TECHGENIX

Vol. 3

FROM THE PRINCIPAL'S DESK

I am delighted to announce the publication of the third edition of "Techgenix," the of newsletter crafted by our talented students from the Department of Computer Science at Maitreyi College. This initiative exemplifies the creativity, dedication, and intellectual curiosity that define our academic community.

Over the past months, our students have engaged in a multitude of enriching activities, including webinars, workshops, conferences, and competitions. They have also acted a resource persons in a student development programme. These experiences not only enhance their academic knowledge but also foster a well-rounded development, preparing them for future challenges in the ever-evolving field of technology.

"Techgenix" serves as a wonderful platform for our students to demonstrate their expertise and share their innovative ideas with a broader audience. It is gratifying to see how they seamlessly blend their academic pursuits with creative expression, producing content that is both informative and inspiring.

I would like to commend the students and faculty members of the Computer Science Department for their hard work and commitment in bringing this newsletter to life. Your efforts have resulted in a publication that we can all be proud of, and I am confident that it will continue to engage and enlighten readers across our community.

Thank you for your dedication, and I wish you all continued success in your future endeavors. Let's keep pushing the boundaries of knowledge and innovation together.

Prof. HARITMA CHOPRA
Principal
MAITREYI COLLEGE

Design is not just about making things look beautiful—it's about telling a story without words. As the Creative Head of *Ilustrado*, my role has been to visually translate the essence of each theme into an experience that speaks before a single word is read.

Each layout, color palette, illustration, and graphic element is chosen with intent—to complement the powerful thoughts expressed through our articles, to give identity to the voices within these pages, and to create a sense of unity between content and design. It's a collaborative process, one that blends the intellectual vision of the editorial team with a creative lens that aims to inspire, engage, and reflect the spirit of our publication.

For me, *Techgenix* is not just a journal—it's a canvas. And every edition is a new opportunity to bring ideas to life through art and imagination.
— Nikita Pal
 Creative Head, Techgenix

It gives me immense joy to present to you the third edition of TechGenix, the official newsletter by ILLUSTRADO.

Being the creative head for this edition has been an incredibly fulfilling experience. From curating insightful articles and creative artworks to compiling student achievements and highlighting the various activities and initiatives taken up by our department—this edition is a celebration of the talent, hard work, and enthusiasm within our community.

Each page is a reflection of the vibrant and ever-evolving world of computer science that we're all a part of. I hope this edition not only informs but also inspires you, just as working on it has inspired me.
— Ananya Lodhi
 Creative Head, Techgenix

Serving as the Editorial Head for this edition of TechGenix has been a truly fulfilling experience. It challenged me to lead with clarity and purpose while collaborating with a team of talented, dedicated individuals who brought their best to the table.

Working on this edition has strengthened my love for editorial work and deepened my respect for the people behind it. I'm proud of what we've accomplished together.
— Vashudha
 Editorial Head, Techgenix
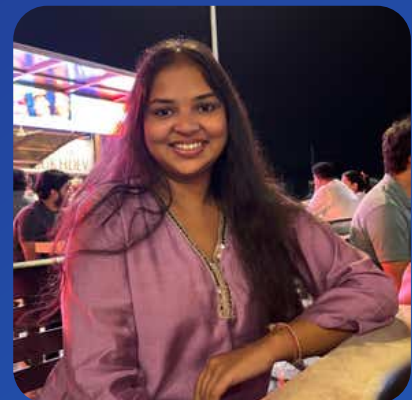
As we share this edition with you, I'm filled with excitement and gratitude for the talented individuals who made it possible. From writers and designers to photographers and editors, every team member brought their unique perspective and skills to the table. This newsletter is more than just a publication – it's a reflection of our department's vibrant community and commitment to excellence. I hope it sparks conversations, ignites new ideas, and showcases the amazing work happening within our department.
— Namrata Tiwari
 Editorial Head, Techgenix

NOTES FROM EDITORS

CREATIVE HEADS

Nikita Pal, 3rd year

Ananya Lodhi, 2nd year

EDITORIAL HEADS

Vashudha, 2nd year

Namrata, 2nd year

EDITORIAL TEAM

Shireen, 3rd year

Munjal Sharma, 3rd year

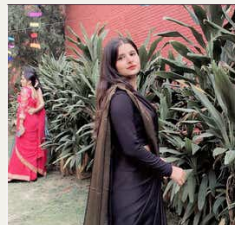Anjali Singh, 2nd year

Riya Garg, 2nd year

Bhawna Priyadarshi, 1st year

Avantika Dwivedi, 1st year

Sakshi Khare, 1st year
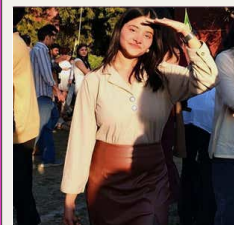

Khushi Raj, 1st year

Aditi, 1st year

Namita, 1st year

Chaitanya Upadhyay , 1st year

Suramya Lugani, 1st year

Jaya Yadav, 1st year

Naina Sharma, 1st year

Anjali, 1st year

TABLE OF CONTENT

ABOUT ILUSTRADO

Ilustrado is the vibrant and innovative academic society of the Department of Computer Science, Maitreyi College, University of Delhi. Founded with the vision to foster technical excellence, creativity, and collaboration, Ilustrado serves as a dynamic platform for students to explore, experiment, and evolve in the rapidly advancing world of computing.

What We Do

Ilustrado organizes a wide array of events and initiatives throughout the academic year, including:

- **CIENCIA – Our flagship annual departmental fest, filled with technical competitions, creative exhibitions, coding contests, workshops, and guest lectures.**
- **Workshops & Seminars – On trending topics like AI, Machine Learning, Cloud Computing, Web Development, Cyber Security, and more.**
- **Technical Competitions – Hackathons, debugging challenges, quiz contests, and ideathons to promote healthy competition and practical skills.**
- **Socially Responsible Tech Events – In collaboration with NSS, we aim to bridge the gap between technology and social good, aligning with national goals and community needs.**

OUR VISION

To create a thriving community where young technologists can enhance their skills, contribute meaningfully to the field of computer science, and become future-ready innovators who combine technical knowledge with social responsibility.

Ilustrado has always held a special place in my heart, shaping so much of my journey. As I reflect upon my tenure as President ,I am filled with immense gratitude for the opportunity. The spirit of our Computer Science department, with every student and our ever-supportive teachers working tirelessly on events, is truly remarkable. This edition of Techgenix is a powerful testament to that collective effort. It's our way of visually capturing the hard work, fellowship , and countless memorable moments we've shared, making it a true token of our time together.

SHIREEN (PRESIDENT)
Bsc Physical Science, 3rd yr

With deep gratitude and a heart full of pride, We share the launch of Techgenix, a magazine that truly captures the heart of our Computer Science department. As Vice President, Ilustrado has felt nothing short of home—a space that nurtures creativity, collaboration, and growth. This magazine stands as a reflection of our collective spirit, driven by the passion and efforts of our students. I extend my sincere gratitude to our faculty, union, editorial, and design teams for turning this vision into reality. May Techgenix continue to inspire future batches, just as this department has continually inspired all of us.

MUNJAL (VICE PRESIDENT)
Bsc Physical Science, 3rd yr

It gives me immense pride and joy to share that our department is introducing our very own magazine — a platform that celebrates the creativity, passion, and talent of each and every one of us.Looking back, I still remember my first year — I knew so little, yet I was inspired every day by the dedication and enthusiasm of our seniors and peers. Today, being part of this initiative and witnessing the incredible work put in by our union, editorial, and design teams fills me with gratitude and pride.This magazine is not just a publication — it is a reflection of who we are as a department: innovative, collaborative, and driven.
 This is a proud moment not just for me, but for all of us. Let this be one of many milestones in our journey of growth and excellence.

ANJALI (GENERAL SECRETARY)
Bsc Physical Science, 2nd yr

Ilustrado will always be close to my heart, as it provided me with great exposure and opportunities to learn and grow. In my tenure as a Treasurer of the Ilustrado, we've achieved significant milestones, and I am proud of our collective accomplishments. I look forward to our continued success and the growth of Ilustrado. With the guidance of our teachers, Techgenix is not only our magazine, but it is also a platform through which we share knowledge, inspire innovation, and document the journey of our department's growth. Each issue stands as a testament to our commitment to excellence and the dynamic spirit that drives us forward. I am happy and proud to be a part of this insightful journey.

HEMAKSHI (TREASURER)
Bsc Physical Science, 2nd yr

WORDS FROM UNION

Can Artificial Intelligence Replace Human Creativity?

By: Suramya Lugani (Bsc. Physical Science - 1st year)

These questions are becoming more relevant every day. In today's world, many students no longer use their thinking to complete assignments—they rely on ChatGPT and other AI tools to do the work for them. No doubt AI provides quick answers and solutions, but is this good for students who are still in their learning phase? Aren't we allowing AI to take control of human thought?
 Even in everyday life, people turn to AI for simple decisions, whether it's what to eat, how to respond to messages, or even making important life choices. AI has become an important part of our daily routines, influencing the way we learn, create, and make decisions. There's no denying that AI makes things faster and more convenient, but at what cost?
 Are we sacrificing our own creativity and independent thinking just for the sake of efficiency?

AI vs Human Creativity

Human creativity is something that AI can never truly replicate. Just a reminder—humans created AI, not the other way around. AI exists because of our creativity, and we have the power to create it as well as to destroy it. The question is, can AI imagine things as we do? The answer is no. AI can generate ideas based on patterns, but it lacks emotions and personal experiences. It cannot feel or understand emotions the way humans do, which means it cannot compete with human creativity.

The Importance of Balance

The real issue is not AI, it's how we use it. If we totally depend on AI to find answers to our problems, we eventually lose ourselves. Instead of letting AI do all the thinking for us, we should use it wisely—knowing when to seek its help and when to trust our instincts. AI can generate ideas and solutions to our problems, but it is based on the algorithms that are set for it; it can never give solutions that truly satisfy our ability to think and imagine.

Conclusion

AI is here to stay, and its role in our lives will only continue to grow. But instead of allowing it to take over our creativity and decision-making, AI should be a tool that improves our thinking, not weakens it. We must remember that true innovation comes from human imagination—the ability to dream, explore, and create beyond what AI can predict.

The Future of Gaming
Where Reality Meets Imagination

By: Aishwarya Tiwari (Bsc. Physical Science - 1st year)

Introduction

Over the past decade, the gaming world has evolved faster than ever before. From pixelated screens to hyper-realistic graphics, and from wired controllers to immersive virtual reality headsets, gaming has transformed into a high-tech, billion-dollar industry. But what lies ahead?

1. Cloud Gaming: No Consoles, No Limits

Gone are the days when playing a new game meant buying expensive consoles or downloading massive files. Cloud gaming is changing the game—literally.
 With platforms like Xbox Cloud Gaming, NVIDIA GeForce Now, and formerly Google Stadia, players can stream games just like they stream movies on Netflix. Whether on a smartphone, tablet, or a basic laptop, gamers can now play high-end games without worrying about hardware limitations.
- Instant access
- No downloads
- Play anytime, anywhere

2. Virtual and Augmented Reality: Entering the Game World

Virtual Reality (VR) takes players inside the game, offering a 360-degree experience. Headsets like the Meta Quest or PlayStation VR allow players to interact with virtual worlds as if they were real. Whether it's sword-fighting in a medieval world or solving mysteries in space, VR makes gaming feel personal and immersive.
Augmented Reality (AR), on the other hand, blends the game with the real world. Games like Pokémon GO or AR devices like the Apple Vision Pro allow players to catch virtual creatures on their street or turn their living room into a racing track.
In the near future, playing a strategy game on your dining table or battling aliens in your garden might be completely normal.

3. Artificial Intelligence: Smarter Games, Dynamic Stories

AI is playing a huge role in revolutionizing game design. It's no longer about repeating the same mission or fighting predictable enemies.
With AI, games are becoming:
- More responsive
- More intelligent
- More emotionally engaging

Non-playable characters (NPCs) can now hold conversations, learn player behavior, and adapt their strategies. AI also powers procedural generation, where entire game worlds are created dynamically, offering fresh experiences every time a player logs in.

5. The Metaverse: Gaming Beyond Games

The term "Metaverse" isn't just a buzzword—it's already taking shape in gaming environments like Fortnite, Roblox, and Minecraft. These platforms are no longer just games—they're social spaces, concert venues, education hubs, and creative studios.

In the future, gaming won't just be about "winning levels"—it'll be about living digital lives, where players socialize, work, and learn, all within the same virtual universe.

What Lies Ahead?

The future of gaming could include:
- Eye-tracking and voice-controlled gameplay
- Biofeedback: games that adjust based on your heartbeat or emotions
- Play-to-earn models: earning real money through gaming
- AI-generated game levels and custom stories
- Eco-friendly and accessible gaming for all

Conclusion

Gaming is no longer just a hobby—it's a tech revolution shaping the future of entertainment, interaction, and innovation. With the rise of VR, AR, AI, and cloud platforms, the next generation of games will be more immersive, inclusive, and intelligent.

As Computer Science students, we are not just consumers of these experiences—we could be the creators of the next big game. So whether you're a gamer, a developer, or a dreamer, one thing is clear: the game is just getting started.

Tech Addiction: Is Your Phone Controlling You?

By: Jaya Yadav (Bsc. Physical Science - 1st year)

I check my phone as soon as I wake up... and it's the last thing I look at before I sleep. If this is your very thought—don't worry; you are not an alien. The world we live in gives screen time priority over real time. Scrolling through Instagram reels,
replying to streaks, binge-watching YouTube shorts — it's already beyond just being a habit. It's a way of life. In between, we forgot to ask ourselves a crucial question: "Am I using my phone, or is my phone using me?"

What Is Tech Addiction, Really?
Tech addiction isn't when someone uses a phone 24/7. This is when someone becomes restless without the phone. They check for notifications when none exist. Or they unlock the screen of their phone to find that there was no need for it at all.
That is because each like, comment, or ping triggers a shot of dopamine in our minds. It is the brain's
pleasure chemical; hence, it is designed to lure us back — like a never-ending reel of digital sugar.

Why We Just Can't Stop Scrolling
If we did an honest self-examination, the answer would be that it is not about lack of willpower. Instead, it is about the way these apps are designed. They apply quite intricate algorithms to grab and hold users' attention. The more time you spend on these apps, the more ads you'll be presented with, hence more profits for them and more distractions for you.
Instagram was opened to reply to a message... twenty reels later later? Yeah, we've all been there.

Is Technology our Enemy?
Absolutely not. Technology is empowering and is at the same time awesome. It lets us learn, connect, and grow. Tools such as ChatGPT, online courses, various apps for productivity have just made life so much easier, plus smarter. The real trouble arises when we stop thinking of technology as a tool and begin depending on it as if it was oxygen. We should not reject technology; we just need to adopt an attitude of mindful use.

Its Effect on the Mindsets
Tech addictions are invisible scars, yet they affect us in invisible ways: Shortened attention span -- It's hard to focus on the chapters, or even an interesting conversat on. Anxiety & FOMO--a serious threat for one's mind to be at peace. Sleep disturbances--Endless scrolling through Instagram? Poor sleep-cycle. Detachment from social life--We've become more "connected" yet also lonelier.

The Cycle Breaker: Small Steps, Big Changes

Here are some ways to regain control:

Setting limits — Almost all phones nowadays will keep track of how long you are staring at your screen. Use this data to inform your decisions!

Establish no-phone zones — Putting your phone away while eating, studying, or before bed

Turn off non-essential notifications — Every ping is an interruption.

Regular social media breaks — One day alone is enough to feel refreshed.

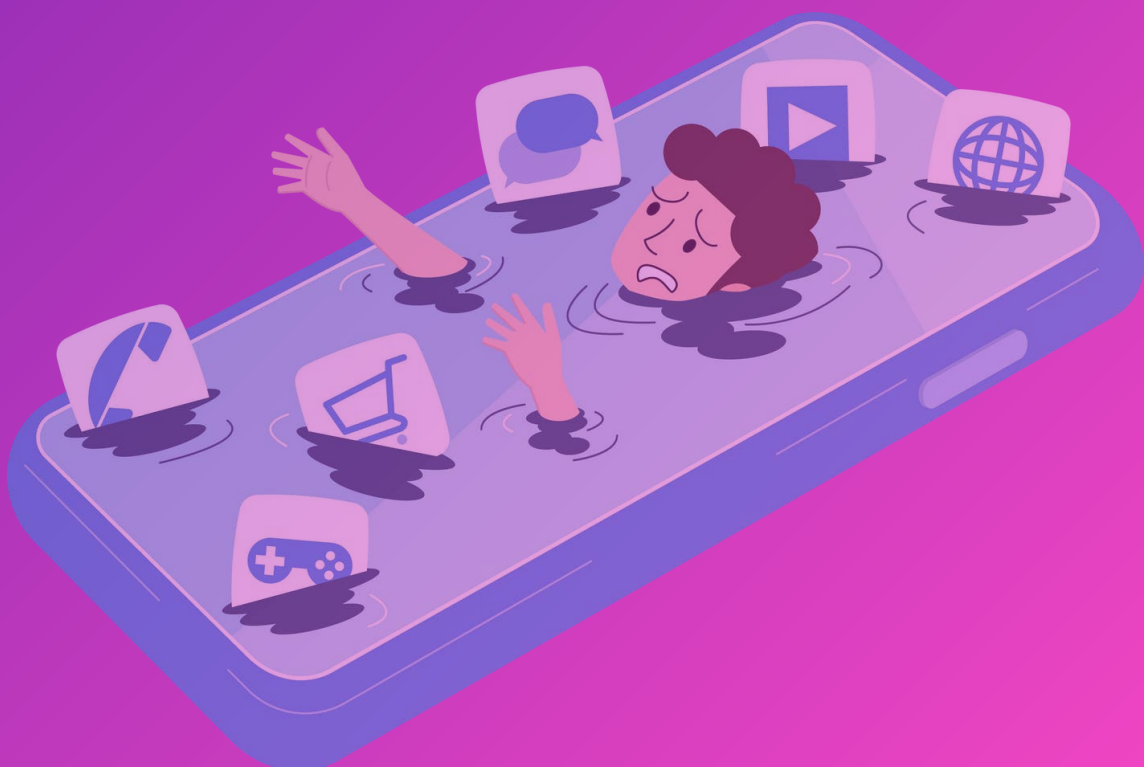Rediscover offline fun — Books, music, sports, talking to friends; these are still around!

In this world full of algorithms trying to steal our attention, the ability to manage one's screen is a superpower.

Your phone is a brilliant tool — it can educate you, connect you, entertain you.

But only if you're the one in control.

"Use your phone. Don't let it use you."

From Dead screens to multiverse Cosmos

By: Aditi Rathore (Bsc. Physical Science - 1st year)

Goodbye to Boring Screens

Flat, lifeless screens? Nah, that era is over. Now, it's all about interfaces that move, breathe, and vibe with you. Imagine menus that float, buttons that respond to your gestures, and digital worlds you can actually explore—not just click through. This is the new wave where UX meets 3D art and game design, leveling up how we interact with tech. With engines like Unity, interfaces have exploded beyond immersive 3D worlds. Powered by tools like Blender and spline modeling, these designs feel alive—responsive to your every move and gesture. It's like your screen is finally catching up with your imagination.

Gamify to Amplify

Game design isn't just about fun—it's a blueprint for hooking users. By weaving in progress, feedback, and storytelling, interfaces become intuitive and addictive. From virtual classrooms to smart health apps, gamified UI turns chores into quests you actually want to complete. I use 3D spline modeling to craft interfaces that don't just function—they breathe. Curves twist, stretch, and respond like they have intent, flowing with motion that feels almost instinctive. I'm drawn to how form and movement alone can create emotion—how a single curve can guide, invite, or even speak.

"The future is clear no more static screens. We're stepping into playable, immersive worlds where tech isn't just used— it's LIVED."

Cybersecurity Importance and Necessity

By: Eram (Bsc. Physical Science - 1st year)

What are the types of Cyberattacks?

"Cybersecurity doesn't matter—until it happens to you."
Many people believe that cyber attacks won't target them, so they often overlook the importance of protecting their digital information. However, in today's interconnected world, this kind of mindset can lead to serious consequences. As cyber threats become more advanced, protecting sensitive data and devices is essential. Cybersecurity is no longer optional; in fact, it is highly needed for safeguarding our data.

What is Cybersecurity?

Cybersecurity is all about keeping computer system, phones and digital data safe from hackers and online threats. It helps keep your personal information, bank details and online activities safe from being stolen or misused.

Cyberattacks occur worldwide every day, targeting both individuals and organizations. These attacks are attempts by hackers to gain unauthorized access to computers, networks or data to steal or exploit information. Without even basic security measures, anyone can fall victim to these threats. That's why understanding cybersecurity is so crucial. In fact, it is just as important as locking the doors to your home to protect your valuable items.

Cyberattacks can take many forms, but some types are far more common than others. The most widespread types include:

1.Phishing: It is a type of cyberattack that uses fraudulent emails, text, messages or phone calls to trick people into sharing sensitive data or downloading malware into their devices.

2.Ransomware: It is a malware designed to block the access to files on a computer. It does this by locking or encrypting files and then demands a payment to unlock them. This often makes people or organization feeling like paying is the quickest way to get their files back, which is why ransomware has become a popular method used by cybercriminals.

3.Denial-of-Service attack (DoS): It is a malicious targeted attack that floods a network with false requests in order to disrupt operations. In a DoS attack, people can't do everyday things like checking email, visiting websites or logging into online accounts because the targeted computer or network becomes overloaded and unresponsive.

4.Code injection attacks: It happens when a hacker inserts harmful code into a weak or unprotected computer system or network. This malicious code can change how the system works, often leading to serious security breaches.

With the growing variety of cyberattacks, cybersecurity has become a necessity. It is crucial for individuals and organizations to implement strong security practices to safeguard their information and system. Without a proper knowledge of cybersecurity, defending against these threats becomes extremely difficult.

What are the types of Cybersecurity tools?

In order to protect our sensitive data and devices, many cybersecurity tools have been designed to fight against different types of threats. Some of the must know tools are:

1.Network security monitoring tools: These tools keep an eye on all the data moving through your network and send alert right away if something suspicious happens. 2.Web vulnerability scanning tools: These tools check websites regularly to find security weaknesses. They scan files and look at the website's structure to spot problems that could let attackers in.

3.Encryption tools: These tools protect your data by turning it into a secret code that only someone with the right key can unlock it and is nearly impossible for anyone else to guess the correct key as there are many possible keys.

4.Antivirus software: It helps in finding and removing viruses from your computer. In fact, it is a smart way to stay safe online as it protects your computer from annoying ads, fake websites etc.

Conclusion

In the age of technology, cybersecurity is everyone's responsibility. At the end of the day, no one else will protect your digital data. It is up to you to safeguard it. Every click, every password, every download matters. Threats don't knock before entering and hackers don't wait for an invitation. Your digital safety starts with you.
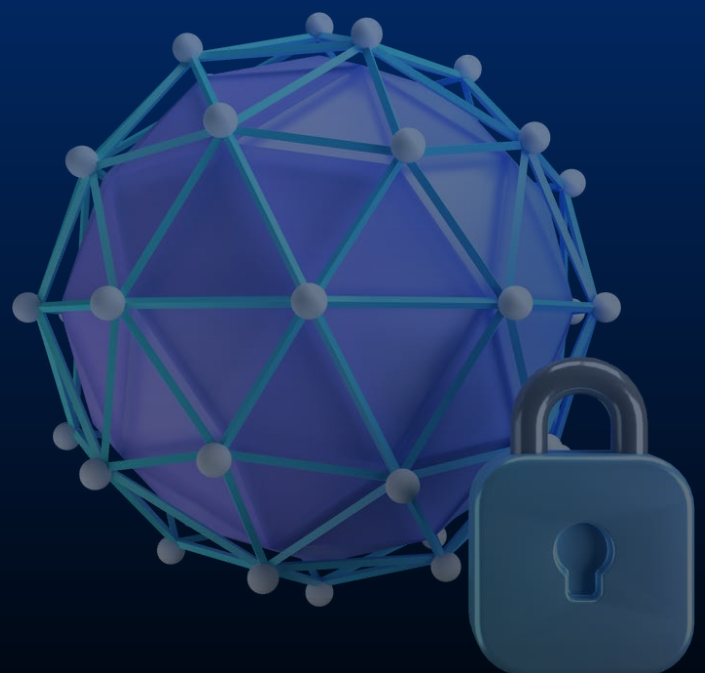
Generative AI: Beyond the Chatbot to Application in Real and Useful scenarios

By: Avantika Dwivedi (Bsc. Physical Science - 1st year)

It's quite common that when people hear about generative AI for the first time, they think of chatbots and AI-generated artwork. And with good reason — that's where this technology first seized the public's imagination. But the reality is, generative AI has expanded well past its early applications. It's not just about witty chats or crazy digital paintings anymore. It is now a great driver of innovation in health care, finance, education and beyond. Generative AI is about more than simple automation. It's a matter of creativity, transformation and potential.

Smarter Than Just Chatbots

Let's start with chatbots. Yes, they're some of the friendly faces of generative AI. We encounter them on customer service pages or personal assistants on our phones. But what's actually going on behind the scenes is much more sophisticated than mere scripted replies.

Today's generative AI models can take on intricate action, adjust to user preferences and reply in a manner that is significantly more human-like and helpful. From AI tutors that adapt to the way students learn to the use of bots as personal assistants that can help me manage my email and schedule, or provide other information on demand. These are not mere bots — they are intellectual partners.

Modification of Content Creation

AI's impact is apparent across the business spectrum, one of which is content creation. Writers, marketers, coders, and even those in the music industry are now being assisted by AI technologies. Do you want a new product description? AI will compose it for you. Need a new melody, code, or even a logo? There's a tool for each of these. The most outstanding quality is precision and speed. Given the right input, AI can produce usable content straight from the box without any or with minimal refinement. This enhances time efficiency and lowers operational costs for many businesses. Individuals get the opportunity to tap into creative potential they never thought they had.

Increase in Innovation

AI is not replacing creativity; instead, it provides an added push. With generative tools, artists can play around with different and new styles and go beyond their limitations. Game developers can create more involved experiences due to AI-generated environments. Musicians who would have never thought of some melodies or backing tracks can now use AI to create them.

This is not an indication of a reduced human touch but an indication of adding fresh perspectives to the human touch and experience. Think of it as an incredibly eager and tireless creative co-worker who always has more ideas to share.

11

Changing the Game Across Industries

The real wonder is when you observe how generative AI is being applied across different industries:

Healthcare: Artificial Intelligence is assisting researchers in discovering innovative drugs, tailoring treatment plans for patients, and precisely interpreting intricate medical images. It is enhancing the accuracy of research and improving the overall results.

Finance: Fraud detection and offering personalized investment guidance are now made easier with Generative AI. Financial services are becoming more sophisticated and secure thanks to these innovations.

Education: Now, AI has given teachers the option to develop customized lessons for their students. Students can receive on-demand presentations that adapt to their requirements, grading can be done automatically, and teachers will be able to spend more time on instruction.

Entertainment: Creating realistic virtual avatars, unique storylines for video games, and AI is reinventing every aspect of media and entertainment beyond our imaginations.

Retail: Retailers are better able to connect with customers with the help of AI because it brings advanced personalized shopping recommendations, advanced inventory systems, and AI-generated marketing materials.

~Opportunities—and Challenges

This does come with some challenges. The more technology advances, the more misinformation, algorithmic bias, and job displacement become concerning. These indeed honest questions require great care. Nevertheless, the overwhelming potential that can come from this technology is phenomenal.

~ Possibilities—and Difficulties

We should remember, however, that this transformation does come with challenges. Issues around misinformation and algorithmic prejudice, as well as the socioeconomic impacts of technology on employment, are all areas of great concern. These problems require scrupulously careful and ethically sound solutions. Yet even in light of such remarkable issues, technology's promise remains stunning.

As A Final Note

The discussion surrounding generative AI is no longer limited to futuristic concepts or tech showcases; it is rapidly and fundamentally incorporating itself into our lives. Now, from productivity enhancement to previously unimaginable creative expansion, this technology is evolving its range of applications.

The future isn't about humans versus AI—it's about what we can do together.

VIRTUAL ROBOTICS

By: Aditi Rathore (Bsc. Physical Science - 1st year)

We've all seen it in the movies-heroes waving their hands to control holograms or casually conversing with AI assistants like J.A.R.V.I.S. from Iron Man. Science fiction has long imagined seamless interaction between humans and machines. Today. Virtual Robotics is turning those visions into reality-powered not by hardware. but by codes.
"What once felt like fiction is now a reality where imagination meets innovation."

Virtual Robotics replaces mechanical parts with computer vision, AI, and real-time simulation. Using tools like OpenCV for image processing and MediaPipe for hand tracking, webcams become robotic robotic EYES. Speech Speech recognition reco and NLP are systems EARS, and BRAINS to understand, and respond-bringing machines to life in virtual enviroments.

The process begins with capturing input-video and audio-then interpreting it through smart algorithms. Gestures become commands. Speech becomes code. Actions follow, whether it's launching an app, typing mid-air, or simulating behavior inside platforms like Unity or Gazebo.

My Works

Inspired by these innovations. I built a Virtual Keyboard that lets users type in air with finger as virtual pointers-tracked via webcam-and my own J.A.RN.I.S.-lite voice assistant that listens, speaks and responds to commands in real time.

The Tech Tapestry Weaving Innovation

By: Anshika Yadav (Bsc. Physical Science - 2nd year)

In the past few decades, technology has gone from being a luxury to a necessity, permeating every aspect of our lives. We went from two phones and a computer in 1998, moving at the speed of a turtle (let's not forget dial-up internet), to the smartphones in our pockets and the smart cities we are slowly forming today. Technology continues to grow in exciting, innovative, and scary ways.

The Invisible Tech of Everyday Life -
Technology is so intertwined with our lives that we don't blink twice about it. Since childhood, we have gotten used to technology telling us what to watch, what to listen to, even what to buy - all powered by Artificial Intelligence. We use Alexa or Siri, not just as tools, but as a human-like technology companion that helps us stay informed and saves us time. There's even more tech happening behind the scenes with data analytics, enabling healthcare workers to learn from the conclusions of previous patients, and educational institutions customizing learning for every student at a level we have never experienced before.

There are wearable technologies, devices strapped like clothing, that do everything from tracking our steps to tracking our heart's health, stress levels, and even falls. Smart home devices have improved our quality of life by allowing us to control many appliances, lighting, and temperature with app.

Emerging Technology-
While we enjoy the short-term benefits, future disruption is on the way through some Emerging technologies.
Quantum Computing: Experts assume quantum computing will change the game of problem solving. It is expected to create substantial advances for previously unsolvable challenges in medicine, logistics, and cryptography.
5G and Beyond: Ultra-high-speed internet will improve real-time communication and allow remote surgeries to become safer and more efficient, and autonomous vehicles to be our source of independent transportation.
AR&VR: No longer a gimmick for gaming, AR&VR now represent change in training and design, therapy, and storytelling!

Green Technology: Climate change is an ongoing reality. Innovations like carbon capture, solar advancements, and biodegradable materials will be essential.
Ethical Challenges of a Digital Era With great power comes great responsibility. Technology presents serious challenges around privacy, surveillance, job dislocation, and disinformation. As AI continues to become more intelligent, the line between convenient human control continues to become blurred. Ethical technology development, digital literacy, and inclusive design should be central to innovation.

The Human Side of Technology: Ironically, as machines become more intelligent, it becomes increasingly important to add our human touch. Empathy, creativity, and critical thinking will become even more valuable as we increasingly rely on automated solutions. The future is not just to develop smarter machines but rather how we leverage them to create a better community and society.

Conclusion - More than Gadgets.
Technology is not really about gadgets or software, it is about empowering people to find solutions to problems. As we move toward a more connected world, the real opportunity for success is to remain curious, informed, and ultimately accountable.

Quantum Computing: Unlocking the Next Frontier in Problem Solving

By: Kashish (Bsc. Physical Science - 2nd year)

With technology now dictating every part of our lives, never has the need for faster, more intelligent, and more capable computing systems been so immense. From modeling intricate molecules to develop new medicines to decrypting highly encrypted information, regular computers, while tremendous in their capabilities, are starting to reach a breaking point. That is where quantum computing comes into play, with the potential to change the way we're able to process information and crack problems previously considered insurmountable.

What is Quantum Computing?

The basis of a classical computer are bits that exist in a state of either 0 or 1. Quantum computers, on the other hand, utilize qubits (quantum bits) that can be in several states simultaneously, owing to two principles of quantum mechanics: superposition and entanglement. Superposition enables a qubit to hold both the state 0 and 1 at the same time, allowing for computation in parallel. Entanglement connects qubits in a manner that changes the state of one instantly to correspondingly change the state of another, regardless of distance. These characteristics give quantum computers a unique edge over traditional systems for particular tasks.

Why Do We Need Quantum Computing?

Some issues are just too complicated for even the quickest supercomputers. For instance, factoring a 300-digit number or modeling the behavior of a protein molecule might take

thousands of years using classical systems. Quantum computers, taking advantage of their specialized architecture, can tackle such work exponentially quicker.
In short, quantum computing is not merely about speed, it's about possibility. It reveals computation doors that are theoretically impossible with traditional systems.

Emerging Applications Changing the World

Quantum computing is not a hypothetical advance, nor does it have to remain so, it can revolutionize entire sectors.

- Cybersecurity: Quantum computers may break present day encryption techniques, and hence the work on post-quantum cryptography to protect digital communications in the coming years.
- Pharmaceuticals and Healthcare: Quantum simulation of molecular structure may result in the fast development of new medicine and vaccines with a substantial reduction in time and expense of research.
- Finance and Logistics: Quantum algorithms have the ability to optimize portfolios, identify fraud, or solve cumbersome logistical issues with huge data sets.
- Artificial Intelligence (AI): Quantum machine learning has the potential to speed up
- training AI models, which could bring about a revolution in autonomous systems and
- decision-making algorithms.
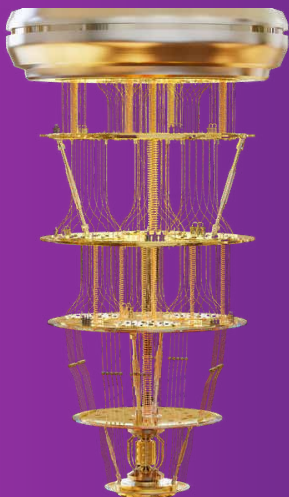
Who's Leading the Quantum Race?

Global tech giants and research institutions are significantly investing in quantum technology.

⬚ IBM has put quantum processors in the cloud through IBM Quantum Experience.

⬚ Google was in the news in 2019 when it achieved quantum supremacy, when its

quantum processor, Sycamore, ran a task in 200 seconds that would take a supercomputer 10,000 years.

Microsoft, Intel, D-Wave, and several startups are also leading research in alternative models of quantum computing. Countries like the USA, China, and India are launching national missions and funding initiatives to stay competitive in this field.

Challenges Ahead

Despite the promise, quantum computing is still in its infancy. The technology faces significant hurdles:

⬚ Decoherence: Qubits are highly sensitive and can lose their quantum state quickly.

⬚ Error Correction: Unlike classical computers, quantum systems are error-prone and require sophisticated correction mechanisms.

⬚ Scalability: It is still a principal engineering challenge to build and sustain stable systems

of hundreds or thousands of qubits. Additionally, quantum computers have to function at temperatures near absolute zero,

requiring highly controlled surroundings and colossal technical accuracy.

A Glimpse Into the Future Experts project that within ten years, quantum advantage, the moment when quantum computers approach practical problems more efficiently than their classical counterparts, will be a reality. The first hybrid models, which blend classical and quantum systems, will appear, eventually making fully quantum solutions for specialized purposes.

College curriculums incorporate quantum computing to prepare the next generation of computer scientists to dominate in this field.
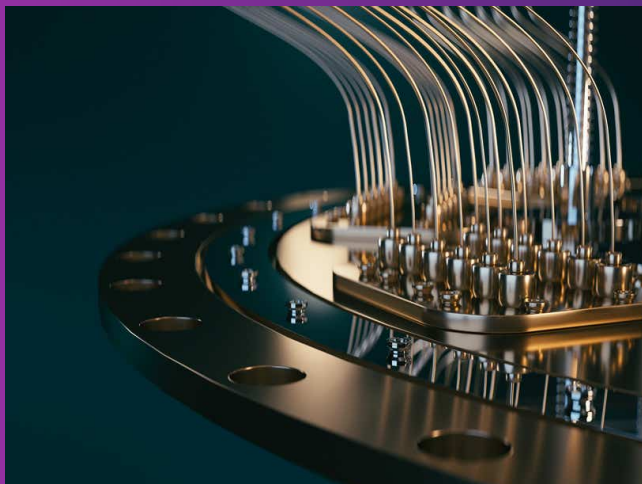
Conclusion

Quantum computing is not an improvement, it's a revolution in how we approach computation. It breaks the boundaries of what can be computed and opens the door to breakthroughs that

may redefine medicine, security, AI, and more.

As the discipline matures, it's clear that the quantum future is no longer a pipe dream but a reality in development. For students, researchers, and technology buffs, this is the moment to

get involved, dig in, and help shape what could be the most thrilling frontier of contemporary science.
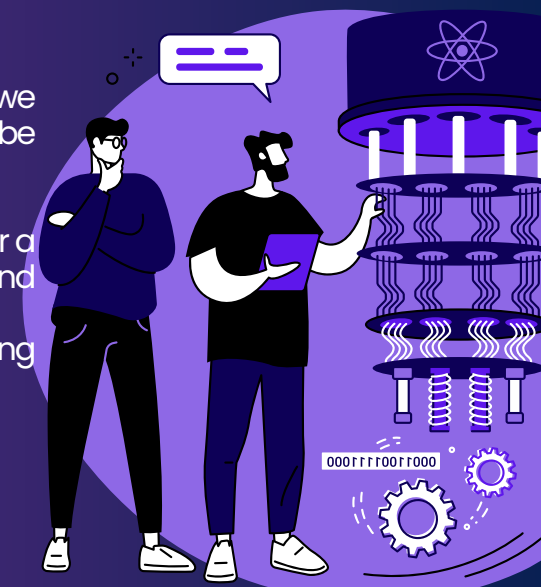
RIDDLES

I can lock things without a key,
I keep your data safe, you see.
I ask for pins, I use a face,
I guard your files in cyberspace.
What am I?

I light up in rows and columns bright,
Type a message and I'll show it right.
What am I?

I follow you around, remember your
likes, Show you ads and videos and
hikes. But I'm not your friend,
I'm just a code tracking where you
click on the road.   What am I?

I come in bytes and have no bark,
I run in phones, I run in cars.
From games to tools, I've got it all,
Without me, your screen does nothing
at all. What am I?

I'm found in clouds but don't bring rain,
I store your files with minimal pain.
Accessible anytime, anywhere too,
Saving your photos and your homework
too! What am I?

I work only when charged,
But never with food.
I'm smart, I sync,
I give your brain a clue. What am I?

I live in your pocket, I ring and
light up.
You talk to your friends, and I
rarely shut up. What am I?

I'm invisible but everywhere,
Without me, you'd be lost in air.
GPS knows where you've been,
I help connect your next of kin.
What am I?

I move fast but don't walk,
I connect people but never
talk. What am I?

I'm full of bugs but I'm not a bed,
I follow your code wherever it's
led. What am I?

I have keys but no locks,
I have space but no room,
You can enter but not go
outside. What am I?

I remember everything but I
never speak.
You can copy and delete me,
but I never sneak. What am I?

QUIZ TIME

1. WHICH PROGRAMMING LANGUAGE IS KNOWN FOR ITS USE IN AI AND MACHINE LEARNING, AND ITS SIMPLICITY DUE TO INDENTATION?

2. WHAT DOES HTTP STAND FOR?

3. WHICH COMPANY CREATED THE AI MODEL CHATGPT?

4. WHAT IS THE NAME OF THE SMALLEST UNIT OF DATA IN A COMPUTER?

5. WHICH COMPUTING CONCEPT ALLOWS MULTIPLE OPERATING SYSTEMS TO RUN ON ONE PHYSICAL MACHINE?

6. WHAT DOES GPU STAND FOR?

7. WHICH MOBILE OPERATING SYSTEM IS OPEN-SOURCE AND BASED ON THE LINUX KERNEL?

8. WHAT IS THE TERM FOR SOFTWARE THAT APPEARS TO BE USEFUL BUT ACTUALLY CONTAINS MALICIOUS CODE?

9. WHO IS KNOWN AS THE "FATHER OF THE COMPUTER"?

10. WHAT DOES 'IOT' STAND FOR IN THE TECH WORLD?

1.Python 2.HyperText Transfer Protocol 3.OpenAI 4.Bit 5. Virtualization 6.Graphics Processing Unit 7.Android 8.Trojan Horse9.Charles Babbage 10. Inernet of things

CIENCIA'25

ILUSTRADO
DEPARTMENT OF COMPUTER SCIENCE

MAITREYI COLLEGE

UNIVERSITY OF DELHI

The annual departmental fest of Ilustrado, the Computer Science Department of Matireyi College, was celebrated with unparalleled enthusiasm and grandeur. Ciencia 2025 brought together students, tech enthusiasts, and professionals for a day filled with innovation, creativity, and healthy competition. The fest showcased a perfect blend of technical prowess and artistic talent, leaving attendees inspired and entertained.

NAME OF THE CONVENOR- DR MANJU BHARDWAJ

THE ANNUAL TECH FEST

HIGHLIGHTS OF CIENCIA 2025

TECH SEMINAR: UX/UI DESIGN

The seminar delved into the core principles of User Experience (UX) and User Interface (UI) design, emphasizing the importance of creating intuitive and user-centered digital products. Participants gained valuable insights into how design influences user interaction and product success.

TECH DEBATE

A riveting debate on pressing technological issues, including AI, cybersecurity, and ethics, saw teams presenting well-researched arguments. Judges evaluated participants on content, delivery, and audience engagement. The winning team received a cash prize and certificates.

TECH BINGO

Teams raced to mark tech-related words on their Bingo cards based on hilarious definitions provided by the host. This fun-filled event tested quick thinking and tech knowledge, with winners earning cash prizes and gift hampers

TALENT SHOW

A platform for students to showcase their unique talents—singing, dancing, magic tricks, and stand-up comedy. The top performers were awarded cash prizes, certificates, and gift vouchers.

TREASURE HUNT

Teams solved cryptic clues scattered across the campus, testing their problem-solving and teamwork skills. The first team to crack the final puzzle claimed the grand prize and a commemorative plaque.

WINNERS AND ACHIEVEMENTS

TECH BINGO

- Roopshikha Biswas, Maitreyi college, emerged victorious, showcasing their tech vocabulary prowess.

TECH DEBATE

- Devika singh, Maitreyi college
- Anmol, Faculty of law, secured first place with their compelling arguments on AI ethics

TALENT SHOW

- Team (Prabhleen Kaur,Deepika, Saniya Shokeen,Anamika), Maitreyi college, mesmerizing dance performance earned her the top spot.
- Aleena Jomy, Jesus & Mary college, dance claimed second prize.
- Manvi Gangwar, Maitreyi college, bagged third position with her poetry.

TREASURE HUNT

- Team (Tara Rekhari, Parul Yadav, Navika, Ashneel Singh, Ansh Yadav) , Maitreyi college & Motilal Nehru college, solved the final riddle in record time, winning the grand prize.

AVGAAHAN'25

The International Interdisciplinary Academic Fest

Avgaahan 2025, the international interdisciplinary academic fest of Maitreyi College, University of Delhi, brought together over 3,300 undergraduate students in a vibrant celebration of knowledge, creativity, and collaboration. Held from 6th February to 6th March 2025, the fest featured a diverse lineup of online competitions including quizzes, photography, digital art, filmmaking, writing, coding, and more. With 1,628 participants in the preliminary rounds and 387 advancing to the finals, the event showcased remarkable talent from institutions across India and beyond. Maitreyi College led with strong participation, contributing 931 students to the total count
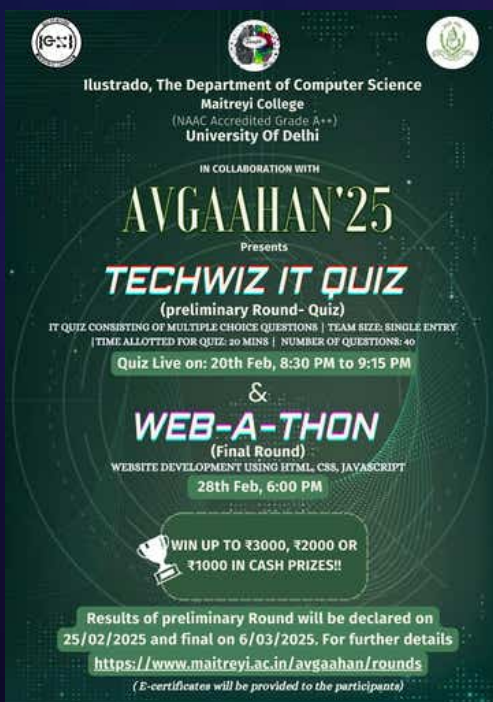
From the intense Web-a-Thon to the visually striking Phyzard and the powerful storytelling of Echoes of Time, Avgaahan 2025 brought together innovation, creativity, and intellect on a global scale. With participants pushing boundaries across disciplines, the fest wasn't just a series of events—it was a celebration of bold ideas and academic excellence. Backed by seamless execution and enthusiastic engagement, Avgaahan proved that learning can be limitless and unforgettable.

GANESH CHATURTHI CELEBRATION

This year's Ganesh Chaturthi celebration at Maitreyi College was full of joy, teamwork, and care for the environment. The Department of Computer Science and the NSS unit came together to make the event more special and meaningful. What made this celebration unique was that students from both groups made an eco-friendly Ganesh idol using natural clay. This was done with the thought of protecting nature during the visarjan (immersion). The idol was made in a way that it would dissolve easily in water without harming the environment. The celebration lasted for three days and included prayers, bhajans (devotional songs), sharing of prasad (offering), and spending time together. On the last day, the visarjan was done in a water tank inside the college campus to avoid polluting rivers or lakes. Everyone gathered around and chanted "Ganpati Bappa Morya!" as they said goodbye to Lord Ganesha, hoping for his return next year. This event was not only joyful and spiritual but also reminded everyone about the importance of taking care of nature and working together as a team.
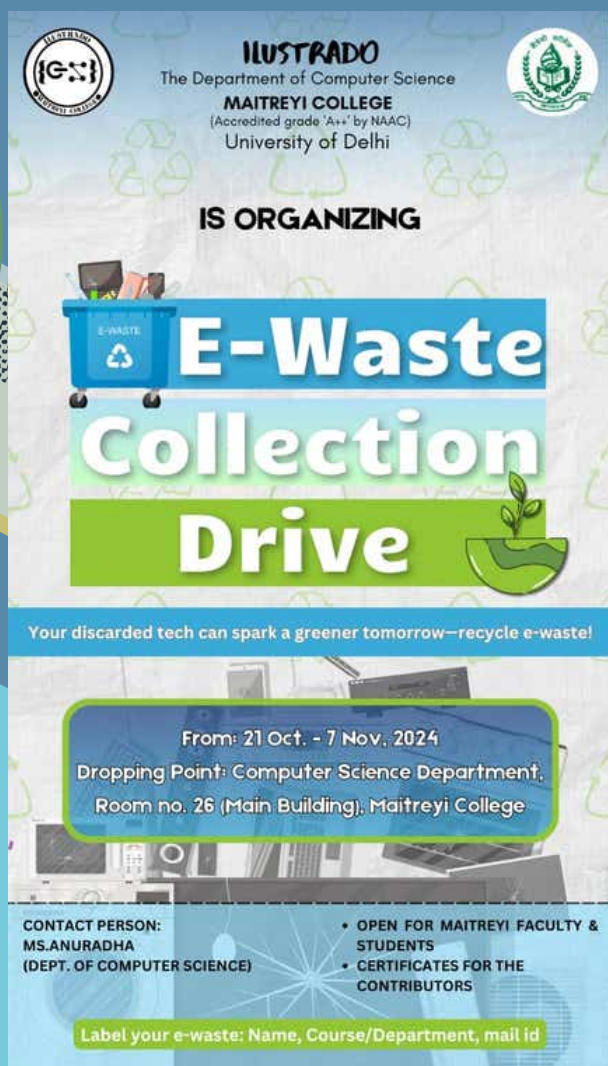
E-WASTE DRIVE

The Computer Science Department of Maitreyi College successfully organised the E-Waste Collection Drive 2025 with the goal of promoting the responsible disposal of electronic waste (e-waste) within the college community. The event was conducted in Room Number 26, Main Building, and saw enthusiastic participation from students, faculty, and staff.

Participants were encouraged to donate unused or broken electronic items such as laptops, earphones, chargers, remotes, and other gadgets for proper recycling. The drive aimed to raise awareness about the harmful environmental effects of improper e-waste disposal and inspire sustainable habits.

In the lead-up to the collection, the department launched an awareness campaign using posters, social media outreach, and on-ground promotion. Volunteers actively engaged the college community through informative sessions highlighting the long-term benefits of recycling e-waste responsibly.

The campaign ran for over 10 days, during which the department collected a significant amount of e-waste for eco-friendly recycling. This initiative reinforced Maitreyi College's ongoing commitment to environmental responsibility and digital sustainability.

Jnanpith award *2025*

About the event

We are delighted to share that students from our college had the opportunity to attend and volunteer at the Jnanpith award 2025, held at vigyan bhawan, New Delhi. Many students from different departments participated in the event, and we are proud to say that our Computer Science Department was one of the most actively involved groups.

As volunteers, we the students were assigned various responsibilities throughout the day, which included assisting with event coordination, guiding attendees, and helping manage on-site logistics. We worked diligently and with full dedication, making sure that every task entrusted to us was completed smoothly and professionally. Our efforts were not only fulfilling but also greatly appreciated.

One of the most special and unforgettable moments of the day was the presence of the Hon'ble President of India, Smt. Droupadi Murmu. It was a moment of great pride for all of us to witness her at the event. As a department, we were incredibly fortunate to get a close view of her and be part of the atmosphere that her presence created. This chance to see and be near the President was a truly precious experience — one that we will remember for a long time.

We were also honored to have our Principal Ma'am present at the event. She took the time to interact with us and acknowledged the hard work we put in as volunteers. Her words of encouragement meant a lot and added to our sense of pride and accomplishment.

It was a day filled with learning, excitement, and a strong feeling of being part of something bigger. The experience brought us closer as a department and gave us a unique platform to represent our college with responsibility and enthusiasm. It was not just an event, but a memorable moment of joy, teamwork, and honor.
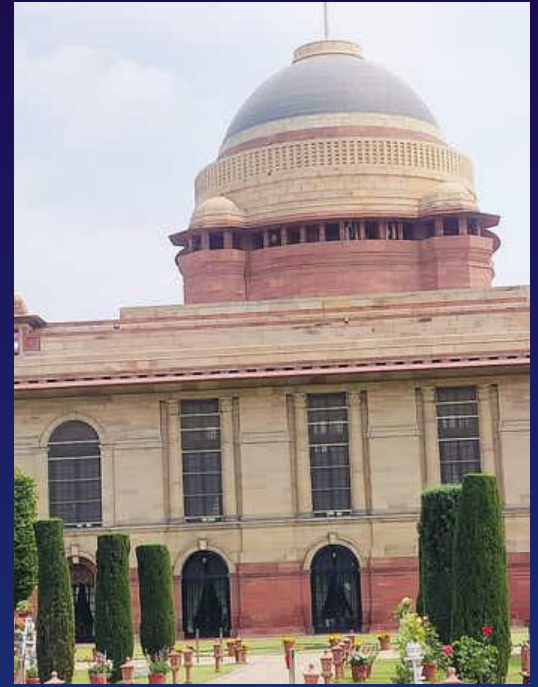
EDUCATiONAL TRiP
📍 AMRIT UDYAN

A Day at Amrit Udyan: Blossoms & Bonding
On March 27th, the Computer Science Department of Maitreyi College
visited Amrit Udyan at Rashtrapati Bhavan. What began as a springtime outing turned into a beautiful blend of nature, heritage, and learning. From the colorful Rose Garden and serene Terrace Garden to the insightful Herbal and Bonsai sections, each corner of the garden offered something unique. Interactive stalls, musical fountains, and a brush with peacocks added magic to the experience.
This educational trip was made even more special with our teachers and students coming together, learning, and exploring as one. Students got to learn a lot about nature, making it a truly enriching experience. More than just a trip, it was a moment of joy, discovery, and togetherness — a vibrant memory in full bloom.

SHORT TERM COURSE

PYTHON PROGRAMMING [30 HRS CERTIFICATE COURSE]

The Department of Computer Science
Maitreyi College
(Accredited grade 'A++' by NAAC)
University of Delhi
In collaboraton with
Short Term Courses Committee
(Under the aegis of IQAC)
Presents
30 Hours CERTIFICATE COURSE ON
PYTHON PROGRAMMING

- JOB ORIENTED COURSE
- OPEN FOR STUDENTS/ RESEARCH SCHOLARS/FACULTY
- NO PRIOR KNOWLEDGE OF PROGRAMMING REQUIRED
- PRACTICAL SESSIONS

Scan to register!

Dates: 15 - 24 Jan., 2025
Time: 9:00 AM - 1:00 PM
Fees: Rs. 1000/-
Venue: Maitreyi College

CONVENOR
DR.VEENA GHURIANI
ASSOCIATE PROFESSOR
DEPT. OF COMPUTER SCIENCE

COORDINATOR
DR.SHWETA SANKHWAR
ASSISTANT PROFESSOR
DEPT. OF COMPUTER SCIENCE

PATRON
PROF. HARITMA CHOPRA
PRINCIPAL

For any queries, mail us at technoupdate@maitreyi.du.ac.in

Objectives of the Course- To teach the basics of the Python Programming Language. This course is an Introduction to Python Programming language. The primary purpose of Python is Software Development. Python can be used to make web-applications at a rapid rate. Python is also used in the development of interactive games, Data Science and Data Visualization, Desktop GUI, Web Scraping Applications, Business Applications, CAD Applications. Python is used for analyzing statistical computations and algorithms. To develop these computations, one needs to know regular programming constructs like variables, data types, operators, loops, etc. Python is an interpreted, interactive, object-oriented programming language. It incorporates modules, exceptions, dynamic typing, very high level dynamic data types, and classes. Python has packages that encapsulates different categories of functionality in libraries (also called packages).

GLIMPSES OF COURSE:

Internships and Achievements

Shireen ~ 3rd year

- CANARY APP- Cure India
- Youth For Seva
- President NSS
- Delhi Police Award
- Republic day special guest
- Chairperson electoral literacy club

Nikita pal ~3rd year

- Gained a certificate as a student volunteer in Avgaahaan.
- Contributed as a volunteer in one week online National Faculty deveploment program.

Ananya Lodhi ~2nd year

- Interned at CURE International India Trust.
- Contributed as a volunteer in one week online National Faculty deveploment program
- Volunteered for Navodit as youth for seva volunteer
- Volunteered at jnanpith award held at vigyan bhawan

Anjali singh~2nd year

- Interned at CURE International India Trust.

Aparajita Tiwari ~2nd year

- Interned at Acmegrade in Machine learning

Vashudha ~2nd year

- Intern at AUOR as Artificial Intelligence and Strategic Execution.
- Serving as an Intern in Project uplift NGO.
- Website Development internship under Sygnific carriers.

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Aditi Rathore ~ 1st year

- Internship offer as an Front End Developer of Mercury AI.
- Pursuing a online BS Degree at IIT Madras in Data science and applications .

30

Eram ~ 1st year

- Interned as a Video Editor at IKKASA

Suramya ~ 1st year

- Internship offered as a digital marketing & content Writing Intern at digital Boosts

Naina~ 1st year

- Interned as a Graphic Designer At Travel paa

Khushi ~ 1st year

- Internship offered as a Bussiness Associate At IT Nova.

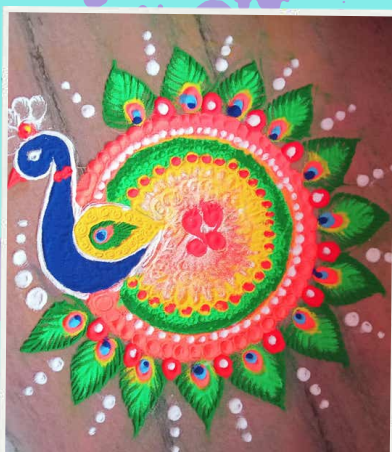# ARTFULL ESCAPE

Himanshi bisht
Bsc Physical Science, 1st yr

Namita
Bsc Physical Science, 1st yr

Riddhima Pant
Bsc Physical Science, 2nd yr

Aishwarya tiwari
Bsc Physical Science, 1st yr

Namrata tiwari
Bsc Physical Science, 2nd yr

Eram
Bsc Physical Science, 1st yr

Himanshi bisht
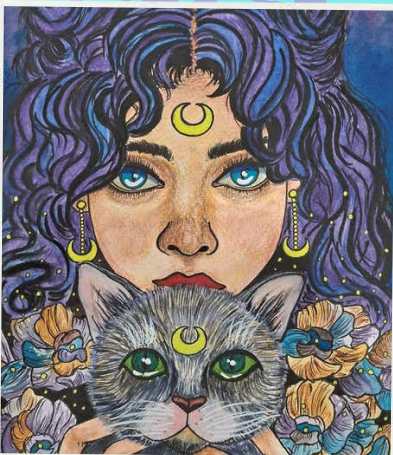Bsc Physical Science, 1st yr

Sakshi khare
Bsc Physical Science, 1st yr

Himanshi bisht
Bsc Physical Science, 1st yr

Shagun shukla
Bsc Physical Science, 1st yr

Riddhima pant
Bsc Physical Science, 2nd yr

Namita
Bsc Physical Science, 1st yr

Himanshi bisht
Bsc Physical Science, 1st yr

Namrata tiwari
Bsc Physical Science, 2nd yr

Eram
Bsc Physical Science, 1st yr

Riddhima pant
Bsc Physical Science, 2nd yr

I want to take this opportunity to wholeheartedly praise our exceptional students on launch of the third edition of Techgenix. The innovative ideas and collaborative spirit of the editorial team has been instrumental in success of this initiative . It has been a great experience to be associated with you in this journey of creativity. I hope that this learning process was really joyful, where you got a chance to push the boundaries of your creativity, and collaborate with your peers. Keep up the excellent work!
Best Wishes

– Dr.Manju Bhardwaj

As we navigate another exciting academic year in the Department of Computer Science, I'm filled with pride in the strides our students are making. Whether it's breakthroughs in artificial intelligence, innovative projects, cutting-edge research, creative endeavors, or leadership in administrative roles, our department continues to thrive as a hub of innovation and learning. This newsletter stands as a celebration of our collective work, spirit, and unwavering commitment to excellence. May each contribution featured here inspire you to explore further, create boldly, and collaborate deeply. I would also like to extend my heartfelt congratulations to the entire newsletter team for their creativity, dedication, and hard work in bringing this edition to life. Your efforts are deeply appreciated. Keep up the great work—we look forward to many more inspiring editions ahead!

– Dr.Jyotsna Talreja Wassan

MENTOR'S MUSINGS

DEPARTMENT OF COMPUTER SCIENCE

BATCH' 26

BATCH' 27

BATCH' 28

Sources:
- Canva.com
- https://www.freepik.com/
- https://chatgpt.com/c/Riddles technology

Department of Computer Science
Maitreyi College
University of Delhi