting sparks of creativity, ideas and supporting innovation is also the new way of proceeding with acquiring knowledge. TCET believes in an all-round development of aspirants for research and writing. Not only books, but articles are also a better way to induce imagination in our minds.

DR. RAJNI BAHUGUNA

I am delighted to present you The BYTE Magazine by Engineering Sciences and Humanities, 2021 Edition. It is not only important to showcase your creativity but also to make the readers curious and this can be done by expressing their ideas and on-going developments in Technology through Technical articles. The BYTE purely focuses on development of interdisciplinary and complex problems, to which the solutions must also be found in the same way. Its indeed due to the hard work of The BYTE Team and their true determination that this magazine is growing. Hard work is also the spirit of success and development. TCET provides an opportunity to the students to work hard and scale the extra mile. I congratulate all the members involved in the editorial committee of The Byte for executing such an incredible magazine. I assure you that the mix of curiosity and intellect will bring you a fine article which in turn, would make you wiser than the other engineering graduates.

ES&H DEPARTMENT

With the vision "Education is the manifestation of perfection already existing in man", Thakur College of Engineering has established its ES&H department which is responsible for the holistic development of students. ES&H stands for Engineering Sciences and Humanities which rightly defines the purpose, work, and mission of the department that is "To endeavor to provide a strong base in Engineering and Technology, where students, faculty, and staff work collaboratively to expand knowledge in the basic disciplines of providing a foundation that is appropriate to their career goals, equipping well with knowledge and skills that will allow them to function as responsible and contributing members of society."

The department ensures that each student is provided with various opportunities to explore themselves as not only an academic being but as a candidate fit for decoding any kind of obstruction in their way.

"The Department of Humanities and Sciences shall strive to provide powerful educational effectiveness by linking facts, theory, inquiry, discovery, and solutions to real-world problems thereby providing a sound foundation to the undergraduate students."

As our former president, late Dr. APJ Abdul Kalam rightly said "Educationists should build the capacities of the spirit of inquiry, creativity, entrepreneurial and moral leadership among students and become their role model." ES&H department of our college following the same organizes various events all year round with different genres such as technical, creative, performing arts, scientific, vocational, and many more. To develop the skill set of analysis, curiosity, demonstration, presentation and rest followed, the introduction of subjects like ABL, PS, have proven to be predominant in giving an in-depth experience of one's all-round development. In order to provide an edge to their students, an International and National level conference MULTICON-W was organized. Besides this, the daily initiatives and activities show the ES&H department's efforts to give the students every possible opportunity to learn and show them that knowledge is not restricted and that the sky is not the limit.
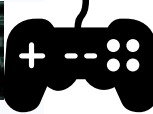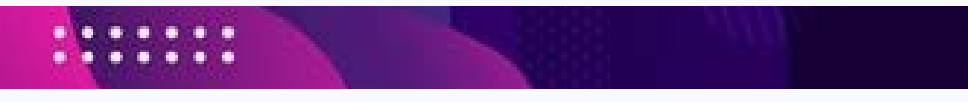
Editor's Desk

This year has seen some of the most extraordinary events in human history. The severity and impact of the COVID-19 Pandemic have had a profound impact not only on our lives, lifestyles, and cognitive processes, but also on industry and academics. After the lockdown, it appears like everything has come to a halt. The silver lining, though, is how various industries have reacted and responded to these unusual circumstances using "Frontier sciences and cutting edge technologies" which is the theme of this edition of The Byte Magazine.

'The Byte is more than a publication.
For us, it is a visual depiction of all of our hard work, as well as a representation of the wonderful memories and experiences we enjoyed while working on it.
Our primary goal in publishing this journal is to bring to life our dear students' previously unseen enthusiasm, unwavering devotion, and unappreciated brilliance. 'The Byte' is a chance for students to come out of their shells and discuss their thoughts on technology without sacrificing any of their academic time.

We hope that our efforts are recognised and valued by all, and we pledge to continue providing content that each of you will enjoy reading.

I N D E X

ILLUSION- ARE YOU REALLY BEING YOURSELF ?

BY KAUSHAL AGARWAL

Growing up, there would be at least a time when your parents or teachers have said you to be yourself. Everyone will acknowledge you if you are being yourself. But what does that actually mean? We are fed an image of what is normal from our childhood. You must have once in your life read magazines or books or watched videos on social media about how to be yourself and happy. But life isn't that simple and flawless. What we see in these videos or magazine covers is not always what it seems. All this is just an illusion sold to us in the name of living a perfect life. We humans are very good at staging an illusion and become very good at playing it, especially on social media. But does this identity created by you always match what you feel inside? We humans are always afraid of people judging us, so afraid that we create these illusions our identity. Many of you would have talked to yourself about how you are not beautiful or handsome or smart or worse you are a failure. It always comes down to these words NOT GOOD ENOUGH. This fear of judgment stops us from achieving our full potential. We knowingly or unknowingly become a part of a group that is not for us. Like in school, in trying to fit in the crowd or please them we either become a bully or the victim in some sort of way. We start to isolate ourselves pretending to be OK and keeping a smile on our faces. But.... But what about the reality shows or our favourite actor/actress we grew up watching who were being themselves and happy. Well, if you ever worked with them behind the scenes, you will find out that you and they are not very different. They are not as intimidating or secure or perfect as seen but also like us tends to get nervous or you know what "make mistakes", the thing we are most afraid of. The GREAT REALITY SHOWS that we adore is just an ILLUSION. When we stop thinking about others' thoughts, we will find out what we want to do. You should not let this fear stop you. The meanest critic you will ever find is yourself. While constructing Eiffel Tower, Mr. Gustave Eiffel received many criticisms that the project is not artistic and no one will like to see it. But as we all know today many people come especially to Paris to see the Eiffel Tower. You are always GOOD ENOUGH. Break these illusions and live your life

FASHION

BY DHVANI KHATRI

We live in a world where people are judged by their external appearance. It is a world where what you wear determines who you are. Some time back, while out shopping, I happened to overhear a conversation. "Is this good on me? Does it make me look cool enough?" That is what inspired me to write this article. Fashion is an ever changing trend that will be completely different from the year before. With such changes, the whole concept and people's mindset regarding fashion will move to a whole new level. Hence it is pointless to compare the previous generation's and our generation's attitude towards fashion. It's obvious that such changes happen. Of course, taking care of one's appearance and wanting to look good is very much appreciable and it does upgrade our confidence. However not all dress to please oneself. Majority of us use fashion as an excuse to blend in with the cool crowd. The following are some of the interesting assumptions present nowadays. "If you aren't wearing the happening clothes nor have the right accessories, you are not cool. "If you don't have a good sense of fashion, you obviously must not be rich. Thus you aren't part of the "It" crowd." Students are judged simply by what they wear, all the way down to how they act. Once such a presumption is made, there is really nothing that can be done to change it. Many struggle with finding themselves be -

cause of this. Some go through several make - overs and personality changes just to see where they can fit in and who will like them. It's this constant yearning for popularity that more than 90% students strive for. Though it is a nice feeling to have, many approach or go about it in wrong ways thereby diminishing their confidence, not realising that they are trying to be mediocre copies of someone else when they can be themselves and be accept - ed for itThey wonder who they are, what their purpose is in life and where they be - long. Such can ruin and scar their young lives. This system where we classify and relate people to a social class by the way they look or dress invites hostility, gnorance and hatred. The sad reality is that there is nothing we can do to stop people from thinking, judging or stereotyping others. As a human being, it's something all of us would have done at least once at some point in our lives. We can't change everything, however we can control the things we do and say, and that make a huge difference. Think twice before you judge some - one, think how you would feel, if it was you in their place. Next time before you do such a thing, ask yourself this question. How would you feel to be in his or her shoes? Nobody is perfect; hence we don't have the right to judge anyone. Moreover, we don't need to change ourselves to be accepted by the society. Always remember, "In a world where you can be anything, be yourself

CRYPTOCURRENCY & WEB 3.0

BY RIYA GOHIL

Cryptocurrency and web 3 have became trending topic on a number of social media platforms. Apps are being developed for trading cryptocurrency. There have been a number of tweets on cryptocurrency as well as web 3. There many tutorials for investing in cryptocurrency, yet a huge amount of people have a massive ambiguity regarding the concept of web 3 and cryptocurrency. Thus a simplified, easy explanation regarding cryptocurrency and web 3.0 has been provided in this article. II. WHY CRYPTOCURRENCY AND WEB 3 WHERE DEVELOPED? The physical currency you hold is your hand is not completely under your control. Government ultimately has authority over it. There are a lot of factors which affects its value. And it is centralized. Thus a decentralized currency was invented over which only one person or one single company cannot have their full control. Also, this currency is not restricted by geographical barriers since it is virtual. Web or web 1.0 were concept having read-only static pages and hyperlink which would redirect user to another page. Web 2.0 had new features were user could not just receive information but send information by interacting. However the information which is obtained by user's interaction is stored and privacy is not respected. Web 3.0 brings idea of anonymous identity where privacy of people is respected. . BLOCKCHAIN - BUILDER OF CRYPTOCURRENCY AND WEB 3.0 Blockchain is a technology with help of which concepts like cryptocurrency and web 3 are possible to implement. Without intermediaries transactions are possible between 2 users from any country with the use of blockchain technology. Blockchain can make a safe secured transaction possible between people who don't even know each other. It does so by completely changing the concept of how data is stored. To explain in short how blockchain works let's take example of Bitcoin, a well-known cryptocurrency, which was made using blockchain . A Block of Blockchain stores some relevant information for eg. Information of transaction of Bitcoin, who sold it to whom, etc. And according to this information, a unique Hash is created. It's a code which will be associated with that block, think of it like a unique adhar number specially associated with a single person. And along with data and hash code, the hash code of previous block is also stored in a block, this forms a chain of blocks. So if you try to alter some information in a block, it's hash will change and then hash of next block will also change. This way, entire data will become invalid. Thus, Blockchain ensures security. Conclusion Even though there are layers of security, yet scams of crores money have occurred. So, more measures are needed to be taken in future, to prevent such scams. Once this goal is achieved, then Cryptocurrency and web 3.0 will surely gain trust from even larger number of people and will widespread

Data Engineering

BY UTKARSH ROY & KANAK PANDIT

1. What is data engineering?

Data engineering intends on gaining maximum productivity out of the given data so that it can be easily accessed by the consumers. Without a doubt, it is not so easy to manage and handle large amounts of data. For this purpose, systems are designed so that they can store, process and successfully analyse the data. Data is transformed into simpler forms by building data pipelines. Data engineering is a vast field which finds its applications in deep learning as well as machine learning.

2. What does a Data engineer do?

The major role of data engineers is to take in raw data and convert it into a useful form so that it can be comfortably utilized for any suitable purpose. For example, so that it can be interpreted and accessed by various business organizations to effectively make better decisions on the basis of it. Their work includes but not limited to: Build algorithms to successfully convert big data into simpler and useful forms. Make effective use of data visualization tools. Maintain and process the architecture of multiple data pipelines.   Focus on implementing data warehouses to know and keep the track of data. Ensure to avoid any interruption in the data flow between any source or server.   Making sure to comply with the data governance guidelines. Filter out the irrelevant information from the given data. The Data engineers usually hold a bachelor degree either in any field related to business or in mathematics/science/computer science.

3. How to learn Data engineering?

Being proficient in software skills is essentially rewarding if we aim to learn data engineering. One should be having a sufficient understanding of data architecture and structure. Python is recommended as a basic programming language requirement as it tremendously growing in demand. Adding to it, a great amount of knowledge regarding operating system is needed apart from developing skills in Data warehousing - MapReduce, Hadoop etc and Database management which are broadly classified into two categories – SQL and NoSQL and also knowing about data modelling, machine learning techniques and database tools. Being familiar with Java and scala is an added advantage as it would lead to an increase in the versatility and core skills of the Data engineer. Data Engineers are expected to be comfortable with the server management skills, Linux and Windows. With the foundations of the above mentioned programming languages, the basic fundamentals of cloud computing must be cleared.

Computational Chemistry

BY ABHIRAJ CHAVAN

Computers and chemistry both are so distant from each other. So thinking both of them as one single discipline is difficult right... ?? But by Computational chemistry this is completely possible.

With the development of science and technology, chemists have developed from using plastic short rods and balls to represent molecular structures to using computers to display various chemical models. As a result, a new interdisciplinary discipline has emerged, that is, computational chemistry. Computational chemistry is a science that applies computers to study chemical reactions and material changes, and has become an important branch of theoretical chemistry. It uses effective mathematical approximations and computer programs to calculate the properties of molecules, including electrons, orbital parameters and geometric parameters, to explain some specific chemical problems and clarify the nature of chemical phenomena and chemical problems at the electron, atomic and molecular levels, including reaction mechanisms, chemical properties and drugs. Constructive relationship, etc.

Principles and methods of computational chemistry :

Only by understanding the physical and chemical properties of a molecule can we know its effect with other molecules and certain properties of the aggregates composed of it, such as the motion state, potential energy, light, electricity, magnetism, heat, microwave and other effects of molecules and molecular aggregates. To know the properties of chemical molecules, you must first know all the structural information of molecules. Because the molecular structure contains a lot of information, including the connection between the atoms that make up it, the conformation of three-dimensional space, configuration, electron motion, interaction between atoms, interaction between electrons, interaction between electrons and nuclei, molecular energy, etc. All of these need to be obtained through experimental determination and computational chemical methods.

Computational chemistry methods include: calculation methods and molecular simulation. Calculation methods include molecular mechanics (MM) and quantum mechanics (QM) methods; while molecular simulations include molecular dynamics (MD simulation) and statistical mechanics (SM) simulations.

Molecular mechanics is the classical Newtonian mechanical method. That is to say, classical physical laws are used to predict molecular structure and properties. It is based on the following assumptions:

Molecular mechanics is the classical Newtonian mechanical method. That is to say, .
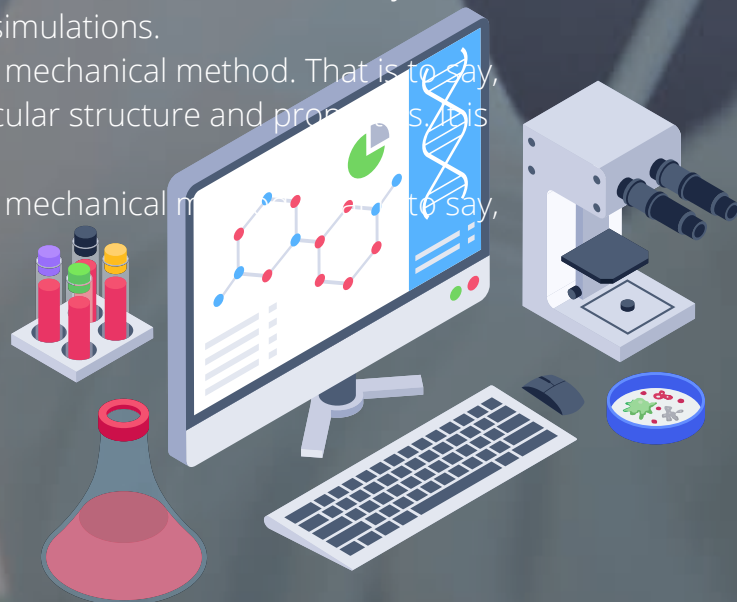
Different molecular force fields and potential energy function expressions are different, which is suitable for studying different molecular systems. The bonding energy part of each molecular force field is basically similar, and the main difference is the non-bond energy part. Different molecular force fields are selected according to the subjects studied.

Molecular mechanics calculation does not calculate electron interaction. It is a simplified model of molecular structure. The molecular force field function is an empirical formula from the actual results. The simulation of molecular energy is relatively rough, but compared with quantum mechanics, the calculation amount is dozens of times smaller, so the calculation speed is dozens of times faster. Within the appropriate range, the accuracy of molecular mechanics calculation is almost the same as that of quantum mechanics. This is obviously more advantageous for macromolecular complex systems. For example, for protein systems, energy optimisation, binding constant calculation, kinetic simulation of protein folding, active site detection, binding site design, etc. can be carried out.

The deficiency of the molecular force field is that it cannot describe the transition of electrons (including the adsorption of protons), the phenomenon of electron transfer, the transmission of protons (such as acid-base reactions), and the failure to deal with chemical problems dominated by electron effects, such as the formation and fracture of chemical bonds.

Quantum mechanics (QM) method. Quantum chemistry is a discipline that applies the laws and methods of quantum mechanics to study chemical problems. The scope of research includes the structure, properties and relationship between the structure and properties of stable and unstable molecules; the interaction between molecules; and the collision and interaction between molecules. Microscopic particles have wave-particle duality characteristics and follow the quantum mechanical uncertainty principle (the position and momentum of particles cannot have definite values at the same time), which do not confirm to Newton's laws of motion mechanics that describe the laws of macroscopic matter. The properties of microscopic particles or systems are uniquely determined by the state wave function ψ and subject to the Schrödinger equation. This is one of the 10 greatest formulas in human society so far, which reveals the laws of motion of microscopic particles.

Tasks of computational chemistry :

One of the main functions of chemistry is to discover or create various useable substance chemists to meet the needs of human survival and development. It contains three categories: one is the determination of the structure of unknown compounds; the other is the prediction of the molecular structure of compounds with certain properties.

IS THE WORLD ENDING?!

BY JAY GUPTE

Now that I have your attention, I am sure you have come across articles and videos with misleading headlines like this one. We have seen this sort of openings often whether related to current affairs, movies, celebrities or any other buzzing topic on the news. So what are these phrases or headlines called? These are just simple phrases or images called clickbait. They often appeal to your emotions and curiosity and make you click on the link to an article, image or video. The word 'clickbait' was invented by Jay Geiger in a blog that was written in 2006, and since then it has been used everywhere. Clickbaits are often misleading, exaggerated, usually fake, news and are disliked by most of its victims because they are considered a waste of time. Some types of clickbaits you might have come across are: • This is the reason why... • You won't believe... • The Ultimate guide to... • This famous person said this... • 10 reasons why you should • Things you never knew about... Or something completely unrelated (like the title of this article)

So why do these clickbaits work?

Smart clickbaits which work the most are usually framed in ways where only a certain hint about the article or video is mentioned. Clickbait headlines compel readers to click on them because they create a feeling of disequilibrium which means that once a person reads the headline, they are unfulfilled and unsatisfied thus, they click on the link to tame their curiosity. Furthermore, as human beings, we naturally seek answers. Our dopamine-reward system plays a role in our desire to learn more about the world. While this is obviously complicated and technical, a body of evidence suggests that dopamine motivates behaviour more through 'want' (also known as incentive salience) than what you 'like'. The promise of shocking and interesting answers or news activates a particular dopamine pathway, which when released, creates curiosity which can only be calmed by the procurement of the information.
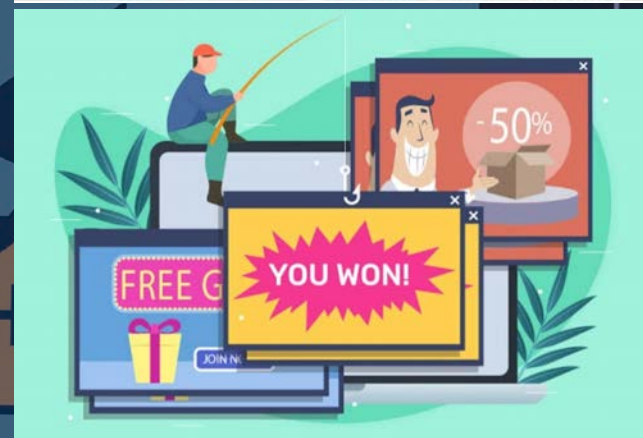
Is clickbait good?

And how is it good? From a marketing strategy perspective it definitely is. Even though clickbait has negative reactions, it is beneficial as a marketing strategy. The sole purpose of creating clickbait is to achieve more page views. Whether you use clickbait on your own website or somewhere else, it can definitely help you get more views. If clickbait produces more visits and social shares, it implies that as your material spreads over the internet, more people will be introduced to your brand. Content marketing requires increasing brand recognition, and creating captivating clickbait is a smart method to do so. If we consider content marketing to be a continuous cycle, brand recognition is critical at many phases, especially when it comes to helping visitors remember your material (and consequently your brand) and developing trust

To conclude, I would like to say that I personally believe that much like a lot of stances around the world, clickbait also has both benefits and drawbacks to it. As mentioned before, clickbait is a great way to attract more people. If designed properly, clickbait can be one of the most useful ways to get the viewers curious and wanting more. However, if used in excess, clickbait could be the reason why one loses customers because they may seem quite aggravating to most people. Therefore, it is my opinion that if used strategically and in a limited way, clickbait can turn out to be a boon.
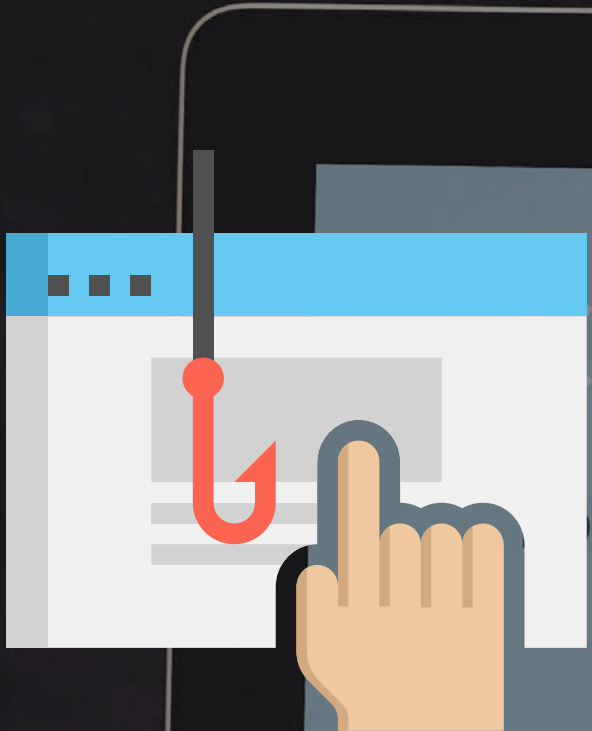
Airbus & Boeing Duopoly

BY MOHMMED ZUNED CHAUHAN

The Airbus-Boeing duopoly dominates the already under competitive aircraft manufacturing industry by producing over 99% of airplane orders globally. It is one of the foremost successful duopolies in the history of production dominating the marketplace from the last 50 years.A duopoly is an industry or sector dominated by only two businesses. The Companies which dominate the commercial aircraft manufacturing market are Airbus and Boeing. Both the businesses are in a continuous battle with one another to achieve market share. From many years Airbus and Boeing are manufacturing a spread of airliners from short-haul, twin-engine models and jumbo jets by controlling 99% of aircraft manufacturing. Their dominance over the market has been a typical trend throughout history and also the future shows implications that it can continue. With the following factors Airbus and Boeing are maintaining their dominance over the airplane manufacturing industry. together with these factors both the businesses can easily maintain their positions because of the top manufacturing companies in the future.

1) High Manufacturing The Manufacturing of any airplane requires a team of engineers to style it. This team of engineers spends years to form an ideal design. Each part has to be manufactured to fulfill standard safety and quality requirements which needs extensive testing and find yourself drastically increasing the manufacturing cost. Once the assembly is begin the manufacturer starts to source parts and components needed

The high manufacturing cost is majorly thanks to extensive research and development and comprehensive testing. All parts including Tyres, Seat Belt, Windows, Cockpit all are tested to fulfill quality standards. The average price of latest car is around $36,000, while a mean passenger plane cost around $82 million to $230. the businesses have few third party manufacturers as compared to other industries. a motorbike or car manufacturing have many suppliers for manufacturing of components, however the airline industry has limited number of suppliers which doesn't provide them the facility of negotiation. With limited suppliers the businesses should pay more for the parts that can't be manufactured in their facilities. The manufacturing of aeroplane takes 9-12 months, therefore thousands of employs are employed at different facilities which find yourself in increasing the value.Therefore the manufacturing cost acts as a entry barrier to new players. Therefore these two companies have dominance over domestic and international demand. 2) Good Relationships The Airbus & Boeing are manufacturing aeroplanes since Decades. the first entry into the manufacturing market has allowed both the businesses to develop close relationships with their respective government, Different Airlines and organizations affiliated with regulation of the industry. As an example Boeing is that the 2nd largest spender on lobbying within the US, with over 1 / 4 billion dollars spent once a year.

3) Safety In aviation industry Safety is that the most vital aspect . The deep history of success for the 2 manufacturers has solidified their reputation in terms of safety. 4) Market Share After manufacturing for many years the businesses have good reputation in market from years. Airbus and Boeing both companies are maintaining year over year growths. Airbus delivered 800 planes globally in 2018, representing an 11% growth from 2017. Boeing set a record by delivering more 806 planes in 2018, a 5.6% more from 2017. Therefore this company enjoys 99% market share of the entire market. 5) Government Approvals Once an aircraft is designed, before selling it to customers the companies need approval from almost every government in the world. However getting approvals from USA and EU Government is almost impossible. A company need to lobby the government to approve the aircraft. A donation to the safety authorities is also required The Rise of Boeing Boeing could be a US based manufacturing company that was formed in 1916 and is dominating the market from century. Boeing began their ascent to aeronautics heavyweight within the earliest days of aviation. Some historians believe that Boeing made the primary successful airliner, the Boeing Model 247, launched in 1933. The plane set numerous records, including cutting the flight time from big apple to urban center right down to under 20 hours. Boeing targeted the U.S. because the first customer which benefited the corporate receiving majority of defence orders, tax relief and control over US aviation market.

The rise of Airbus: The airbus was started by three European countries Germany, France, and therefore the United Kingdom in 1967 to facilitate the manufacturing industry and to scale back the dependence on the US All 3 countries came together in 1967 to push technology and provides a lift to economic process. In 1972 the corporate launched its first A300B model, allowing passengers to fly more for fewer.The success of early models allowed Company to require over the ecu Market and nearby regions at the time when travel was popularizing. This allowed airbus to require advantage of first mover. The Airbus is one in the highest manufacturers in the world because of its consistency and reliability. Other than Boeing and Airbus there are many other companies that manufacture aeroplane. However they are not well succeeded yet!
Canadian Bombardier: Bombardier is a Canadian company that manufactures small to medium jets in market. Bombardiers C series was far better than Boeing and Airbus Jets. The development cost was about 2 billion dollars. When Bombardier tried to sell its first aircraft with the help US government the Boeing Banned the sale of Bombardier aircraft by giving safety issues.The Company sold its 50% stake to the Airbus. The Airbus rebranded the C series with its A320's Series. Currently Airbus have more than 300 order of the same aircraft. The question here arises is that if Bombardier C series was banned due to safety issues then why A320 was not banned?

FUTURE OF TECHNOLOGY

BY AASHI SHAH

Do you know that come across IoT devices daily? Yes, IoT devices are used for the smallest to the biggest applications in our daily life. From the fitness devices we wear to the smart homes we live in, they are all made using IoT. Even one of the most in–talks car made by Tesla make use of IoT. Other uses include; smart blackboards which make studying 10 times more fun, medical devices that make diagnosing diseases easier and a lot more fast and many others. What is IoT? This is one of the most common question that come to all of our minds, is it not? So, IoT stands for Internet of Things. It is a device that connects everyone using the physical devices we wear or generally use. It is the factor that defines a device as smart. However, not a lot of people are aware of them so, the diagram below expl
 ains how IoT is used in simple terms.
•Smart devices used to collect data from the surrounding or entered by the user
•Networks like wifi, bluetooth, NFC etc used to share data from the device to the main IoT Hu
•Consumer specified needs are met based on the data collected and analyA data analysis tool that assesses the wide range of data collected from the smart devicessed by the earlier systems
Future Scopes for IoT It uses technologies like data science and analytics, artificial intelligence and machine learning, cybersecurity, cloud and blockchain technologies etc which happen to be the most used technologies nowadays and study states that these industries will see growth in the next few years as well. A downfall in these industries is highly unlikely. Moreover, the deamnad for IoT products has significantly increased in both national and international markets. The global market for IoT is projected to reach USD 560 billion by the end of 2022 as mentioned in a report from Markets And Markets. To conclude, IoT is a good opportunity to have an enjoyable and well–paid career with a futuristic version. IoT, without a doubt, is going to have a great future but all in due time. The awareness regarding this in minimal at the moment but is increasing at an exponential rate. A lot of the inventions and businesses in the show 'Shark Tank India' were based on IoT which gave its viewers a new perspective on the field

CHATBOT

BY UTKARSH ROY)

What is it? A chatbot is a computer software or a program which interacts with the user through the medium of either text or speech by the means of artificial intelligence and machine learning. Today, we cannot visualize the world without the existence of chatbots since it is being vastly utilized by us in our day-to-day life. The prime examples of chatbot include Google assistant by Google, Alexa by Amazon, Siri which was developed by Apple, Cortana by Microsoft etc. These are known and used by almost everyone now. Significantly, the early chatbots were ELIZA(1966) AND PARRY(1972). The artificial intelligence makes the machines work in miraculous ways. How does it work? A complete database of questions and answers is feed into the chatbot via which it can search, analyse and solve the query raised by the user to a great extent. It is built in such a way so that it can simulate a conversation by humans in a natural way. More often than not, chatbots make the use of Natural language processing(NLP) so that it can understand and analyse the human speech and search for a correct or most suitable response in a well structure manner. The NLP aims to make the conversation look as realistic as possible – just as if it would not make the person on the other end to figure out whether they are speaking to a machine. With this, the person can interact freely with a chatbot and ask any question they would like an answer to. Since, chatbots uses computer based algorithms, they can be operated on a continuous basis, 24*7 and 365 days allowing them to be suited to a large variety of applications as it provides round the-clock service
Where is it used?
They are highly used in the business sector where the chatbots hold a immense amount of importance. The brands have started making the use of chatbots on platforms like WhatsApp and Facebook which consists of around 3 billion users combined.
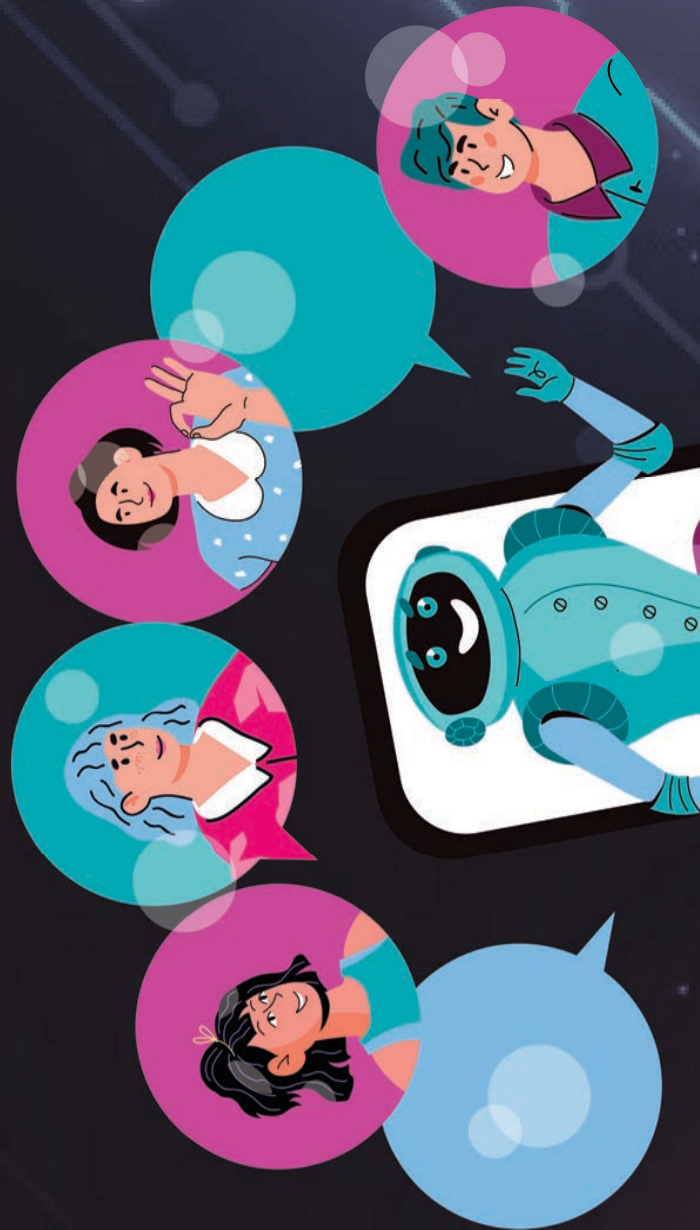
This is rather an easy approach as the customers are not forced to use any third party software or application/website so it is simplistic to the users as they do not to go through learning anything extra. The conversation takes place in the most intuitive way. The response provided is instantaneous which is heavily desired by people especially in the business sector. Chatbots have proved to be an amazing resource for the companies to connect them with the customers. The tech companies are constantly looking to implement AI-based solutions like chatbots which can provide quicker and effective assistance to the clients who are getting accustomed to the developing technologies. In banking sector, chatbots are used to provide transactional support and handle the common customer related queries. In the healthcare sector, they are beneficial to book prior doctor appointments, providing medicinal assistance, locating clinics etc. In the mid 2020, WhatsApp had collaborated with the World Health Organization (WHO) to implement a chatbot system which would accept and solve the queries of users which were related to the Covid-19 pandemic. The Indian Government too, had launched a chatbot service known as MyGov Corona Helpdesk which was set up to work via WhatsApp and aided the users to access the covid related information. The scope The development of chatbot is still in process and it is readily subject to the development of artificial intelligence and machine learning. The most commonly observed limitations observed with the chatbot are: • The efficiency of chatbot is impacted with errors and change in accents. • There are chances of failure if the chatbot deals with a query which is missing or absent in its database. • Cannot deal with more than one question at the same time.

Following in the footsteps of Bitcoin and Blockchain, NFT is another term that has entered our

lexicon. The hype is everywhere, and people are wondering what NFT is and how it can help them.

There isn't really a one-line explanation. That is why this article provides a comprehensive

explanation of NFT, its application in digital art, and more.

What is NFT?

Before anything, let me give you a clear-headed definition of NFT and what it stands for. NFT stands

for Non-fungible Token. Fungible by its very definition means something that is mutually

interchangeable. For example, you can exchange a ₹10 note with another ₹10 note or exchange it with two ₹5 notes. In both cases, the value remains the same and you will have no problem exchanging the money. Here, money is a fungible item as it can be exchanged without diminishing the

value.

Before we begin, let me provide a clear definition of NFT and what it stands for. NFT stands for Non fungible Token. Fungible, by definition, refers to something that is interchangeable. For example, you

can exchange a ₹10 for another ₹10 or ₹10 for two ₹5. The value remains the same in both cases, and

you will have no trouble exchanging the money. Money is a fungible item in this context because it can

be exchanged without losing its value.The Mona Lisa / Source: Wikipedia So when we say non-fungible, we mean something that cannot be exchanged for another item of comparable value. To give you a simple example, will it be the same if you replace the Mona Lisa painting in the Louvre in Paris with another printout of the same image? And, more importantly, will it have the same real value? No, it does not. In this case, the incomparable Mona Lisa painting is a Non-fungible item that cannot be exchanged for another item with a similar appearance.

THE ERA OF NFT

BY CHANDRAGUPTA MAURYA

The key word here is uniqueness. As a result, a non-fungible item is one that is distinct and genuine. Something valuable because of its authenticity. Now comes the fun part: the token. A token is a 40-digit string of words and numbers that contains information about the original artist who created the masterpiece, the current owner (there can only be one), and the current price of the item. This information storage is supported by Blockchain technology, which, due to its decentralised system, cannot be altered in any way. Finally, when all three words are combined, NFT refers to an incorruptible token that contains ownership information about a unique and authentic item. NFT is essentially a proof of ownership or authenticity.

What Role Does NFT Play in Digital Art?

Many people must be wondering what the point of NFT is in digital art and why there is such a fuss about it. As I mentioned above, NFT is a signature of authenticity, and it provides that authentic stamp of approval on the web when dealing with digital arts. We are all aware that in today's world, anything can be altered with, and people can pass off other people's work as their own. Basically, it's nearly impossible to find the original creator of an artwork on the internet, which is where NFTs come in. NFTs essentially aim to bring art collecting into the digital age by selling entirely digital art.

NFT allows digital creators to place their work in the public domain without having to prove ownership or authenticity. Digital artists can generate NFT for their original work and auction it off to another person while keeping track of the original creator, current owner, and current value. The best part about NFT is that a portion of the value is transferred to the original creator every time the digital art is sold to another person. As a result, NFT is an excellent option for digital artists looking to monetize their work. What is the Relationship Between Blockchain and NFT? Blockchain is impenetrable, and it is widely used to manage a variety of cryptocurrencies. Every NFT transaction is recorded on a public ledger, ensuring that the entire system is transparent. Another feature of this technology is that it creates achain, which means that everything can be traced back to the original creator.

One thing to keep in mind is that you can only purchase NFTs with cryptocurrency, specifically Ethereum. Because of its early start, Ethereum is currently the market leader in issuing and managing NFTs. However, some services accept Bitcoin for purchase and sale. NFT's History Now that we've learned everything there is to know about NFT, let's look at how it came to be. To begin with, Ethereum has a head start because they were the ones who initiated this project in 2015 with their new NFT blockchain system known as ERC-721. Following that, Ethereum introduced ERC-1155 and advanced the technology before Bitcoin and Flow could

cryptokitties

Ethereum launched a blockchain game called CryptoKitties in 2017. In this game, players could use Ether (Ethereum's cryptocurrency) to buy, collect, breed, and sell virtual cats. At the time, the most expensive cat sold for $117,712, which was mind boggling. Taking a cue from this, Ethereum incorporated the NFT system into its cryptocurrency and is now leading the market. The Cons of NFT There are a few major drawbacks to consider before investing in a digital collectible via NFT. To begin with, it consumes a massive amount of energy to generate and maintain the system, rendering it unsustainable and negatively impacting the environment. This is due to the fact that, unlike cryptocurrency, a non-fungible token runs on a proof-of-work blockchain, which consumes less energy. As an aside, expect GPU prices to skyrocket in the near future as a result of extreme mining.

Aside from that, critics warn that NFT is a bubble, and that people who pay such a high price for a strange GIF or a rare video clip will be disappointed. According to experts, paintings and rare collectibles are valuable not only because of their artistry, but also because there is a well-established audience that wants to own and collect rare paintings or artwork that no one else has

BUILDING CONNECTIONS ONLINE

BY ADITYA BORKAR

In this new day and age, keep yourself updated mentally and physically is of upmost importance. From exercising to keep our health in check and to live a longer and healthy life, to solving problems or even trying coding even though you have no aspirations to even be a software developer, it's important for the brain and the body to be healthy simultaneously. Similarly, being social or building connections is also an important part of our careeristic life. Now-a-days, we all know how important it is, to build connections. Having connections these days is like having a bar of gold in a poor region, the one with more connections is the king. Now by connections, I do not mean just friends who one could hang out with, from connections I mean people who one could rely on, if he/she is having any sort of problem or difficulty in his or her life. Of course, just taking their post or role as an advantage to build a connection isn't going to get one anywhere, you have to talk to them, get to know them, that's how a connection is built, simply seeking them when you have an issue isn't how a connection is built. Connections in this day and age, I mean in this online day and age has become way simpler than what it was before, Earlier people used to have a hard time even reaching higher authorities, let alone form a connection. These days however, its way simpler though. The only thing you got to have is the confidence and the proper form of credentials, worthy of their time to have a connection. Let me tell you a story, I had a friend, quite older than what I am right now, his main aspiration in life was to become an aerospace engineer, the main issue is, currently there aren't many engineering colleges who teach aerospace engineering. He had a contact with a professor abroad, who my friend had been emailing, of a certain university regarding his aspirations, his research, all that he did while residing in India, After a while, he couldn't find a good college that could teach him aerospace engineering, he told all about his issues to the professor, The professor told , he could ask the chances in his university, but on one condition, he had to score pretty good marks in their university exams to actually get a chance to study in the college, he studied hard and now he's studying abroad in that college for his aerospace degree. This above story explains to all of us, on how building connections is something we all have to do, and how it helps us in being successful in whatever we aspire to become. Due to building connections having a lot of importance now-a-days, various colleges have started teaching their students about connection building apps like Linked In, Twitter, Facebook, and many more with the aim of helping students to be successful in their life As an engineer or people who aspire to be engineers, building connections is the most important thing you can focus on, for a careeristic life. The marks you score, your intelligence, your capabilities are all portrayed to people depending on how many connections you can build as a person.
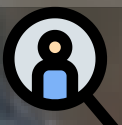
ARTIFICAL INTELLIGENCE

BY ANISH JOSHI

ABSTRACT

Artificial Intelligence is a computer program having self-learning ability and can think and make decisions on its own. Applications of AI are found in various industries/fields like Gaming, Healthcare, Automation, Sports, Self-Driving Vehicles, Virtual-Assistants, Space, Social-media, etc. This paper examines different aspects of Artificial intelligence, its origin, applications, some different AI tools, etc.

INTRODUCTION

Artificial intelligence is an intelligent mechanism which perceives environment and make decisions and perform actions accordingly. Artificial Intelligence is a property of Machines computer programs and system functions to perform intellectual in creative functions of person and independently find best possible way to creatively solve problems. Artificial intelligence tools including machine learning, Deep learning, Predictive analysis, Neural network intends to improve planning, reasoning, learning and thinking, ability of computers and machines.

1955: First AI program named news Logic Theorist was made by Allen Newell and Herbert Simon.

1956: Word AI was first used by computer scientist John McCarthy at Darthmouth conference.

1966: First Chat Bot named ELISA was made by Joseph Weizenbaum. 1988: First Intelligent humanoid robot was built in Japan named WABOT-1.

1974 to 1980: Which time span is known as first AI winter since research on artificial intelligence was getting less funds from Government.

1980: First National Conference of American Association of artificial intelligence was held at Stanford University.
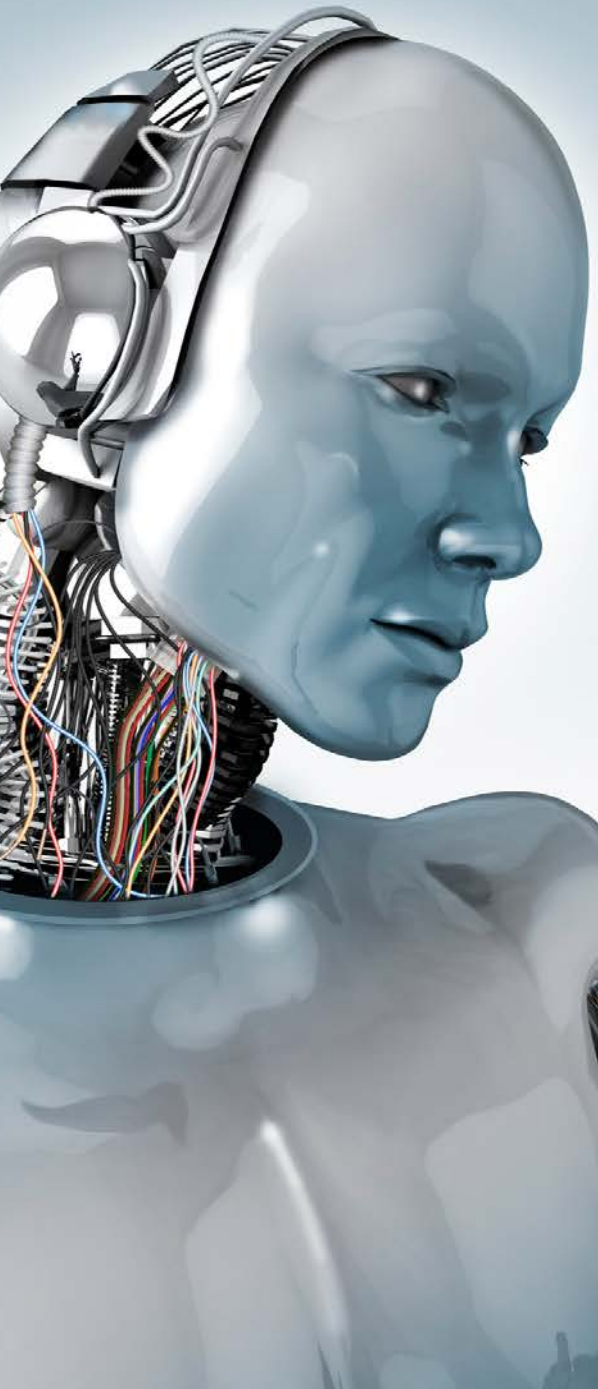
1980 to 1987: Some expert AI programs were built to emulate decision making ability.

1987 to 1993: This time is known as second AI winter since funds getting from Government and private organisations were reduced during this time span.

1993 Onwards: AI is showing a good growth and involvement in human life.

APPLICATIONS OF AI

1. Self-Driving Vehicles Automated self driving vehicles contains different sensors like LIDAR, camera, radar, ultrasonic sensors, Emaps, wheel encoder, GPS, etc. Artificial intelligence receives and compiles input from all such sensors and take decisions accordingly in order to drive the car independently avoiding accidents. Considering future of self driving vehicles many different Giant Companies like Tata, Tesla, etc. are working on self driving Vehicles.

2. Manufacturing and Production With emergence of fourth industrial revolution manufacturers are investing in Technologies like Artificial Intelligence and Machine Learning to bring down the production cost. In Manufacturing Industry Artificial Intelligence helps in predictive maintenance, generating designs, price forecasting of raw material, quality assurance, inventory management, process optimisation, product development, etc.

3. Digital Assistants Such devices are completely based on artificial intelligence. A report by Google shows that almost 27% of online global population uses voice search in their phones. These voice assistants always keeps on learning by machine learning process, Upgrading in order to provide a personalized experience to each and every individual user. Siri by Apple, Google Assistant by Google, Bixby by Samsung, Alexa by Amazon are some examples of such voice assistants.

4. Game Development 3D visualisation techniques, Physics Based stimuli and more recently virtual reality and Augmented reality are being used in game designing. From 2008 onwards Game Development Industry is showing exponential growth and will become a 385B $ industry by 2030. AI is making Revolutionary changes in gaming industry. The NineHertz, iTechArt, Activision Blizzard, Gameloft, Sony interactive entertainment and many other game developing companies are using Artificial Intelligence in Gaming industry.

5. **Space Exploration** Government and Agencies have been leveraging AI Technologies since a long time. In 2018 NASA awarded 330000 $ as a research grant to a team to develop an AI to guide the ships through space debris. Artificial intelligence is also used in simulations to train Astronauts. ISRO, NASA, Blue Origin, Virgin Galactic, etc are some giant companies using Artificial Intelligence excessively and successfully in space programs.

6. **Social Media** Artificial intelligence collects user-generated content and data from social media channels and history by which Social media provides relevant experience and advertisements to users. Google, Microsoft, Amazon and all other giant websites present on Internet keeps a track on social media activities of each and every individual with help of artificial intelligence, thereby improving user experience.

7. **Healthcare** Artificial intelligence is used in surgeries, image processing and many different critical works in Healthcare industry. Virtual AI includes Informatics from deep learning applications, such as Electronic Health Records (EHR), etc. Drug designing to cure various diseases has become easy with help of Artificial intelligence computer programs.

Artificial intelligence is showing a great growth in past few years widely used in Data analytics, manufacturing industries, self driving vehicles, digital assistants, space exploration, automating business processes, Healthcare Services and many other different industries like education automobile, social media, and many more. Google, Facebook, Amazon, Metaverse, TATA, ISRO, NASA, SpaceX, Tesla, will probably use and dominate Artificial Intelligence in various respective fields. There are some disadvantages of artificial intelligence, but they are very less compared to its advantages.f body text

KILL CUT EAT

BY ABHIRAJ CHAVAN

" I just felt like chopping her up, and eating her. Then I cut a piece of her arm and her left breast which I cooked in the kitchen. Then I ate her breast."

Kidnapping , cannibalism, rape , pedophilia , serial murder, necrophilia this case has it all. The Nithari case is one of the most heinous and gruesome of 2006. Nithari is a village in the city of Noida (Delhi).. The case made headlines due to the brutality and rarity of the crimes. The case was brought to light after a string of disappearances of children (both boys and girls) and teenagers from the Nithari village in 2005 and 2006. The investigation of this case eventually led to the tracing of Moninder Singh Pandher's bungalow, which caused the disappearance mystery of the Nithari village to unfold one step at a

Time Timeline of the case -

2003: A disproportionately large number of women and children were reported missing from Sector 31 of Noida's Nithari village. Surinder Koli's arrival as a domestic servant of Moninder Singh Pandher, a businessman and owner of the bungalow number D-5 located in Sector 31 of the Nithari village, predated the fact that women and children were missing from the village. The families of the victims filed numerous missing persons reports with the police, but no action was taken.

February 2005: Rimpa Haldar, a 14-year-old girl, went missing on February 8, 2005. Her parents made several unsuccessful attempts to file a missing person report for her daughter with the police.

March 2005: Some cricket playing boys discovered a hand in a plastic bag in the drain behind D-5. The incident was reported to the police, who declared the hand to be an animal carcass and asked the villagers to forget about it because nothing was wrong. This is supported by prosecution witness statements .

2006:

◦ On May 7, 2006, a girl named Payal informed her father Nand Lal that she was going to the Moninder Singh Pandher bungalow, but she then went missing. Her father went to look for her in D-5, where Pandher and his servant Koli lived. Pandher was not in Noida on that particular day, and Koli denied any knowledge of Payal.

◦ Nand Lal went to the police station to file a report about his missing daughter, but the officers refused to do so. Tired of visiting the police and Pandher for a month, he approached the then-Noida SSP for assistance in June 2006.

◦ The SSP directed that Nand Lal's complaint about his missing daughter be registered and that an investigation be launched. Police discovered that Payal's phone was still in use and tracked down its location. Checking the call details of Payal's phone number led them to Koli, who had called her the day before she went missing.

◦ Koli was arrested by police for further investigation, but Pandher quickly had him released. The police were unable to uncover anything noteworthy that could lead them to Payal's whereabouts, but Koli's involvement in the case was clear.

◦ Nand Lal approached the court on October 7, 2006, after being dissatisfied with the police investigation into the case. The court ordered that the case be investigated by the police. During their investigation, police discovered a large number of plastic bags filled with human skeletons from the drain behind the bungalow.

◦ On December 29, 2006, Pandher, the owner of the bungalow, and his servant Koli were arrested. On December 30, 2006, more skeletons were discovered in the drain. There was little evidence found against either suspect.

◦ The mere discovery of skeletons did not suffice to convict them of murder. However, the discovery sparked outrage throughout the country, and people began to demand justice.

◦ The investigation into Payal's case has revealed information about Nithari's missing children and teenagers. Under pressure from the public, the Uttar Pradesh government turned over the case to the CBI on January 11, 2007.

Kohli's confession:

Even after 60 days in police custody, the CBI was unable to find any evidence against Koli. On 27 February 2007, they applied to the Magistrate to have Koli's confession recorded, stating that he was willing to confess. The magistrate recorded Koli's confession. Koli detailed how he lured the victims (9 female children, 2 male children, and 5 adult women) into the house, murdered them, attempted to have sex with inert bodies, chopped the dead bodies, ate their body parts, and threw the remains in the drain at the back of the bungalow in his confession.

"I just felt like chopping her up, and eating her. Then I cut a piece of her arm and her left breast which I cooked in the kitchen. Then I ate her breast." These are the words of a man who changed the meaning of a psychopath for most Indians.

 Koli was a servant at Pandher's house, according to his confession. Pandher lived alone in the bungalow, while his family lived in Chandigarh. Aside from them, Pandher employed another domestic servant named Maya Sarkar, a gardener, and two drivers in his home. Koli committed all of the murders in the drawing room between 9 a.m. and 4 p.m. He would carry the body upstairs to a bathroom after each killing and chop it up into small pieces. He would leave the bathroom in that state, and only after cooking and eating some of the body parts would he clean up the bathroom and drawing room. It's difficult to believe that neither Pandher nor any of his employees noticed any of these things during any of the murders. None were called as witnesses at the trial.

Judgement:

A special sessions court in Ghaziabad found both the accused—Moninder Singh Pandher and his domestic servant Surinder Koli—guilty of the murder of Rimpa Haldar,on February 12, 2009. This verdict left the Central Bureau of Investigation (CBI) red-faced, as the CBI had previously given Moninder Singh Pandher a clean chit 3. Pandher (left) and Kohli (right) in all of its chargesheets. The accused, Moninder Singh Pandher and Surinder Koli, were both sentenced to death on February 13, 2009, because the case was classified as "rarest of rare.
16 cases were filed against Kohli and pandher . Till date he's been awarded the death penalty by the trial court in Ghaziabad in 12 cases except the thirteenth one.

NEURALINK

BY SAGAR GUPTA

The name neuralink comes from two words neura which means neurons is the fundamental units of the brain and nervous system and link which means connection And the whole word neuralink means connection between human brain and computers. To understand the neuralink first we have to understand the human brain. Neuralink is a device that, once implanted in the human brain, would allow a computer to translate a person's thoughts into action. It is a system that involves ultra-thin probes that will be inserted into the brain, a neurosurgical robot that will perform the operations and a high-density electronic system capable of processing information from neurons

Understanding the brain and neurons

A brain is a complex organ that controls thought, memory, emotion, touch, motor skills, vision, breathing, temperature, hunger and every process that regulates our body. There Are 86 Billion Neurons in Your Brain.Neurons send and receive information. Although neurons come in many different types, they generally have three parts: a dendrite which receives a signal, a cell body called a soma which computes the signal, and an axon which sends a signal out. The neurons of your brain connect to each other to send and receive signals through axondendrite connections called synapses. Action potentials cause synapses to release neurotransmitters. These small molecules bind to receptors on dendrites, opening channels that cause current to flow across the neuron's membrane. When a neuron receives the 'right' combination of spatiotemporal synaptic input, it initiates an action potential.

How to record electrical signals in the brain?

We place electrodes near neurons in order to detect action potentials. Recording from many neurons allows us to decode the information represented by those cells. In the movement-related areas of the brain, for example, neurons represent intended movements. There are neurons in the brain that carry information about everything we see, feel, touch, or think.
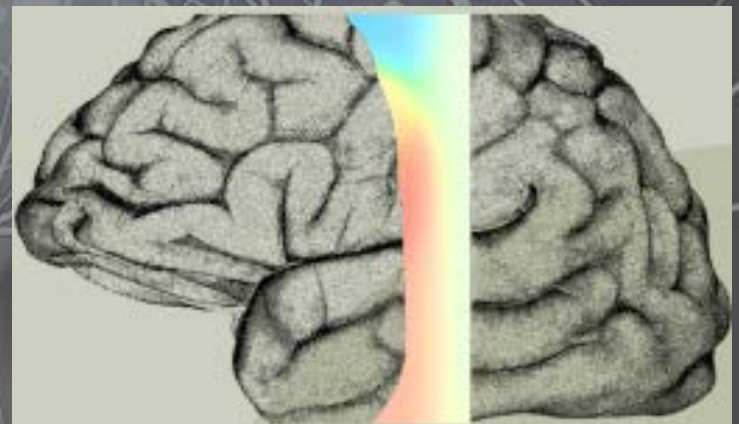
WHY DO ELECTRODES NEED TO BE CONNECTED DIRECTLY TO THE BRAIN?

Neural activity can be monitored from outside the head using noninvasive techniques such as EEG. With these techniques, each channel records the summed activity of millions of neurons, which means the details are blurred away. Imagine experiencing a sports event through a microphone placed outside the stadium. From the roars or groans of the crowd you can tell when something good or bad happens to the home team, but you'll have a hard time distinguishing whether they scored or made a great defensive play. And you certainly wouldn't be able to hear what individual people were saying about the game. The same is true for recording from the brain: recordings made at a distance provide some useful, high-level information, but to access fine-scale information, you need to be close to the source. Here, that means recording action potentials, or voltage "spikes," from individual neurons. Currently, that can only be done by placing electrodes inside the brain.

What is human brain interface?

A brain–computer interface (BCI), sometimes called a brain–machine interface (BMI), is a direct communication pathway between the brain's electrical activity and an external device, most commonly a computer or robotic limb
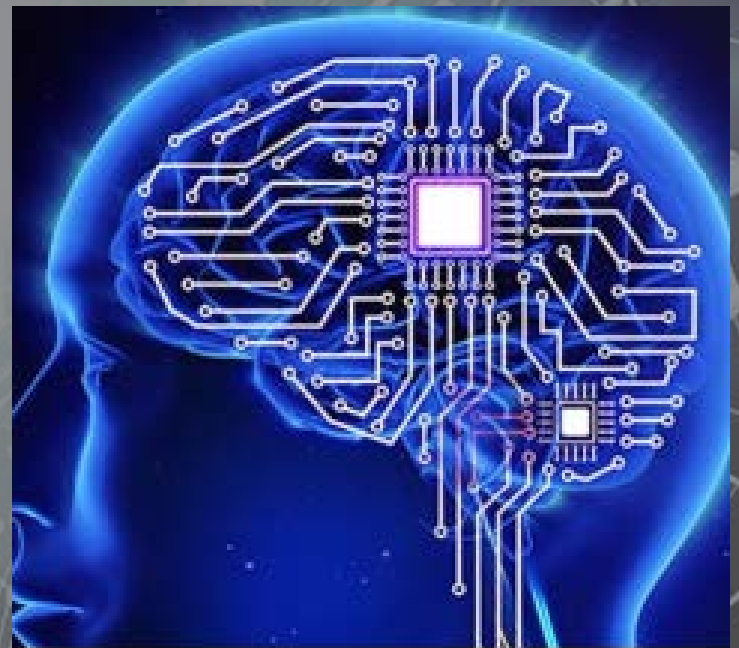
The Link

We're designing the first neural implant that will let you control a computer or mobile device anywhere you go. Micron-scale threads are inserted into areas of the brain that control movement. Each thread contains many electrodes and connects them to an implant, the Link.

What is Link ?

Sealed, implanted device that processes, stimulates, and transmits neural signals.

What is NEURAL THREADS?

Each small and flexible thread contains many electrodes for detecting neural signals.

what are Chargers?

Compact inductive charger wirelessly connects to the implant to charge the battery from the outside.

Engineering with brain

engineering techniques to understand, repair, replace, or enhance neural systems

A Direct Link Between the Brain & Everyday Technology

The initial goal of our technology will be to help people with paralysis to regain independence through the control of computers and mobile devices. Our devices are designed to give people the ability to communicate more easily via text or speech synthesis, to follow their curiosity on the web, or to express their creativity through photography, art, or writing apps

The Future of Neural Engineering

The Link is a starting point for a new kind of brain interface. As our technology develops, we will be able to increase the channels of communication with the brain, accessing more brain areas and new kinds of neural information. This technology has the potential to treat a wide range of neurological disorders, to restore sensory and movement function, and eventually to expand how we interact with each other, with the world, and with ourselves.

Hindu Philosophy

BY VARUN SODHANI

Hindu history is an iridescent and opulent celebration of all the greatest things Indian civilization has to offer. Distinguished personalities from past eras instill a deep appreciation for the life and times when piousness and virtuousness ran through generations of industrious workers and kings alike. From Kashmir and modern-day Afghanistan in the North to the southernmost tip of the Indian subcontinent, from the deserts of Gujarat and Rajasthan in the West to Indonesia in the East, our country stood tall and proud as the strongest conclave of empires and kingdoms much before other civilizations had moved past mud huts as their greatest architectural feat. All of this was made possible by effective administration through laws that were crafted on the Hindu moral code of Manu. Laws that sustained the most prosperous and expansive empires to the smallest yet tight-knit kingdoms. These kingdoms had a lot in common but the omnipresent factor was belief in some or the other sect of Hinduism.

With passage of time and increasing entropy in the minds of mischievous people, these eternal laws and the figures behind them, began to be hated by few. This hatred culminated in lots of lies being peddled under the guise of truth which led to the reinvigoration of several Hindu schools of thought and the demise of some. These illustrious seers have been grouped by modern historians under the misnomer, "Bhakti Cult" but it is much more fitting to let each of them shine on their own without maligning them. These saints travelled throughout Bharatvarsh to propound their interpretations of Vedanta (Uttara Mīmāṃsā) and Prasthanatrayi (lit. 3 axioms which include Upanishads, Brahma Sutras and The Bhagavad Gita).
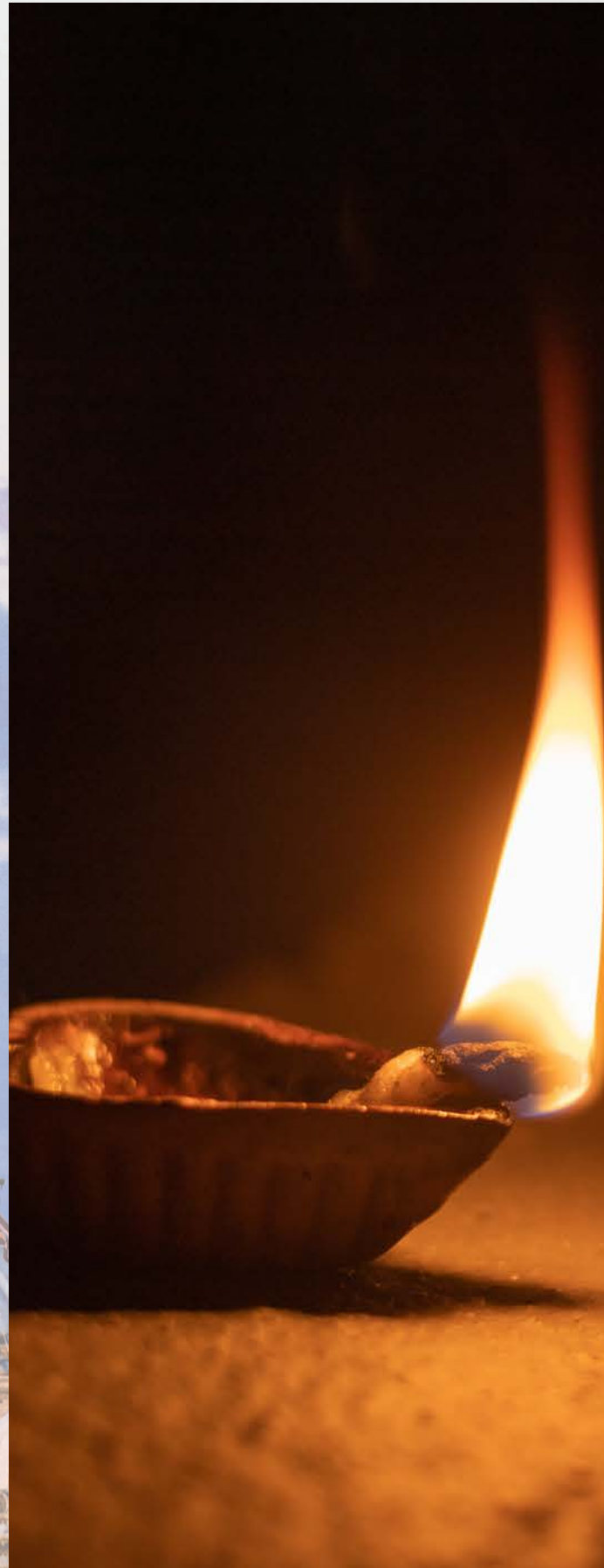
The most influential and important saints to philosophize on these texts were-

● Advait (complete non-dualism) school- Of which Sri Adi Shankaracharya is the most prominent one. This school philosophizes that the singular Brahman manifests as individual jivātmans under the principle of maya which renders the apparent individuals ignorant about their Divine Self. Since there is zero inherent "realness" to this reality, this is quite close to mayavad. Though this school seems to have certain Madhyamaka Buddhist influences, it is entirely Vedantic in nature. Infact, Sri Adi Shankaracharya defeated scores of nihilistic Buddhist scholars while travelling the length and breadth of Bharat, so much so that his glory is captured in Madhaviya Shankara Digvijayam (lit. victorious over everyone)

● Vishisht-Advait (non-dualism of Brahman despite it's multiplicity) school- Of which Sri Ramananda (Ramanandi sampradaya) and Sri Ramanujacharya (Sri Vaishnava Sampradaya) are the most prominent ones. This school propounds the absolutism of Brahman but with a characteristic multiplicity originating and terminating in one Supreme Reality in the form of either Shriman Narayana or Sri Rama (as an avatar of Shri Vishnu). Philosophers of this school preach unity among the Prashthanatrayi by interpreting all deities to be a form of the Supreme One and not as different deities .

● Dvait-Advait (dualistic non-dualism) school- Of which Sri Nimbarkacharya is the most prominent one. According to this school, three modes of existence are possible, ie. Ishwar (independent existence), chit (jivātma) and achit (lifeless matter) both of which are dependent on the singular independent existence, yet are separated from Ishwar. Followers of Nimbarkacharya accept Shri Krishna and Radha as their supreme objects of devotion in the celestial abode of Vaikunth.

● Achintya Bhed-Abhed (inconceivable dualistic non-dualism) school- Of which Sri Chaitaniya Mahaprabhu is the most prominent one. This school accepts the interconnection between chit, achit and Ishwar via direct oneness (but not completeness) and also via eternal separation between Creator and creation. This means that chit is part of (or one with) Ishwar but is only an infinitesimal expression of His infinite opulence, which is ultimately inconceivable to the chit due to its ignorance of the Whole.

● Dvait or Tattvavada (dualism with unequalled status of Ishwar in the form of Shriman Narayana) school- Of which Sri Madhavacharya is the most prominent one. This school strictly accepts the independent and real existence (as opposed to apparent existence under advait) of chit and achit from Ishwar (Brahman) where Ishwar is unparalleled, unequalled and supreme. This independent and unparalleled being is Shri Vishnu, who is the creator of all chit and achit existence and on whom they are completely dependent.

● Shuddhadvait (purified non-dualism)- Of which Sri Vallabhacharya is the most prominent one. This school is different from advait because it accepts that the jivātman is a part of Brahman but is not clouded by avidya or ignorance, but only one attribute out of Sat-Chit-Anand is imperceptible, which is anand (bliss). The ātman takes part in the leela and enjoys it simultaneously. This school follows Pushtimarg where a even a householder with various other tasks can achieve service of the singular divine Sri Krishna in his holy abode of Goloka, which is even above the divine Vaikunth of Sri Vishnu, Satya Loka of Brahma and Kailash, abode of Shiva. The only path to achieving anand in Kaliyuga is through complete surrender and devotion to Sri Krishna. Out of all of these paths, the most suitable path to ultimate bliss in Kaliyuga is Shuddhadvait characterised by bhakti of the supreme in the form of Shri Krishna. If that is not for you, Hindu philosophy finds a way for everyone who wishes to question the nature and origin of life, its relation with the universe and our relation with ourselves.

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Thank You!
Regards,
The Byte Core

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