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BITWISE

VOL. 5

AI impact in filmmaking in the modern world

Impact of AI on Film-making
is increasing movies like Star
Wars, Star Trek etc.

ORDINATEUR
THE COMPUTER SCIENCE SOCIETY
HANSRAJ COLLEGE

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WORDS OF ENCOURAGEMENT



PROF. (DR.) RAMA
PRINCIPAL
HANSRAJ COLLEGE

"Education is the manifestation of the perfection already in man." - Swami Dayanand Saraswati

Every student of Hansraj College can undoubtedly relate to this sentiment. Hansraj College is among the top institutions in India, consistently ranked 12th by NIRF and accredited with an A++ grade by NAAC. The college has always been committed to encouraging and supporting students in every possible way, ensuring that they excel in all aspects of their lives.

I would like to take this opportunity to extend my heartfelt congratulations to the Computer Science department of our college as they proudly unveil the 5th edition of their annual magazine, BITWISE. This publication stands as a testament to the remarkable blend of innovation, creativity, and tireless dedication that the students and faculty have consistently demonstrated. It not only highlights their academic achievements but also showcases their passion for technology and the spirit of teamwork.

I am particularly delighted that this edition features contributions from the students who will soon graduate as part of the first batch under the National Education Policy (NEP). These students are trailblazers in this new curriculum that has been open to a multidisciplinary approach blurring lines between technical excellence and holistic learning.

Also, I must take a moment to commend the Computer Science department for their continuous commitment to excellence. Their enthusiasm, vision, and ability to inspire students have played a pivotal role in bringing this magazine to life. My sincere congratulations to everyone involved in this outstanding achievement.

Message from Teacher-In-Charge



**PROF.(DR.) BALJEET
KAUR**
HANSRAJ COLLEGE

As we reflect on another year filled with achievements and shared experiences, I am overwhelmed with pride and gratitude for our incredible journey together. The past year has been a testament to the strength of our department, not just in the face of academic challenges but also in the way we've come together as a community.

Your tireless efforts—whether organizing successful hackathons, insightful workshops, or even cultural events that brought a sense of joy and togetherness to our department—have left an indelible mark. These moments remind us that beyond the lectures and coding sessions, it's the relationships we build, the challenges we face together, and the memories we create that truly define our time here. Even as we embraced the changes brought by the New Education Policy and faced the lingering effects of the pandemic, I have seen each of you rise to the occasion with resilience, creativity, and unwavering dedication. It is moments like these that show the true spirit of our department—one that is defined not by adversity but by how we overcome it together. This academic year is especially significant as we celebrated the Platinum Jubilee of Hansraj College—a milestone that reminds us of the legacy we are all part of. I want to extend my heartfelt thanks to each and every one of you—students, teachers, non-teaching staff, and alumni. Your contributions, big or small, have shaped not only our department but also the rich history of our college.

As we look forward, I am filled with optimism. The achievements we celebrate today are just the beginning. With the passion and dedication you all have shown, I am certain that even greater heights await us. Let us continue to support one another, dream big, and make the most of the opportunities ahead.

Message from Chief Editor of BitWise



DR. HARMEET KAUR
HANSRAJ COLLEGE

It gives me immense pleasure to introduce the 5th edition of Bitwise - the annual publication of the Computer Science Department at Hansraj College - for the academic year 2024-25. There is no doubt that this magazine is an expression of the passion, innovation, and hard way put up by our students and faculty alike, throughout the year.

This academic year has been remarkable, characterized by a strong sense of innovation, teamwork, and personal growth. Our students have embraced every chance to expand their horizons, whether through their studies or a variety of events and competitions that have fostered creative

thinking. These activities have nurtured a vibrant culture of innovation, encouraging students to investigate new concepts, tackle real-world issues, and utilize their skills well beyond the classroom. This edition showcases not just their technical accomplishments but also their persistent curiosity and problem-solving approach.

Change is the only constant in the fast-moving world of technology, and the National Education Policy (NEP) has brought its own set of changes. Our students have done a great job of adjusting to the new system, taking on a more flexible and broad approach to learning. I encourage them to keep their curiosity alive and embrace multidisciplinary learning and skill development. With the NEP influencing our education - embracing adaptability, maintaining a lifelong eagerness to learn, and viewing challenges as opportunities should be the core principles guiding the future of computer science.

I thank the editorial team, contributors, and every other person who has contributed to bringing this edition of Bitwise to life. Bitwise will forever stand as a stepping stone to the department's excellence and innovations. As we move forward, I encourage each one of you to explore new areas of interest, collaborate on impactful projects, and together foster a culture of innovation. Keep pushing your limits and believing in your abilities - you're capable of amazing things!

I hope this edition of Bitwise sparks your imagination and reminds you of the exciting potential that lies ahead for our students and the dynamic realm of computer science.

Message from BitWise Convener



DR. MANJU
HANSRAJ COLLEGE

It is with great pride that we present the Fifth edition of Bitwise, the annual publication of the Computer Science Department, at Hansraj College. This magazine stands as a testament to the remarkable achievements of our students and faculty. Beyond being a compilation of articles, it attests to the dedication, challenges, and unwavering commitment to advancing knowledge in the ever-evolving field of computer science. Our students have dedicated their every strength, always pushing the boundary lines of what technology could accomplish. I present my sincere admiration for the achievements of students including innovative inventions, outstanding

performances in competitions and hackathons, and remarkable projects, that indeed demonstrate their ability to tackle complex problems. Furthermore, their exceptional adaptability and excellence in diverse fields, including internships and placements, is a testament to the unique blend of intellect and imagination that truly distinguishes us as a community. A very important thing to note about our department is its great culture of cooperation. Be it in classrooms, labs, or interdepartmental competitions, students have always realized the power of teamwork. The spirit of learning from one another, exchanging ideas, and building solutions together, has always crowned the success of every venture. It is through this cooperation that we have nurtured an environment where knowledge grows and ideas flourish.

As we unfold the pages from this edition, from artificial intelligence and data science to the ethics of technology, these contributions mark the forefront of innovation. We sincerely hope that while in the execution of your reading, you will be propelled by an urge to continue the quest of your own.

On behalf of the entire Bitwise editorial team, I extend my sincerest gratitude to every student and faculty member your relentless struggle, commitment, and ingenuity have made this edition a testimony to the excellence we strive for. I encourage the students to keep on exercising curiosity and perseverance as these traits are meant to be your pillars while you venture into the unknown. Together, we take pride in a vibrant and dynamic community and look forward to an exciting future. Thank you for offering your continuing support and enthusiasm, and we hope that you will enjoy this year's edition of Bitwise.

ANNUAL REPORT 2023-24

The Computer Science Department, Hansraj College

This academic year was a remarkable period for Ordinateur, the Computer Science Society of Hansraj College. The society successfully organized a series of impactful events that enriched the academic and professional journeys of its members. The dedicated team members and volunteers of Ordinateur demonstrated exceptional commitment by organizing a diverse array of events that significantly enhanced the academic journey for all participants.

The year commenced with an inspiring event on 12th October 2023, featuring the launch of Bitwise Volume 4, the society's annual computer science magazine. This occasion included an expert talk titled "Inroads into Research" by Prof. (Dr.) Baljeet Kaur. Prof. Kaur commended the magazine's focus on Artificial Intelligence and Machine Learning and provided invaluable insights into how undergraduate students can embark on research paths. The event concluded with a celebratory launch, highlighting the contributions of the student writers. In February 2024, Ordinateur organized the CodeCrash-Codeathon 2024, a highly competitive event designed to assess the coding skills and problem-solving abilities of participants. Out of 159 participants, 30 students advanced to the final round on 17th February, where they tackled complex coding challenges on HackerRank. The society continued its commitment to student development with a Mentor Session held on 24th April 2024. Esteemed alumni, currently working in leading firms, shared their experiences and provided valuable guidance on effective placement strategies. On 6th May 2024, Ordinateur hosted a Batch Photograph and Scribble Day, creating a memorable experience for the outgoing class of 2021-2024. Students gathered in coordinated attire for a formal batch photograph, capturing a significant moment in their academic journey. In a continued effort to support student development, Ordinateur organized a Webinar on Resume Building on 26th April 2024 with career coach Aditya Vijay. The session provided essential tips on crafting effective resumes and covered common pitfalls to avoid. The highlight of the year was the Yuvamanthan Hackathon 2024, which brought together over 1021 students to showcase their innovative ideas and technical skills.

The academic year 2023-2024 was characterized by Ordinateur's unwavering dedication to fostering a dynamic learning environment. Through a variety of events, the society not only enhanced technical skills but also strengthened the bonds among students.



LETTER FROM EDITOR

I still remember the first time I laid my hands on a computer, back in my school days in Uttarakhand. It was like discovering a whole new world, full of possibilities and promise. Fast forward to today, and I'm proud to be pursuing my passion for Computer Science at one of the most prestigious institutions in the University of Delhi. As I look around, I'm struck by the sheer diversity of our community – students from all walks of life, united by a shared passion for technology and innovation.

And yet, amidst all the excitement, I'm also aware of the challenges that lie ahead. The world of technology is rapidly changing, and it's easy to get left behind. That's why BITWISE is so important – it's a platform for us to come together and explore the complexities of technology, celebrate its triumphs, and critique its limitations. In this edition, we delve into the latest advancements in AI, cloud computing, Deepfakes, and VR/AR, and explore their potential to shape our future.

From the intricacies of machine learning to the possibilities of virtual reality, we've got it all covered. I hope you find it informative and thought-provoking. And to my team, I'd like to say thank you for your hard work and dedication. You've made this edition possible, and I'm grateful for your contributions.

I would also like to express my sincere gratitude to our esteemed faculty members and our Principal, Dr. Rama, for their unwavering support and guidance throughout this journey. Finally, to our valued readers, I hope this edition of BITWISE inspires you to explore, learn, and innovate, and that it sparks curiosity in you to shape the future of technology.

Virendra Lal

Editorial Head

OFFICE BEARERS 2023-24



Varun Gaur
President



Aditya Bhadoria
Vice President



Shreeya Mishra
General Secretary



Aryan Aggarwal
Treasurer



Parth Ratra
Joint Secretary

ACHIEVEMENTS



1. ACADEMIC

INTERNSHIPS AND PLACEMENTS

- Dhruv Singh was placed at DEshaw as a tech associate with a package of 22.5 LPA.
- Shreyas Singh was offered a position as a Relationship Manager during ICICI Bank's on-campus placement drive. He also secured the position of Chief Technology Officer at AdimediaX through an off-campus placement process.
- Saloni Kaushik interned at Muskurahat Foundation.
- Akansha Bharti interned at CoziQ Experiences.
- Abhishek Bhalse received a job offer letter from Contour Education, Australia.
- Rohit Kumar got an on-campus placement by InternsElite Edutech Private Limited for the role of Business Development Associate.
- Shreeya Mishra interned as Community Coordinator for Web3Entirety.
- Virendra Lal interned as a graphic designer at Socio Maverick.

COMPETITIONS

- Sahil Gupta secured 1st place in Code Twist and Byte Grabble, and 2nd place in Code Auction, Code Uncode, and Stock Shock.
- Shreyas Singh won the HackWithMait Hackathon under Price Track Tezos.
- Yashasvi and Vineet Kumar Kankerwal were finalists at DPBH 2023, presenting an innovative AI solution in the Dark Patterns Buster Hackathon.
- Ronak Seth won 1st place in Byte Grabble (Ram Lal Anand College), Code Twist 2.0 (Shaheed Sukhdev College of Business Studies), and the treasure hunt (E-cell, Ram Lal Anand College), and 2nd place in Stock Shock (Ecospire, Shaheed Bhagat Singh College) and Code Auction (DU, Sankalan'24).
- Abhishek Bhalse got 1st prize in the Inter-NSS PPT competition conducted by NSS Hansraj.
- Aditya Bhardwaj got 1st prize in Pitch Perfect conducted by E-cell, FMS.

OTHERS

- Thejas Suresh received the Excellence in Education Award from the Directorate of Education, NCT Delhi, and the Reliance Foundation Undergraduate Scholarship for 2023-24.
- Shreyas Singh was invited as Guest Speaker at IIIT Delhi to deliver a talk on "Blockchain basics and Ethereum".
- Aditya Bhardwaj ideated and Pitched an LLM-powered communication app at institutions like IIT Delhi, SRCC, and FMS Delhi, and secured a mentorship offer from Crest Innovations Foundation.
- Subhajit Das was selected for the Sakura Science Exchange Program, an opportunity offered by Delhi University and managed by JST (Japanese Science and Technology Agency).
- Vineet Kumar Kankerwal presented his research paper, "Intelliguard Webscan: Uncovering Dark Patterns on E-Commerce Websites," at the 4th International Conference on ICT for Digital, Smart, and Sustainable Development at Jamia Hamdard.
- Campus Navigation Project project focuses on enhancing campus navigation by strategically placing QR codes at key locations. Members involved in this project handle various roles, one team creates detailed text scripts, which are then converted to audio using Text-to-Speech technology, providing information about nearby locations and directions. Another team manages the physical installation of QR codes throughout the campus, ensuring accessibility at each location. The result is an easy-to-use navigation aid, where anyone scanning a QR code receives immediate audio guidance, making it simple to find their way around.
- Aditya Bhardwaj secured a referral as 1 of 3 teams from Delhi University to the final round of WTFund (backed by Nikhil Kamath)

2. CO-CURRICULAR

- Deepanshu Pundir got a bronze medal in the Delhi University inter-college kabaddi championship.
- Aayaan Mukherjee and his team from the CS department secured 3rd place in the Khelo Hansraj Football Competition.
- Saloni Kaushik placed in the top 5 at the Campus Talent Contest and won 1st place in the solo dance competition at Bennett University (Uphoria 2024).
- Virendra Lal and his team were the runners-up in the volleyball competition at Khelo Hansraj.

MELTDOWN

-Divyanshu Rangad

Imagine a bustling city where every building relies on a single power plant. One day, the plant goes dark, plunging the metropolis into chaos. This isn't just a thriller plot—it mirrors the recent Microsoft outage. This unexpected blackout exposed a critical flaw in our digital infrastructure: the vulnerability of centralized cloud systems. This disruption affected Microsoft 365 services, including Outlook, Teams, and OneDrive, causing substantial operational challenges for businesses globally. Services were disrupted for countless users, prompting a deeper examination of tech policy and governance. Let's unravel insights from this cloud catastrophe and consider what it means for the future of our digital resilience.

Centralization Systems: Blessing in Disguise?

Centralized cloud services, such as those offered by Microsoft, have always held many advantages in terms of scalability, availability, and all-in-one solutions. Nevertheless, this same centralization also creates a single point of failure. Many businesses, governments, and other organizations have critical internet traffic that flows through these providers, so the effects of an outage can be felt at many levels.

This Microsoft outage really showed how reliant our digital infrastructures are on a few key players. This dependence is so vulnerable that it should remind you of the importance of diversity and redundancy in digital systems. Organizations can mitigate the risk of centralization by spreading services across multiple providers and incorporating fail-safes.

The need for robust risk management: why?

The top answer is prevention, and the second one is response, as controlling risk plays a key role in avoiding outages. The Microsoft incident highlighted the need to ensure organizations are prepared with strong disaster recovery plans and monitor their systems continuously in real time. Organizations must take the preemptive measures of identifying risks and taking steps relative to mitigating them before they go on a rampage, causing heavy disruptions.

Manage It, Discontinue Potentially insecure connections to

cloud processing providers should be the subject of routine audits, demanding adherence with higher degrees of security and resilience. Businesses should invest in robust incident response playbooks, which provide specific instructions for how they will respond to an outage so that the service can be restored as quickly and smoothly as possible.

Enhancing Resilience Through Policy

Technology policy and governance should be updated for the challenge of centralized cloud services. Technology policy and governance need updating to face the challenge of centralized cloud services. Governments and regulatory bodies should consider frameworks that engender resilience and security in digital infrastructure. Examples may include standardization of redundancy, obligatory transparency on the part of the cloud providers, and advocacy for the wide diffusion of decentralized technologies.

It can also be integral to policies supporting innovation in resilience technologies such as edge computing and distributed ledger technologies. Such technologies reduce reliance on centralized systems because data and processing power are spread over many nodes, thereby increasing the resiliency of the overall system.

Learning from Microsoft: Best Practices

The Microsoft outage has some unbelievably valuable lessons for any organization seeking to enhance its digital resilience. Some of the best practices are as follows:

1. Diversification of cloud providers: Dependence on one cloud provider: Dependence on one cloud provider is a no-go. Distribute risks through multiple providers to ensure business continuity in case one goes down.
2. Redundancies: Built-in redundancies in the system—backup servers, duplicate data centers, and alternative channels of communication.
3. Continuous Monitoring: Advanced monitoring tools allow the identification and rectification of concerns in real time. Difficult issues that could have otherwise become potential major outages can hence be kept at bay by early detection.
4. Regular Auditing and Updating: Regular auditing of your cloud infrastructure and updating risk management strategies against emerging threats should be done.
5. Incident Response Plans: Incident response plans should be drawn up and changed regularly to let all stakeholders know their roles and responsibilities during an outage.

The recent Microsoft outage brought to the forefront an overly critical point on cloud vulnerability. As we further integrate into digital systems, how those vulnerabilities are addressed—by robust risk management, diversified infrastructure, and prescient policy—will become important. In learning from the Microsoft outage and other incidents and applying best practices in this area, we seek a more resilient and secure digital future.

ARE AI AND WAR TECH GAMES THE FUTURE OF WARFARE? THE ALARMING TRANSFORMATION OF THE INDIAN MILITARY !

- Saloni Kaushik

The world of warfare is evolving, and artificial intelligence (AI) is at the center of this transformation. At the AI Defense Exhibition in New Delhi in July 2022, India's Defense Minister Rajnath Singh introduced 75 AI products aimed at enhancing military operations. These technologies, developed through a collaboration of the Ministry of Defense, DRDO, and private industries, signal the future of modern warfare for India.

AI in the Indian Military

AI's integration into military operations spans surveillance, logistics, war tactics, and even cybersecurity. AI-based surveillance systems are already monitoring India's borders, utilizing real-time data analysis and facial recognition. By rapidly processing data, AI helps decision-makers act swiftly, identifying threats and

reducing the risk of enemy deception. Logistics and supply chains are also getting an AI upgrade. By predicting demand and optimizing routes, AI ensures timely delivery of essential supplies, keeping the military battle-ready.

Enhancing War Efficiency

In the heat of battle, every second counts. AI assists soldiers by calculating artillery trajectories based on factors like wind speed and temperature, improving precision and reducing human error.

Cybersecurity: A Critical Defense Cybersecurity is key to protecting military assets. AI-powered blockchain technology is being used to secure sensitive communications and defend against cyber attacks from enemies.



Training for the Future: AR, VR, and the Metaverse

Advanced technologies like augmented reality (AR) and virtual reality (VR) are reshaping military training. India's first War Tech center, a collaboration between Rashtriya Raksha University and Tech Mahindra offer simulation-based training. Soldiers now experience realistic battle simulations through the metaverse, preparing for counter-terrorism and counter-insurgency operations.

The Global Trend

India isn't alone in this digital arms race. Countries like the USA, Russia, and the UK have already adopted AI and virtual training methods for their military forces. In the near future, India's paramilitary forces may also benefit from these advancements.

Ethical Concerns and Challenges

While AI brings many advantages, it also poses risks. Autonomous systems could become uncontrollable, and enemy forces could hack into AI-driven military systems, turning assets against their operators. Security leaks from private companies involved in manufacturing military tech are another potential concern.

The Future of Warfare

AI and advanced technologies are shaping the future of global defense. With AI, AR, and VR transforming India's military operations, the nation is becoming more prepared and efficient in dealing with modern threats. However, it's essential to address the risks and ensure robust security protocols to safeguard the nation's military future.

DEEPFAKES

‘AI THAT DECEIVES’

-Kirti Rathi,
Shruti Maurya

Imagine you’ve just started college. Everything’s going great—you’re balancing your studies, making new friends, and enjoying campus life. Then, one day, things take a sharp turn. After a disagreement with a friend, you find yourself the target of jokes and memes in your class group chat. What starts as harmless fun quickly spirals out of control when someone uses widely available deepfake software to create fake videos of you—videos that show you cheating on assignments, bullying others, or worse. These videos spread like wildfire, and soon your reputation is in ruins. Sounds terrifying, right? Unfortunately, with the rise of deepfake technology, scenarios like this are becoming more common. But what exactly are deepfakes, and why are they so dangerous?

What Are Deepfakes?

Deepfakes are AI-generated media that use deep learning—a type of machine learning—to swap faces in videos or alter digital media so well that the fake content appears real. The technology behind deepfakes is impressive, but it also raises serious concerns, especially as it becomes more accessible to the public. The term “deepfake” came from a Reddit user who shared videos that swapped the faces of famous actors. Since then, the technology has evolved, making it easier to create fake videos and photos that look incredibly realistic. But with great power comes great responsibility—or in this case, great risk.

How Do Deepfakes Work?

Deepfakes are created using two key AI components: a generator and a discriminator. The generator creates fake content, while the discriminator tries to figure out if that content is real or fake. Each time the discriminator correctly identifies a fake, the generator learns from the mistake and improves. Together, these two systems form what’s known as a Generative Adversarial Network (GAN), which is responsible for creating the ultra-realistic deepfakes we see today.

How Can You Spot a Deepfake?

Although deepfakes are becoming harder to detect, there are still a few signs that might give them away:

- Awkward facial positioning: If someone’s face is turned in one direction, but their nose points another way, that’s a red flag.
- Unnatural body movements: If the person’s movements look stiff or out of sync, it could be a deepfake.
- Weird skin tones or coloring: Look out for abnormal shadows, skin tones, or strange lighting effects.
- Inconsistent audio: Deepfakes often focus on the visuals and ignore the audio. If the sound doesn’t match the speaker’s mouth movements or the background noise seems odd, that’s a warning sign.
- No blinking: People blink, but many deepfakes don’t include this natural action. If someone in a video doesn’t blink at all, they might not be real.

Fighting Back: The R.E.A.L. Framework

To manage the growing threat of deepfakes, experts have developed the R.E.A.L. framework, which focuses on both detection and prevention:

- Record: Keep original, unaltered content as a reference to verify against potential deepfakes.
- Expose: Raise awareness about deepfakes by identifying and publicizing fake media.
- Advocate: Promote policies and practices that combat deepfake risks and push for transparency.
- Leverage: Use technology, social, and legal resources to counter deepfake threats. This includes partnerships between tech companies, academic institutions, and government agencies.

How Technology is Fighting Back

Several companies and organizations are working on tools to detect and prevent deepfakes:

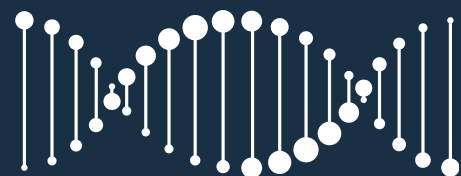
- Google is developing tools to verify speakers through text-to-speech analysis.
- Deeptrace, a startup from Amsterdam, is building AI detection tools similar to an antivirus for deepfakes. DARPA (U.S. Defense Advanced Research Projects Agency) is funding research to create automated screening tools for deepfakes.
- Adobe has introduced technology that lets you add a digital signature to your content, verifying its authenticity. Twitter and Facebook have officially banned malicious deepfakes from their platforms.

The Future of Deepfakes: A Cautionary Tale

As Roy Amara once said, “We tend to overestimate the effect of technology in the short run and underestimate it in the long run.” Deepfakes are no exception. While the technology is still evolving, its potential long-term impact is concerning. From fake news to altered election campaigns, deepfakes could easily be used to deceive voters, disrupt businesses, or even influence global markets.

That’s why it’s crucial for all of us—especially students who are more engaged in the digital world than ever—to stay informed and vigilant. Whether it’s social media or a news outlet, if you see something that seems too wild or shocking to be true, question it. There’s a chance it could be a deepfake.

So, as you navigate the digital age, stay cautious and informed. Deepfakes are powerful tools, but with the right knowledge, we can detect and prevent their misuse.



NAVIGATING CELL AGEING

UNVEILING MYSTERIES WITH BIOINFORMATICS AND MUSIC MAP TECHNOLOGY

-Shivangi Priya

Have you ever wondered why some cells age swiftly while others seem to defy time? Scientists are on a quest to decipher this enigma using cutting-edge technology borrowed from music maps. Let's embark on an intriguing voyage through 'bioinformatics and music map' technology to grasp the intricacies of divergent cell aging.

1. Music Maps: Translating Patterns into Insights:

Think of a map that sorts regions based on similarities. Likewise, imagine a digital cartographer meticulously plotting musical compositions based on their rhythmic patterns, melodic structures, and genre classifications. This is what music maps do.

They help us see patterns in music and discover new songs we might like. Technology has changed the way we organize and explore music, making it easier to find songs based on different features like genre, mood, and tempo.

2. Unlocking the Technical Significance in Music Mapping:

First, computers analyze the audio of songs to get details like rhythm, key, and beat. Tools like LibROSA help extract this information. We also use music databases to gather extra details about songs, such as the artist, album, and release date.

Next, advanced algorithms help us find similarities and differences between songs. For example, cosine similarity and Euclidean distance measure how close or far apart songs are based on their features. Techniques like Principal Component Analysis (PCA) and t-distributed Stochastic Neighbour Embedding (t-SNE) make it easier to see patterns by reducing complex data into simpler visuals. Clustering algorithms, like K-Means, group similar songs together.

Machine learning and artificial intelligence (AI) make music recommendations smarter. They look at what users like and suggest similar songs. AI models like neural networks help improve these suggestions.

Finally, visualization tools like D3.js create interactive maps where users can explore music. Services like Spotify's Discover Weekly and Pandora's Music Genome Project use these technologies to personalize music discovery. As technology improves, music mapping continues to get better, making it fun and easy to find new music.

3. Connecting Music Maps and Cell Aging:

Technology is a powerful tool that helps scientists understand how cells work. They look at lots of data from cells to see what's happening inside. By using computers and special tools, scientists can figure out the disparity lying among cells. This is important because it helps us learn how to keep our bodies healthy as we get older.

4. The Journey Through Data:

To make this aging map, scientists gather lots of information from cells. They look at things like genes, proteins, and other tiny parts inside cells. This helps them understand why some cells age faster than others and how they are distinguishable in nature.

5. Decoding the Patterns:

Armed with computational algorithms and statistical techniques, scientists embark on the task of deciphering the intricate patterns concealed within the cellular data. Through rigorous analysis and pattern recognition, they unearth subtle variations between youthful and aged cells, shedding light on the molecular signatures of aging. They look for things that are the same in young cells and different in old cells. It's like finding clues in a big puzzle.

6. Charting the Aging Map:

Let's say that one group of cells is rich in certain materials and indicates the initial stage of the cycle. Once they understand the patterns, scientists make a map that shows how cells age. This map helps them see which cells age well and which ones don't. It's like drawing a picture that shows how cells change over time.

7. Exploring New Paths:

With the aging map, scientists can find new ways to keep cells healthy. They can find things in the cells that make them age faster and figure out how to stop it. This could help us stay healthy and happy as we get older.

Conclusion:

In the intricate tapestry of cellular aging, bioinformatics and music map technology serve as guiding lights, illuminating the path toward a deeper understanding of age-related processes. By unraveling the molecular symphonies encoded within cells, scientists pave the way for innovative interventions aimed at enhancing human health and longevity. So, as we navigate the complex melodies of life, let us harness the power of technology to decipher the harmonies concealed within our cells, unlocking the secrets of ageless vitality.



ROOM TOUR OR WORLD TOUR ?

-SHREEYA MISHRA

DID YOU KNOW 

The concept of VR dates back to the 1960s when a computer scientist named Ivan Sutherland created the first head-mounted display called "**The Sword of Damocles**."



It was a regular afternoon which got me *awestruck!* Just got to witness one of the *biggest science festivals* at the beginning of this year, and adding onto, something that stormed my mind was that *headset*. Moving ahead I could find a queue of people all lined up to see that device. Got to know that they were there to use *Virtual Reality headsets*. Remember all those jokes we used to crack about those heavy headsets a decade before, here I found myself waiting for my turn to come up. The man there handed me the device and I saw myself on a huge *virtual mass of glaciers in Australia*, moving past the **icebergs** that looked so real.

Overlooking a *breathtaking vista* as I virtually stood on a bridge crawling crossing two huge glaciers, my legs shivered as I walked towards the towering snow-capped mountains that dominated the horizon, my ears could hear the dense wind moving past and my heart was confused and hesitant to even move further. Took a tentative step, and I marveled with smooth locomotion, my virtual legs carried me forward as naturally as my own would. I made a roundabout about assuring

I was fully there feeling like a childlike wonder at every turn. Couldn't believe how far we as humans have made our way to this impeccable *journey of technological advancements!* From being just an expensive tool kept in research labs to high-resolution displays with powerful graphic processor devices to facilitate advanced technological changes, the journey of *virtual reality* devices has grown.

Have you ever found yourself yearning to participate in exciting adventures such as trekking a scenic mountain peak or diving into deep waters, only to be held back by health concerns? Virtual Reality (VR) devices provide a compelling solution. With their advanced simulations, VR technology allows you to immerse yourself fully in these experiences, engaging your senses of sight, sound, and even touch. It enables you to feel present in virtual environments, exploring and interacting as if you were physically there, offering an accessible way to enjoy adventures that might otherwise be out of reach.



VR *technology* is still in its early stages of development, but it has the potential to revolutionize a wide range of industries and is seen immersively in *education* to dodge traditional teaching methods, in *healthcare* for surgery training and therapy, in *travel and tourism* to take you into virtual exotic locations around the world, and in architecture and engineering to create 3D model structures of buildings, moreover has been used for social interaction where people can meet and hang out. When I talk about it's various types:- we have with us the wired one which connects the headset to the computer, another includes using smartphones as a display. Recently we have an all-in-one headset that covers almost all the newly launched features with higher resolution accompanied with powerful realistic features.

This extensive technology is yet to achieve advancement in future endeavors. As we hurtle towards hyper-realistic visuals, unchained freedom of movement, and ground sensory breaking feedback that controls the mind through brain interfaces. *Virtual Realities* are now becoming extensions of ourselves, wrapping the very fabric of advanced human-tech interactions.

Is Cloud Computing Really Secure ?

-Parth Ratra

Imagine this: you're buying a new laptop, and one of the selling points is a "Privacy Shutter" – a physical cover for your webcam. It sounds reassuring, right? But why do we need this level of physical security when most of our devices promise "end-to-end encryption"? It makes you wonder, is cloud computing really secure?

What is Cloud Security?

Cloud computing has changed the way we store data and use technology. Instead of relying on bulky servers and expensive software, cloud platforms offer virtual services online. From storing files to running applications like Zoom or Office 365, the cloud has made it easier for us to collaborate and access data anywhere. But with convenience comes new questions about security.

Cloud security refers to the protections put in place by cloud service providers (like AWS or Microsoft Azure) to secure your data. These companies invest in cutting-edge technologies like encryption, threat monitoring, and access control. But there's a catch – the responsibility for keeping data safe is shared between the cloud provider and the user. So, even though the cloud can be more secure than traditional setups, there are still risks to consider.

Here are a few real-world cases that highlight the vulnerabilities:

- Capital One Breach (2019): A misconfigured firewall exposed over 100 million people's personal data.
- Dropbox Breach (2016): Weak password hashing allowed millions of user accounts to be compromised.
- Vodafone Idea Breach (2019): Unsecured cloud storage led to the leak of millions of phone numbers.
- These examples show that despite cloud providers' best efforts, things can still go wrong.

Challenges in Cloud Security

Here are some common challenges in cloud security:

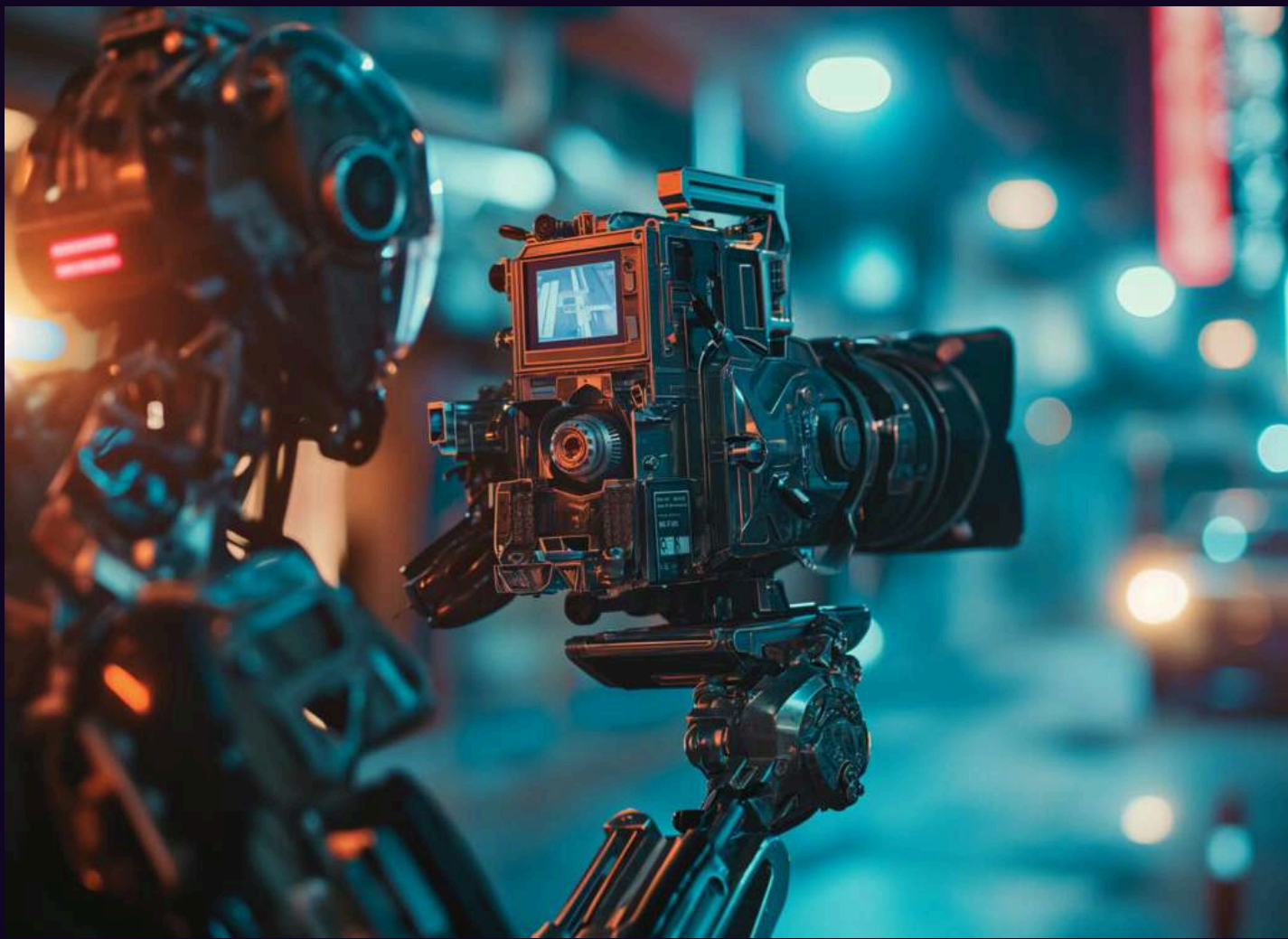
- Data Breaches:
With so much data stored in the cloud, hackers see it as a prime target.
- Insecure APIs:
APIs connect cloud apps, but vulnerabilities in these connections can let attackers in.
- Insider Threats:
Sometimes the danger comes from within, such as an employee misusing access.
- Denial-of-Service Attacks (DoS):
Flooding a cloud service with traffic can shut it down for real users.

What Can Be Done?

- Even though these challenges are concerning, there are steps that both organizations and individuals can take to secure their data. For organizations:
- Use data encryption and secure access controls.
- Train employees on cyber security best practices to avoid threats like phishing.
- Conduct security assessments and regularly test for vulnerabilities.
- Use multi-factor authentication (MFA) to add extra layers of protection.
- As students or individual users, we can also do our part:
- Create strong, unique passwords and enable MFA.
- Monitor your accounts for suspicious activity.
- Stay aware of phishing scams and always double-check links and sender emails.
- Choose cloud providers wisely – ensure they comply with data privacy regulations.
- Back up your data regularly outside the cloud for added security.

Conclusion

Cloud computing offers great opportunities, but security is a shared responsibility. By staying vigilant and implementing strong security measures, both providers and users can ensure a safer online experience. As technology evolves, who knows – maybe AI will play an even bigger role in securing our data in the future.



AI IMPACT ON FILMMAKING IN THE MODERN WORLD

-VICTOR LOUCHI

The advancement in artificial intelligence opens a new chapter of creativity and exploration. From script writing to post-production, AI is pervasive in many aspects of filmmaking, opening up new approaches and new opportunities for filmmakers.

As AI continues to evolve, its impact on the film industry will continue to grow, revolutionizing both the creative process and the audience experience. AI has transformed filmmaking in script analysis and creativity. AI algorithms can analyze large amounts of data such as existing scripts, audience preferences, and market trends to generate interesting stories and characters.

Not only does it streamline the screenplay process but also opens up opportunities to explore different narratives and storytelling techniques for example, AI can recognize patterns in successful films and predict audience reactions, allowing filmmakers to adjust their scripts to further resonate with their viewers.

Additionally, AI-powered tools such as script software can help writers develop coherent stories, believable dialogue, and well-rounded characters. By analyzing language patterns and emotional cues, these tools can provide valuable insights and suggestions improving the overall quality of the script.

This collaborative approach between human creativity and AI intelligence allows filmmakers to push the boundaries of storytelling and create appealing stories captivating audiences around the world. Adding to script writing, it has also revolutionized the pre-production stage of filmmaking through advanced analytics and virtual production techniques.

AI algorithm analyzes decisions, budget requirements, and scout location data to optimize resource allocation and minimize production costs. AI-based virtual production technology allows filmmakers to visualize scenes in real-time, facilitating effective decision-making and increasing flexibility on set.

Additionally, AI-powered pre-visualization tools allow directors to experiment with camera angles, lighting effects, and visual effects before even filming, saving both time and resources in the production process.

Integrating AI into the post-production process has streamlined tasks such as editing, visual effects, and sound designing allowing filmmakers to achieve the highest levels of accuracy and realism.

AI-powered editing software can analyze raw footage and automatically assemble sequences based on predefined parameters, reducing time and effort which is normally required for manual editing. Similarly, AI-driven visual effects tools can generate photorealistic images and seamlessly integrate CGI elements into live-action scenes enhancing the visual spectacle of the final product.



AI FILMS

Additionally, AI algorithms can analyze audio data improving sound quality, removing background noise, and synchronizing dialogue with visual cues ensuring an immersive viewing experience for viewers.

AI can automate repetitive tasks and provide intelligent recommendations, allowing filmmakers to put their focus on creative storytelling and artistic expression rather than technical limitations. Beyond the production process, it has also revolutionized film distribution and consumption through personalized recommendation systems and targeted marketing strategies.

Streaming platforms use AI algorithms that analyze user preferences and behavior, curating personalized content recommendations based on individual tastes. This not only increases the discoverability of independent and niche films but also makes it easier to attract and retain audiences in an increasingly competitive market.

Additionally, AI-driven marketing tools can analyze social media trends, audience demographics, and sentiment analysis to optimize advertising campaigns and more effectively target specific audience segments. By leveraging data-driven insights, filmmakers can maximize the reach and impact of their films, connecting more deeply with their audiences.

In summary, the impact of AI on filmmaking is diverse and transformative, reshaping every aspect of the creative process from scriptwriting to distribution. By harnessing the power of AI algorithms and technology, filmmakers can unlock new possibilities for storytelling, visualization, and audience engagement driving innovation and creativity in the evolving world of film.



As AI continues to evolve, its role in film production will undoubtedly increase, providing filmmakers with new opportunities and challenges to explore and embrace in pursuit of cinematic excellence.

AI AND MACHINE LEARNING MEETS MEDICINE

“HOW AI ACCELERATING DRUG DISCOVERY?”

-VIRENDRA LAL



Introduction

A medicine or drug is a chemical substance or a mixture of chemical substances intended to Diagnose, Prevent, or Treat a disease, disorder, or condition. Its discovery involves exploring and analyzing complex compounds to improve patient well-being and quality of life by addressing disease progression and symptoms. This process includes target identification, clinical trials, efficiency tests, and regulatory approval, requiring significant labor, time, knowledge, and infrastructure, making it a complex and challenging endeavor.

The 21st century has seen rapid drug discovery and development, evolution with AI and Machine Learning transforming the field.

Traditional methods were slow, costly, and often unsuccessful, involving years of research and trials. However, with AI, the process has accelerated dramatically, granting scientists access to vast data libraries and enabling them to identify potential drug candidates more efficiently and predict success rates in a fraction of the time.

This article uncovers the many ways AI and machine learning transform the drug discovery process, making it more efficient and high-tech. By harnessing AI and ML, we can revolutionize the way we develop new drugs.

Artificial Intelligence & its working

Artificial Intelligence (AI) is a branch of computer science that creates machines that mimic human intelligence but with a twist. It's not exactly human intelligence but human-like abilities acquired through algorithms that learn reason, and solve problems. AI relies on machine learning, which identifies patterns in data, and its subfield, deep learning, which utilizes Artificial Neural Networks (ANN). The ANN models consist of a network of artificial neurons known as perceptrons, which are used to solve complex problems [1]. The ANN consists of nodes that receive individual inputs, which are then processed using algorithms to produce an output, enabling problem-solving. It has various types like multilayer perceptron (MLP) networks, recurrent neural networks (RNNs), and convolutional neural networks (CNNs) [2] [3].

The MLP network is a feedforward neural network with applications in process identification, pattern recognition, and optimization. RNNs, with their internal memory, excel in language processing, translation, and speech recognition. Meanwhile, CNNs are ideal for image and video processing, leveraging the spatial structure of visual data to detect hierarchical representations.

What is the process of developing a drug?

The drug discovery process begins with identifying and validating a biological target, typically a gene or protein, where the drug binds to take effect. Most targets are proteins, and researchers select those with ideal binding sites, akin to finding

the right lock. Once the lock is identified, the goal is to find the corresponding key – the drug that fits perfectly to unlock improved health. Now comes the discovery phase, the computer rapidly screens millions of potential drugs and identifies the best fits based on the target sequence, narrowing down 456the options [4]. The computer then employs models to identify druggable sites, saving time and resources by avoiding costly and often unsuccessful lab experiments. After discovering potential drug candidates, they're tested outside a biological system (e.g., on animals and human cells) in the pre-clinical phase, and then on a small group of humans in the clinical phase to assess efficacy and safety. If successful, the drug undergoes regulatory approval and further monitoring.

How does AI help in this process?

- AI can identify promising drug compounds and speed up validation using QSAR models which predict molecular properties like log P and log D, analyzing a large number of molecules.
- Computer-based methods (in silico) quickly eliminate poor drug candidates and provide detailed profiles without physical testing. Lead Compound selection involves the use of algorithms such as coulomb matrices and molecular fingerprint recognition, which take into account a molecule's physical, chemical, and toxicological properties [5].
- AI helps predict potential drug-drug interactions and their effects, analyzing large datasets of known interactions to identify and prevent adverse reactions.

- When designing a new drug, physicochemical properties like ionization, solubility, and log P are considered to create a suitable drug that interacts effectively with the body. AI algorithms use molecular descriptors like SMILES strings, electron density, and 3D atomic coordinates to predict properties [6].
- Using Machine Learning Algorithms the data from the pre-clinical trials can be analyzed which eventually gives the safety parameters and efficacy of the drug before clinical trials or human trials.

AI Tools Used in Pharma Industry

- AlphaFold – An AI model developed by Google DeepMind.
- DeepChem – A deep learning library created by Bharat Ramsundar at Stanford University while pursuing his PhD in computer science.
- RoseTTAFold – Developed by researchers at the University of Washington, U.S.
- DeepConv-DTI – A convolutional neural network-based model for predicting drug-target interactions.
- DeepGraphMol – A computational method for molecule generation with desired properties using graph neural networks and reinforcement learning.

International firms that use AI in drug discovery and development

- Atomwise – Founded in 2012, headquarters is in San Francisco, California.
- Exscientia – Founded in 2012, headquarters at Oxford, Oxfordshire.
- Insilico Medicine – Founded in 2014, headquarters in Boston, Massachusetts.
- Iktos - Founded in 2016, and is based in Paris, France.
- Cradle – Founded in 2021, headquarters at Delft, Netherlands.



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THE HIDDEN DANGERS OF ONLINE SHOPPING: UNMASKING DARK PATTERNS

-Dr. Vidhi Khanduja
Yashasvi Mittal

INTRODUCTION

In today's digital age, especially after COVID-19, online shopping has become more than just a convenience—it's a lifeline. E-commerce's share of global retail trade surged from 14% in 2019 to nearly 17% in 2020. A PwC study highlighted this shift, showing that people were buying gadgets, clothes, and books online more than ever. By June 2021, over half of the global consumer base reported increased use of digital devices compared to six months earlier.

Smartphone shopping has more than doubled since 2018 [1]. However, with this boom in e-commerce comes a disturbing rise in dark patterns—manipulative designs that trick you into actions you never intended.

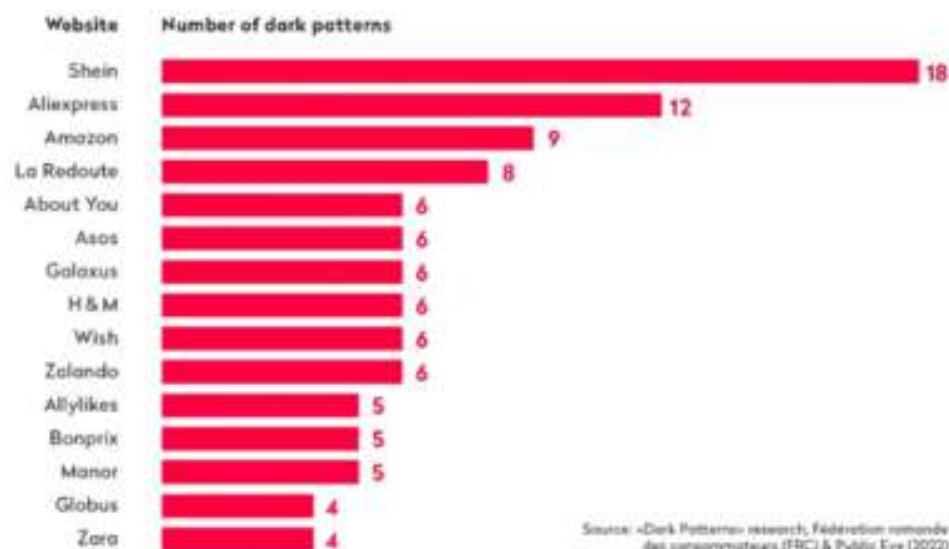


Figure 1: The exponential rise in these manipulative tactics across various shopping platforms is alarming, with FTC reports confirming this trend [2] [3]

WHAT ARE DARK PATTERNS?

Dark patterns are sneaky UI/UX designs that cunningly deceive users into making unintended decisions, such as purchasing items or signing up for services they don't need. These designs prey on users' fears and insecurities, stripping them of their ability to make free choices.



Figure 1: The impact of dark patterns on user behaviour showing a significant increase in product purchases [4].

The alarming rise in these deceitful tactics across various shopping platforms has caught the attention of the FTC, which has confirmed this disturbing trend.

TYPES OF DARK PATTERNS

- 1. Urgency:** Ever felt the rush to buy something because "only a few items are left". Urgency tactics create a false sense of scarcity, pressuring you to make quick decisions.
- 2. Misdirection:** This tactic uses deceptive language, emotional appeals, and visual tricks to divert your attention from crucial information, leading you to make uninformed decisions.
- 3. Forced Action:** Ever been forced to sign up for a newsletter to access a discount? Forced action tactics pressure you to perform activities you may not want to.
- 4. Obstruction:** Deliberate barriers or complexities in the user workflow prevent you from moving on, forcing you to take specific actions to complete tasks.
- 5. Basket Sneaking:** Extra goods or services magically appear in your cart without your consent—classic basket sneaking!

Offer Expires In:

29 55

Enter your email to activate your unique, limited-time offer:

☐ I'm not happy with the personalization.

☐ Other

NEVER MIND

Continue cancellation

Misdirection (Source 2)

QTY: 1

ADD TO MY CART

LIFETIME Quality Assurance Warranty

90 Day Return Policy

110% Low Price Guarantee

Send me purchase updates on Messenger

EFFECTIVE STRATEGIES TO COMBAT DARK PATTERNS

1. Digital Tools: Arm yourself with software programs like browser extensions or apps that detect dark patterns using AI and machine learning. Models like UIGuard are leading the charge.
2. Awareness Campaigns: Knowledge is power! Educate yourself and others through webinars and campaigns about these deceptive practices. Awareness empowers consumers to take legal action against companies employing dark patterns. Remember the FTC's crackdown on Amazon for misleading Prime subscriptions or the New York Times' hidden subscription renewals?[5]
3. Government Regulations: Governments are stepping in with various guidelines to combat dark patterns. In the US and EU, laws like the Consumer Rights Act of 2015, the Electronic Commerce (EC Directive) Regulations of 2002, and the Arizona Consumer Fraud Act aim to protect consumers from deceptive practices.[5]

amazon

Bluetooth Calling Smartwatch starts at ₹1,999

Revamp your home in style

Up to 60% off

IntelliGuard WebScan

Enter URL:

SCAN

MASSIVE: Detected 6 Dark Patterns across 2 unique categories on this website. Click to see

Category

Actual dark patterns

Starting ₹99 | All your home improvement needs

Get the perfect screen size | TVs Starting ₹6,999

Delight your little one | Amazon Brands & more

Up to 60% off | Styles for women

Figure 4: Strategies to combat dark patterns.

WAY FORWARD

As e-commerce continues to soar, so does the prevalence of dark patterns. It's crucial for consumers to stay vigilant and for governments to enforce regulations that protect user rights. By combining digital tools, public awareness, and stringent laws, we can combat the rise of dark patterns and ensure a safer, more transparent online shopping experience for everyone. Stay savvy, shoppers!

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5. Deceptive Patterns (aka Dark Patterns) - spreading awareness since 2010



CLOUD REVOLUTION

India's Strategic Roadmap to Global Leadership in Cloud Computing

-Mr. Suyash Kumar

Introduction

Cloud computing refers to the delivery of various computing services—such as storage, processing power, and applications—over the Internet. Instead of owning physical hardware and software, users can access these resources on-demand from cloud service providers like Amazon Web Services (AWS), Google Cloud Platform (GCP), and Microsoft Azure.

Cloud computing is revolutionizing the global digital landscape, and India is poised to be a significant player in this transformation.

With its burgeoning IT industry, supportive government policies, and a rapidly growing digital economy, India has the potential to become a global hub for cloud computing. This article outlines a

roadmap for India to harness the full potential of cloud computing and drive sustainable growth and innovation.

Current Landscape

India's cloud computing market is expanding at a rapid pace, driven by digital transformation initiatives, increased internet penetration, and the rise of start-ups. Major global cloud service providers like AWS, GCP, and Microsoft Azure have established a strong presence in the country, alongside Indian players like TCS, Infosys, and Wipro.

Key Pillars of the Roadmap

1. Policy and Regulatory Framework

- Strengthen the Digital India initiative to promote the adoption of cloud computing across government departments and public sector undertakings.
- Implement robust data protection laws and frameworks to ensure the security and privacy of data stored in the cloud.
- Provide tax incentives, subsidies, and grants to businesses adopting cloud technologies, particularly for SMEs and start-ups.

2. Infrastructure Development

Invest in the development of world-class data centers across the country and enhance internet connectivity, especially in rural and semi-urban areas, to ensure seamless access to cloud services.

3. Skill Development and Education

Integrate cloud computing courses into the curriculum of schools, colleges, and universities. Also, encourage academic institutions to collaborate with industry for research and development in cloud technologies and establish

dedicated centers of excellence for cloud computing research.

4. Industry Collaboration and Ecosystem Development

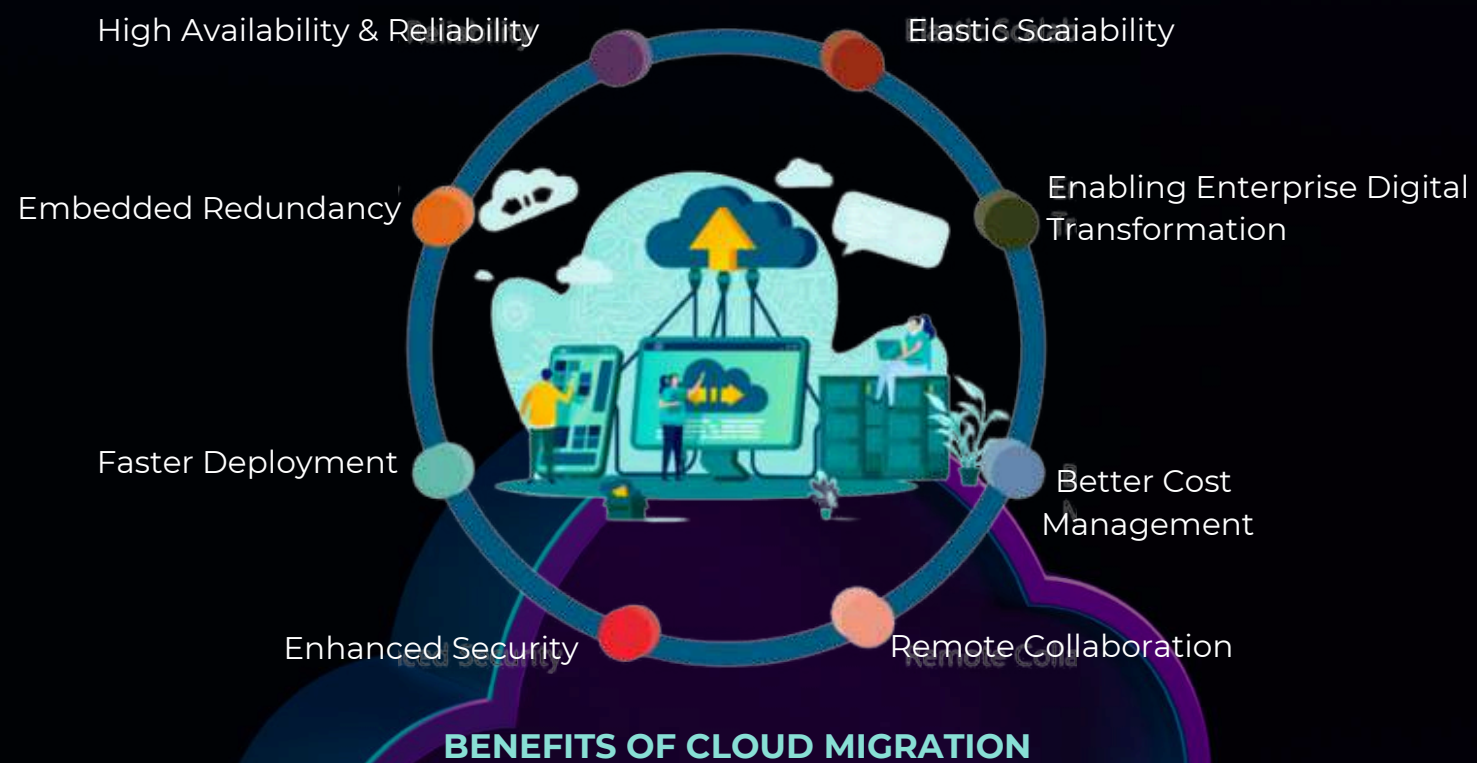
Foster a supportive ecosystem for cloud-based start-ups by providing access to funding, mentorship, and incubation facilities. Encourage collaboration between cloud service providers, IT companies, and other industries to develop innovative cloud solutions tailored to Indian needs.

5. Security and Compliance

Develop and implement comprehensive cyber security strategies to protect cloud infrastructure from threats and vulnerabilities. Also, ensure the cloud services comply with national and international regulations to build trust and credibility among users and clients.

6. Government and Public Sector

Expand the use of cloud computing in e-governance initiatives to improve public service delivery, transparency, and efficiency. Leverage cloud technologies to develop and deliver innovative citizen services, such as healthcare, education, and financial inclusion programs.



Future Prospects

The future of cloud computing in India is promising, with several trends set to shape its trajectory:

1. Artificial Intelligence and Machine Learning:

The integration of AI and ML with cloud computing will drive innovation across sectors, enabling smarter decision-making and automation.

2. IoT and Smart Cities:

Cloud computing will play a crucial role in the development of smart cities and IoT ecosystems, providing the infrastructure for data collection, storage, and analysis.

3. 5G Deployment:

The rollout of 5G networks will enhance cloud capabilities by providing faster and more reliable connectivity, enabling new applications and services.

Conclusion

India's journey towards becoming a global leader in cloud computing requires a strategic and collaborative approach. By focusing on policy, infrastructure, skill development, industry collaboration, and security, India can harness the full potential of cloud computing to drive economic growth, innovation, and digital transformation. The roadmap outlined in this article provides a comprehensive framework for achieving this vision and ensuring a bright future for cloud computing in India.

Pitch Perfect: How to Validate and Develop Your Tech Idea

-Aditya Bharadwaj

"What is the most important thing in the world I could be working on right now, and if you are not working on that why aren't you?" - Aaron Swartz

Technology isn't just about building solutions; it's about creating value and impacting lives. This is the essence of the golden revolution in the age of tech. Take the iPhone, for example. When it debuted in 2007, it wasn't just a new gadget; it redefined the smartphone industry and spawned a thriving ecosystem of industries, from tempered glass manufacturers to app developers.

Today, we see similar disruptive patterns with technologies like virtual reality (VR), augmented reality (AR), and artificial intelligence (AI), each navigating its own path through the 4D's of disruptive technology—expanding our perceptions of reality and transforming industries from healthcare to finance.

Inspired by the fictional genius of Erlich Bachman, the HBO TV series "Silicon Valley" and the insights of Sam Altman, I embarked on a journey to solve real-world problems using technology. Here are key

lessons I learned about validating tech ideas and pitching to incubators and VCs

STARTING POINT :

Identify a Real Problem - after picking a problem, Think from first principles.

Break that main problem into sub-problems and work on finding a solution around them.

Validate Your Idea - Talk to potential users about their pain points, Research existing solutions and their limitations, create a basic prototype or mockup get feedback, and iterate over.

The process of identifying and addressing unsatisfied needs in the market cannot be overstated. It's crucial to differentiate your solution from others by understanding what people truly want.

Ask your friends about the problem you want to solve. What do they think about it? Do they think your solution is effective?

You would have to pivot the idea because the feedback you were getting from the customers was different from what you had originally started with. I appreciate the help of my LinkedIn connections, Discord, and Reddit forums, my brother, and friends for helping me see things clearly.

Get the right set of people :

“agar aap sahi logo me hote ho toh galat se bhi sahi Tak aa jate ho.”

Steve Jobs was initially hesitant about the iPhone concept, but his team pushed for its development. Their belief in the idea ultimately led to a revolutionary product.

Great work requires teams. It's crucial to have talented individuals to collaborate with, whether closely or more loosely.

Coming up with new ideas is fun, and sharing them helps you improve and get better at this.

Business side of things :

- While technology can teach you the mechanics of building an app—whether through coding, hardware, or sophisticated crafty if else statements & algorithms
- It's the practical lessons in understanding market needs, consumer landscape, competitive analysis, basics of financial projections, and consumer desires that truly prepare you for success.

Prepare for Pitching :

- Apply to various college incubators and VC events. Submit your idea to VC websites and more. Have self-belief; you will face rejection many times.

- Currently, in my second year of college, I ideated an LLM-powered communication coach to improve communication. Collaborating with friends, we presented our concept to incubation cells at IIT Delhi, FMS Delhi, SRCC, and St. Stephen's College, receiving guidance and incubation offers.

Being Realistic and Practical :

Pitch Perfect: How to Validate and Develop Your Tech Idea

- Initially, I was overly enamored with my idea. Over time, I learned to be practical, recognizing the feasibility of solutions. Grit comes from learning you can get back up after you get knocked down.
- This is my experience, even though the idea didn't take off, due to infeasibility and execution issues but it taught me a lot. Lessons Learned and Moving Forward.
- I met a lot of entrepreneurs at these events and connected with a few who got funding and started working on their ideas, I got a 5% better at every pitch, got their idea, and how to approach things. It was genuinely a whole lot better experience.
- This journey, despite not resulting in a successful startup, was genuinely enriching. It laid a foundation of knowledge, skills, and connections that will undoubtedly prove valuable in future endeavors. With each pitch, I improved my skills and refined my approach.
- Stay curious, be persistent, and don't fear failure – it's often the best teacher.



An Expert Talk and Launch of Bitwise Volume 4

October 12th, 2023

On 12th October 2023, Ordinateur - The Computer Science Society of Hansraj College organized an event featuring the launch of Bitwise Vol. 4, the society's computer science magazine, along with an expert talk titled "Inroads into Research" by Prof. (Dr.) Baljeet Kaur. Prof. Kaur praised the magazine, highlighting its deep focus on Artificial Intelligence and Machine Learning, and commended the students for their contributions. She also provided valuable insights on how undergraduate students can embark on research paths and build careers in research. The session was highly informative and inspired students to explore research opportunities. The event concluded with the presentation of a memento to Prof. Kaur by faculty members, followed by the official launch of Bitwise Vol. 4, celebrating the hard work and creativity of all contributors. The event was anchored by Aasim Mohammed and Mina Shareef Mundol, with Akansha Bharti as the Student Coordinator, and was coordinated by Dr. Sunita Chand and Dr. Manju.

EVENTS 2023-24



BITWISE



INFUSION '23 - The Official Freshers' Party

Oct 25th, 2023

In the fast-paced world of technology, the importance of fostering a strong sense of community and camaraderie among budding computer enthusiasts cannot be overstated. This is precisely what our Computer Society "Ordinateur" aimed to achieve when we organized an exciting and vibrant event named "INFUSION-2023-24" designed exclusively for freshers of Batch 2023-27. The fresher event held at the College Auditorium served as a launching pad for newcomers, providing them with valuable insights, an interactive environment, and a memorable introduction to the world of their college and department.

The purpose of INFUSION is to ensure that every fresher, as they step into the computer science realm, is well-prepared, informed, motivated, and eager to make the most of their academic journey and future career prospects within the supportive and dynamic community of Ordinateur.



CODECRASH- CODEATHON

2024, Feb 10 - Feb 17

Ordinateur, the Computer Science Society of Hansraj College, organized the CodeCrash-Codeathon 2024, a highly competitive event aimed at testing the coding skills and problem-solving abilities of students. The event, held in two rounds, attracted significant interest, with 327 students registering. The prelims were conducted online on 10th February 2024 via Unstop, consisting of a quiz and a computer science riddle round to assess theoretical knowledge and problem-solving skills. Out of 159 participants in the prelims, 30 students were shortlisted for the final round. The final round took place on 17th February 2024 on HackerRank, where the top 30 participants tackled complex coding challenges. The winners were Mayank Sharma (1st place) and Sourabh Madan (2nd place) from SGTB Khalsa College, and Bhavika Srivastava (3rd place) from IPCW College. The event was convened by Dr. Sunita Chand, Assistant Professor of the Computer Science Department.



MENTOR SESSION BY ESTEEMED SENIORS

April 24th, 2024

On 24th April 2024, Ordinateur - the Computer Science Society, hosted an impactful offline mentor session featuring esteemed seniors Mr. Dhruv Singh, Ms. Vedanti Kiran, and Ms. Tanisha Kriplani. Aimed at providing invaluable guidance on placement strategies and preparation techniques, the session saw the mentors, who are placed at DE Shaw and Fractal, share their experiences and insights on various aspects of the placement process. Key topics covered included resume building, enhancing aptitude and technical skills, and effective interview preparation. The mentors emphasized the importance of mock interviews, group discussions, and networking with professionals. An interactive Q&A segment allowed students to engage directly with the mentors, adding a practical perspective to the theoretical knowledge shared. The session concluded with a vote of thanks, recognizing the mentors' efforts and commitment to guiding their juniors. Building on this success, Ordinateur plans to organize more such sessions in the future, focusing on diverse career paths and industries to benefit a broader range of students.

ADITYA VIJAY
RESUME WRITER
GUEST SPEAKER

AT 06:00 PM
26TH APRIL

WEBINAR ON RESUME BUILDING



Webinar on resume building By Aditya Vijay

April 24th, 2024

On April 26, 2024, Ordinateur - the Computer Science Society of Hansraj College, organized an insightful webinar on "Resume Building" featuring Aditya Vijay, a distinguished resume writer and career coach, via Google Meet. Aditya Vijay, with extensive experience in resume writing, provided participants with valuable insights on crafting effective and professional resumes. The webinar covered all essential aspects of resume building, including the importance of a well-structured resume, the optimal resume format, and the need to customize resumes for different job applications to increase visibility with Applicant Tracking Systems (ATS). Aditya also highlighted common pitfalls to avoid, such as vague language, irrelevant details, and poor formatting. The interactive session encouraged enthusiastic participation from students, who engaged actively in a dedicated Q&A segment, seeking personalized advice on their resume challenges. The feedback from attendees was overwhelmingly positive, praising the comprehensive coverage and practical tips shared. The event successfully equipped students with the knowledge and skills needed to create standout resumes. The Computer Science Society expressed sincere gratitude to Aditya Vijay and all participants and remains committed to organizing such impactful events in the future to support the professional growth of its members.



BATCH PHOTOGRAPH and SCRIBBLE DAY

May 6th, 2024

On 6th May 2024, the Computer Science Department of Hansraj College, under the banner of Ordinateur, organized a memorable Batch Photograph and Scribble Day for the outgoing class of 2021-2024 at the college amphitheater. The event began with the entire batch gathering in coordinated attire to capture a significant moment of their academic journey through a formal batch photograph. The session was efficiently managed to ensure all students were present for the best possible group shot. Following this, Scribble Day added a fun and nostalgic element to the day as students expressed their creativity and camaraderie by writing messages, doodles, and memories on each other's t-shirts. The event was filled with laughter, reflection, and a sense of accomplishment, providing a heartfelt celebration of the bonds formed during their time at Hansraj College as they prepared for the next chapter in their lives.



Yuvamanthan Hackathon 2024

2024, Aug 21 - Aug 22

Yuvamanthan Hackathon 2024, hosted at Hansraj College, was an outstanding event that brought together over a thousand students to showcase their innovative ideas and technical skills. The event was organized with the dedicated efforts of the Institute's Innovation Council in collaboration with the Viksit Bharat Ambassador Club and the Ordinateur (The Computer Science Society).

Event Structure

21st August 2024: Online Round

The hackathon began with an online round where 43 shortlisted teams competed. This round was instrumental in filtering the most promising ideas and 10 teams were selected for the subsequent stage out of 26 teams participated.

22nd August 2024: Final Round

The final round saw the top 10 teams presenting their projects in front of an expert panel. These teams were evaluated on their innovative solutions and their potential to address real-world challenges effectively.

Conclusion:

The Yuvamanthan Hackathon 2024 successfully highlighted the innovation and technical expertise of the participating teams. With over 1021 students taking part, the event was a testament to the collaborative efforts of the Institute's Innovation Council, Viksit Bharat Ambassador Club, and Ordinateur Society. Special recognition goes to Dr. Vidhi Khanduja, Mr. Suyash Kumar, Principal Dr. Rama, Nodal Officer Prof. Jyoti Bhola, and student coordinators Varun Gaur and Aditya Bhadoria for their pivotal roles in making the event a grand success.



FACTS AROUND

THE WORLD

1.

Japanese scientists have found a way to attach living skin to robot faces, for more realistic smiles and other facial expressions. The breakthrough came from copying tissue structures in people, according to the team at Tokyo University. The researchers say it paves the way to making convincingly realistic, moving humanoids with self-healing skin that will not easily rip or tear. The artificial skin is made in the lab, using living cells



2.

Scientist Hashem Alghaili has unveiled a concept for 'the prison of the future' that he claims could speed up a criminal's release to minutes, rather than years or decades. This concept, called 'Cognify,' is designed to implant synthetic memories of a person's crime into their brain, showing the crime from the victim's perspective. The system uses VR-like devices and AI-generated recordings to simulate these experiences, along with brain implants that trigger emotions such as regret or guilt—feelings some individuals may not naturally experience.



3.

A London cinema has **cancelled** the world premiere of a film following backlash it received over being written by ChatGPT. The film, "The Last Screenwriter," shows the saga of a screenwriter faced with the task of working with an AI system whose skills match his own. The movie's human director, Swiss filmmaker Peter Luisi, said his film is meant to start a conversation about AI and its impact on the entertainment industry.



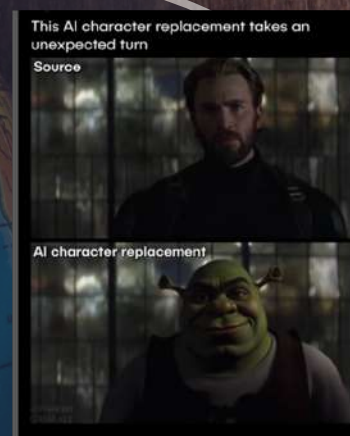
4.

Would you fly on one of these? The world's first autonomous flying taxi from China cut a 1-hour drive to 7 minutes flying in the air. This flying taxi is a two-passenger eVTOL aircraft with 16 propellers and a range of 30-40 km. It is designed for autonomous flight without a pilot, monitored from a command center.



5.

This needs to become a full movie 🎬😂 This was done using Wonder Dynamics to replace Captain America with a low poly 3D model from Sketchfab. The creator then used Stable Diffusion to make it look good.



6.

Nvidia briefly became the world's most valuable company. The chipmaker passed Microsoft and Apple to become the most valuable public company by market cap.

Name	M. Cap	Price
NVIDIA 1 NVDA	\$3.335 T	\$135.58 +3.52%
Microsoft 2 MSFT	\$3.327 T	\$447.77 +0.13%
Apple 3 AAPL	\$3.275 T	\$213.64 +1.40%
Alphabet (Google) 4 GOOG	\$2.170	
Amazon 5 AMZN	\$1.901	

YEAR BOOK



Shreyas Singh

Do everything you ever wished for or thought of, this is the time where you test every aspect of your career and make a choice to pursue a domain.

Aryan Narang

Stay away from what might have been, and look at what can be. Cya batch 2021-24



Anshul Pant

It is been a great journey in Hansraj, from the time when I never heard of its name to leaving this place with memories. I had made a bunch of good friends and learned from the friendly teachers. Thank you, Quirky forever 😊

Aasim

This college has given me a lot, and most important among them is this family we call Kaliyum Chiriyum (transl. Fun and Laughter), the 30-odd Malayalee students who found themselves in the same boat at the '24 Batch of Computer Science.



Tanisha Kriplani

Dear Batchmates and Ordinateur Society, let's celebrate our achievements and the bonds we've formed. As we move forward, let's continue to inspire and support one another. Wishing everyone great success and happiness in all future endeavors!



Tanmay Chowdhary

Live in the moment, live for the moment, keep learning and have fun

Paramjeet Bamaniya

Do everything you ever wished for or thought of, this is the time where you test every aspect of your career and make a choice to pursue a domain.



Vedanti Kiran

College years are filled with unforgettable memories, endless laughter, and amazing friendships. Heartfelt thanks to our incredible professors for their guidance. Best wishes to juniors—embrace every moment! To my wonderful batchmates, our journey together has been truly special. Cheers to the journey we've shared and the futures we will build!



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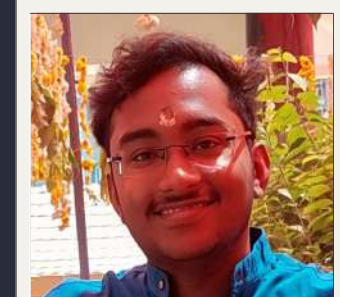
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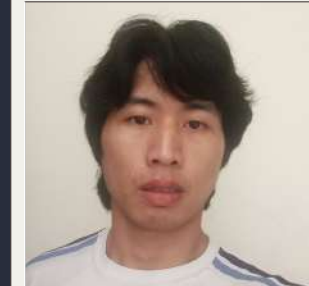
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