



COMPASS

~ Showing the right Direction... ~



RAJEEV GANDHI MEMORIAL COLLEGE
OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)
NANDYAL



(ESTD-1995)
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About RGMCET

Rajeev Gandhi Memorial College of Engineering and Technology was founded in the year 1995. It is located in a 32.04 acre sprawling campus on NH-40 (old NH-18) at Nandyal, Kurnool (Dist), Andhra Pradesh.

It is the dedicated commitment and efforts of our Chairman, the man with vision "Vidyarathna" Dr. M. Santhiramudu, who started the institution with a motto "EDUCATION FOR PEACE". RGMCET is a road of elegant educational journey, yet path breaking in different dimensions.

Rajeev Gandhi Memorial College of Engineering & Technology (Autonomous) is Ranked in the band of 201-300 in Engineering category as per National Institutional Ranking Framework (NIRF) - 2025, Ministry of Human Resource Development (MHRD), Govt. of India.

RGM CET Vision

- *To develop this rural based engineering college into an institute of technical education with global standards.*
- *To become an institute of excellence which contributes to the needs of society.*
- *To inculcate value based education with noble goal of “Education for peace and progress”.*

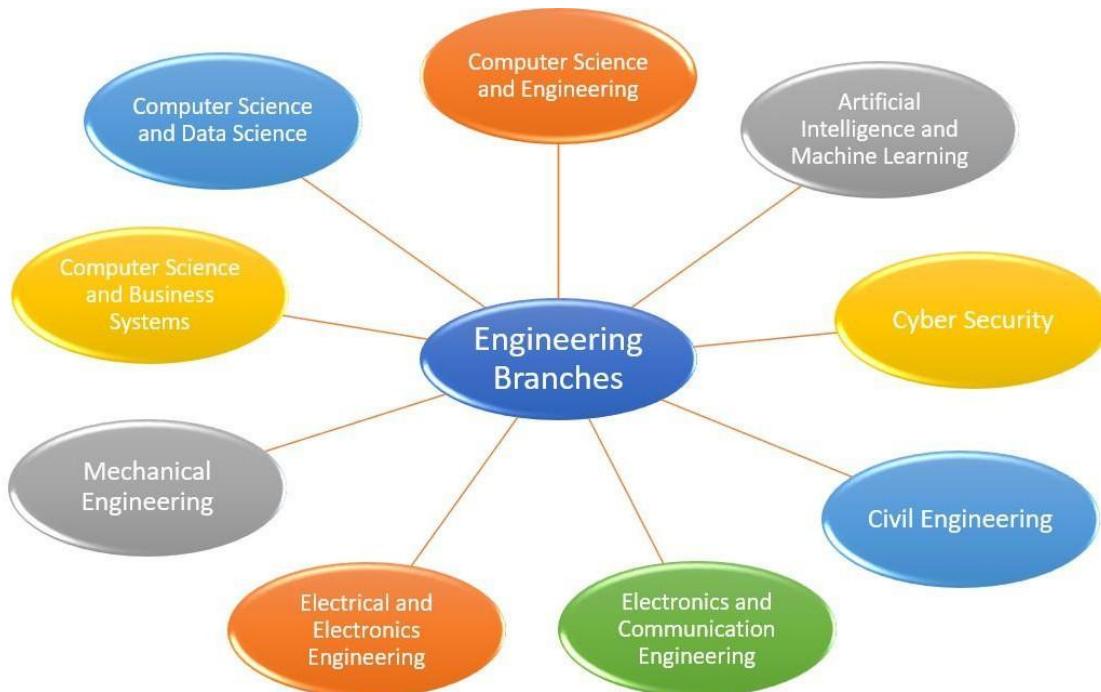
RGM CET Mission

- *To build a world class undergraduate program with all required infrastructure that provides strong theoretical knowledge supplemented by the state of art skills.*
- *To establish postgraduate programs in basic and cutting edge technologies.*
- *To create conductive ambiance to induce and nurture research.*
- *To turn young graduates to success oriented entrepreneurs.*
- *To develop linkage with industries to have strong industry institute interaction.*
- *To offer demand driven courses to meet the needs of the industry and society.*
- *To inculcate human values and ethos into the education system for an all-round development of students*

RGM CET Quality Policy

- *To improve the teaching and learning.*
- *To evaluate the performance of students at regular intervals and take necessary steps for betterment.*
- *To establish and develop centers of excellence for research and consultancy.*
- *To prepare students to face the competition in the market globally and realize the responsibilities as true citizen to serve the nation and uplift the country's pride.*

Engineering Branches offered in RGMCET



About COMPUTER SCIENCE AND ENGINEERING

CSE Department Vision

- *To empower students with cutting edge technologies in computer science and engineering.*
- *To train the students as entrepreneurs in computer science and engineering to address the needs of the society.*
- *To develop smart applications to disseminate information to rural people.*

CSE Department Mission

- *To become the best computer science and engineering department in the region offering undergraduate, post graduate and research programs in collaboration with industry.*
- *To incubate, apply and spread innovative ideas by collaborating with relevant industries and R & D labs through focused research groups.*
- *To provide exposure to the students in the latest tools and technologies to develop smart applications for the society.*

Program Outcomes (PO's) - Engineering Graduates will be able to:

1. *Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*
2. *Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*
3. *Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*
4. *Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.*
5. *Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.*
6. *The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*
7. *Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge, and need for sustainable development.*

8. *Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*
9. *Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*
10. *Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*
11. *Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*
12. *Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.*

Program Specific Outcomes (PSO's)

1. *Students will have the ability to understand the principles and working of computer systems to assess the hardware and software aspects of computer systems.*
2. *Students will have the ability to understand the structure and development methodologies of software system, that possess professional skills and knowledge of software design process.*
3. *Students will have the ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.*

Program Educational Outcomes (PEO's):

- *To Pursue a successful career in the field of Computer Science & Engineering or a related field utilizing his/her education and contribute to the profession as an excellent employee, or as an entrepreneur.*
- *To be aware of the developments in the field of Computer Science & Engineering; continuously enhance their knowledge informally or by pursuing graduate studies.*
- *To engage in research and inquiry leading to new innovations and products.*
- *To be able to work effectively in multidisciplinary and multicultural environments.*

To be responsible members and leaders of their communities, understand the human, social and environmental context of their profession and contribute positively to the needs of individuals and society at large.

Incipience:

A short note for readers... We want to thank all of those who supported us in Compass Magazine. We will always be gratified to the faculty who supported us through this journey.

The essential purpose of Compass Magazine is to inform, engage, inspire and entertain a diverse readership including faculty, staff, students and other friends of RGM CET.

Our magazine glides you through a series of queries you get during the phase of B.Tech and we tried to possibly find answers and solutions for your queries and problems.

You will get to know how the scope of Computer Science and Engineering has in present society and what are the important guidelines you need to follow in order to embellish your success in stream of your choice. So we wish you a happy experience and good luck with your future.



*Rajeev Gandhi Memorial College of Engineering
& Technology*

Offering B.Tech., & M.Tech., Courses: Accredited by NBA (UG Program)

Approved by A.I.C.T.E., NEW DELHI – Affiliated to J.N.T.University, Anantapur,

Accredited by NBA (6-Times), Accredited by NAAC with 'A+' Grade(Cycle-3), New Delhi,

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(ESTD – 1995)

PREFACE

I deem it a great honor to be vested with the responsibility of playing the role of Program Director for the compass magazine of the academic year 2025-26. Compass document for brilliant and budding engineers, has the objective of triggering ripples in their thought process of bringing forth innovative ideas in modern and emerging fields of technology. The heartening and overwhelming response, in the form of as many as **40** articles of super quality from all parts of the department, speaks volumes about the tremendous zeal and caliber of engineering students in the department. Profuse thanks to all these young boys and girls from the bottom of my heart. My sincere congratulation to young authors of accepted articles. The articles are treasured in this magazine. All the work connected with this magazine could not have been successfully executed but for the active advice and wonderful support of the esteemed chairman, respected principal, dear Managing Director, able and ever-agile administrative officer, beloved colleague's dear student friends and non-teaching staff. Here is my grateful acknowledgement of their priceless support with sincere thanks.

Dr. K. SUBBA REDDY
PROGRAM DIRECTOR & HoD

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LIVE LIKE A COCKROACH

Charles Darwin once said, “It’s not the strongest or the smartest that survives, but the one that adapts the best.” That’s why I say—be like the cockroach.

I know, it sounds weird. Cockroaches are usually seen as disgusting, creepy little creatures that nobody likes. We scream when we see one. We immediately try to kill it. But if you think about it, cockroaches have one quality that makes them absolutely amazing: they know how to survive. Unlike lions, eagles, or tigers that we admire for their strength or beauty, cockroaches survive simply because they can adjust anywhere. Hot or cold, jungle or city, summer or winter—they always find a way. While dinosaurs, who were once the biggest and strongest animals on earth, went extinct because they couldn’t adjust, cockroaches are still here, millions of years later. That’s the real lesson: the ability to adapt keeps you alive and growing. People who resist change get stuck. People who accept change and say, “It’s okay, I’ll adjust” move forward.

Cockroaches don’t panic when things around them change. They don’t complain. They just adapt. Imagine if we all had that attitude—less stress, less drama, more resilience. Even humans, with all our power, have failed to wipe them out. Think about it: there are entire companies, with factories and offices, that exist just to kill cockroaches. And still, they survive—sometimes even becoming resistant to sprays that were once deadly. That’s next-level adaptability.

So yes, they may not be pretty or majestic, but cockroaches teach us a powerful life **Skills**:

- Don’t just be strong or smart—be adaptable.
- When life changes, don’t complain—adjust.

Conclusion:

If lions symbolize strength and eagles symbolize vision, cockroaches symbolize survival. And survival, in the end, is what really matters.

C JYOSHNA
II Year

THE POWER OF SMALL BEGINNING

We often look at success as a grand, finished product—a towering oak tree (sindhoora vruksham) that has stood for decades. We admire its strong branches and deep roots, but we rarely think about the tiny, fragile acorn it once was. A year ago, I had a thought so small, it could have fit in the palm of my hand. It was an idea to learn to code. At the time, it seemed insignificant—just a fleeting thought I almost let go. I never imagined it would grow into a project that now defines my college experience, teaching me that the biggest accomplishments always begin with the smallest, most insignificant steps.

Planting the Seed

My own "acorn" was "downloading a beginner coding app and completing the first lesson". This one small action was the equivalent of planting a seed in the ground. It was a commitment, a decision to start something, no matter how small it felt at that moment. There was no grand plan, no vision of what it would become, just the simple act of beginning.



Oak tree seed (small beginning)

Nurturing the Sprout:

The growth wasn't immediate, nor was it easy. For weeks/months, "the coding concepts felt overwhelming and I wanted to quit". It was a tiny sapling struggling to find light, and there were many days I wanted to give up. The hardest part wasn't the work itself, but the lack of visible

progress. But I kept practicing my code for an hour each evening. I learned to celebrate small victories, like finally understanding a complex line of code". It was through this slow, patient process that my sapling began to grow stronger, its roots taking a firmer hold.

The Growing Tree:

Today, that small coding hobby has grown into something far bigger than I ever imagined. It has led to new opportunities, friendships, and a sense of purpose I didn't have before. The tree it has become provides a foundation for a potential. I am reminded every day that its strength comes not from a sudden miracle, but from that one small act of planting the seed.



The grown oak tree(biggest growth)

Conclusion:

The most profound lesson I've learned from this journey is a simple one: don't underestimate the power of a small beginning. The world's biggest trees were once tiny seeds. Great works of art started with a single brushstroke, and remarkable movements began with one voice. The courage isn't in finishing something great; it's in starting something small. So, what seed will you plant today?

HACKING IN MOVIES VS. REAL-LIFE HACKING

In today's digital world, hacking has become a popular theme in movies. Audiences are fascinated by how a single person sitting in front of a computer can control entire systems, crack security codes, and even save the world. However, while movies add speed, glamour, and drama to hacking, real-life hacking is very different. It is slower, more technical, and requires years of practice and knowledge.

Hacking in Movies

In films, hacking is often portrayed as a thrilling process with colorful animations, endless scrolling codes, and dramatic music. A few famous examples include:

- **The Matrix (1999):** Hackers appear as rebels fighting artificial intelligence, breaking into computer systems with style.
- **Hackers (1995):** A group of teenagers bypasses security systems and fights against corporate corruption.
- **WarGames (1983):** A young hacker accidentally gains control over U.S. military nuclear systems, nearly starting World War III.
- **Blackhat (2015):** Shows a hacker helping the government stop a global cyber-criminal.

These movies create a picture that hacking is fast, heroic, or destructive. With just a few keystrokes, hackers can do the impossible.

Hacking in Real Life

The reality of hacking is far less dramatic. Hackers spend hours, days, or even years finding weaknesses in systems. Instead of fancy 3D graphics, they mostly work with command-line interfaces and coding scripts. Real hackers need deep knowledge in:

- **Computer networks**
- **Cryptography**
- **Operating systems**
- **Programming languages**
- **Cybersecurity tools**

Examples from real life include:

The real world' hackers

- **Kevin Mitnick** : Once known as the world's most wanted hacker, he hacked major companies using social engineering and technical skills. Later, he became a cybersecurity consultant.
- **Anonymous (Hacktivist Group)**: A collective of hackers that has launched cyberattacks against governments and organizations worldwide.
- **WannaCry Ransomware Attack (2017)**: A real-life cyberattack that affected more than 200,000 computers in 150 countries.

Unlike movies, real hackers do not always act alone. Many attacks are carried out by organized groups with specific goals, whether financial gain or political influence.

Impact of Movies on Society

Even though movies exaggerate hacking, they play an important role. They inspire young people to learn computer science and cybersecurity. Many students who watched WarGames or Hackers decided to pursue careers in ethical hacking or cybersecurity research. At the same time, movies also create myths that hacking is easy, which is far from the truth.

Conclusion:

In conclusion, hacking in movies is meant to entertain, with fast-paced action and impossible tasks. Real-life hacking, however, is a complex, slow, and technical process that requires patience, creativity, and years of study. While films may give an exaggerated picture, they have inspired people to explore cybersecurity as a career. Real hacking is not about glamour—it is about responsibility, skill, and protecting the digital world.

R. VIJAYA RAJU
II Year

FAILURE

Failure is when we don't achieve what we wanted or expected, but it's a natural part of life and learning. Everyone makes mistakes or faces setbacks, and it's okay to fail. In fact, failure helps us understand what went wrong and how to improve, building resilience and teaching us to bounce back and try again. As Thomas Edison famously said after 1,000 attempts to invent the light bulb, "I didn't fail, I just found 1,000 ways that didn't work." **Failure is a step towards success**, and embracing it can lead to growth, learning, and ultimate achievement.

Failure is a universal experience that shapes us in profound ways. It's a natural part of growth, learning, and innovation. When we fail, we gain valuable insights, develop resilience, and discover new paths forward. Instead of fearing failure, we can embrace it as a stepping stone to success, using it to refine our approach, build character, and ultimately achieve our goals. By shifting our perspective, we can turn failure into a powerful catalyst for personal and professional growth.

Failure and success are two sides of the same coin. We need failure to recognize, understand, and appreciate great success. Instead of viewing failing as a source of pain and frustration, use it to your advantage and inspiration on the journey to make your dreams come true.

The Failure is like a bump in the road. It doesn't mean you're not good enough or that you've reached the end—it's just a moment where things didn't work out the way you wanted. Everyone fails at something, whether it's a test, a project, or a goal. What matters is how you respond. If you give up, then failure sticks. But if you try again, learn from what went wrong, and adjust, then failure becomes a stepping stone to success.

Failure is also a test of our determination and resilience. It pushes us to re-evaluate our approach, refine our strategies, and work harder towards our goals. Every failure brings us closer to success by teaching us what doesn't work and guiding us toward what might. As Henry Ford said, "Failure is simply the opportunity to begin again, this time more intelligently." By embracing failure as a natural part of the journey, we can turn setbacks into stepping stones and achieve greatness.

Failure is also an opportunity for self-reflection and growth. Allows us to identify our weaknesses, build resilience, and develop a stronger sense of self. When we fail, we can ask ourselves: What went wrong? What could I have done differently? How can I improve? By

analysing our failures, we can gain valuable insights and develop new skills. Failure is not the opposite of success; it's a part of the journey to success. As Walt Disney said, "All the adversity I've had in my life, all my troubles and obstacles, have strengthened me... You may not realize it when it happens, but a kick in the teeth may be the best thing in the world for you."

It is like a puzzle piece that doesn't fit – it shows us what doesn't work, but brings us closer to finding the right fit. It's okay to fail; what's important is that we learn, adapt, and keep moving forward. Failure isn't something to fear, but something to learn from, and it ultimately leads us to success.

Conclusion:

“Failure is not the end, but a step towards success.”

In the end, failure isn't something to be afraid of; it's part of life. It teaches us valuable lessons, helps us grow, and shows us how to do better next time. Rather than letting failure hold you back, use it as a stepping stone to move forward. Remember, every successful person has faced failure. what makes them successful is that they didn't give up. So, embrace failure, learn from it, and keep going. Success often comes from trying again and again, no matter how many times you fail.

**C. Harshitha
II Year**

THE CROCHET BUSINESS

Crochet is more than just a craft—it's an opportunity to turn creativity into a profitable business. From handmade accessories to home décor, crochet products are in demand for their uniqueness and artistry.

Products in Crochet Business:

- Clothing items (sweaters, cardigans, tops)
- Accessories (hats, scarves, gloves, bags)
- Home décor (blankets, cushion covers, wall hangings)
- Toys and amigurumi
- Customized gifts

Target Market:

The target audience includes handmade product lovers, eco-conscious buyers, fashion enthusiasts, gift seekers, and people looking for unique, personalized items.

Marketing Strategies:

- Social Media Marketing (Instagram, Pinterest)
- Selling on platforms like Etsy, Amazon Handmade, and Shopify
- Participating in local craft fairs and exhibitions
- Word-of-mouth and customer referrals
- Collaborations with fashion influencers

Costs and Profitability:

The main expenses include yarn, hooks, packaging, and marketing. Since crochet is handmade, it allows for higher pricing, especially for custom orders. Profit margins can range between 30-60% depending on product type and branding.

Challenges and Opportunities:

Challenges include time-intensive production, competition, and seasonal demand. However, opportunities lie in offering personalized products, eco-friendly materials, and tapping into the growing trend of handmade fashion.

Conclusion:

The crochet business proves that passion and creativity can lead to entrepreneurship. With the right strategy, crochet can grow from a hobby into a sustainable and profitable business.



B. Shivani Kumari

WHERE WE ARE

Where are we? Where are we headed? What is our destination? If we keep asking these questions, they will keep coming. But We should not forget our bonds and parents, who have come so far and how much we have sworn Today, we are seeing many changes in society. Time is passing by so quickly. We are observing new changes. Nature is not cooperating with us. What is the fate that is not coming according to time? Everyone is turning towards AI. But is AI a benefit to us? Is it a loss? This has become an elusive question. Some people benefit from AI. On the other hand, some people are losing. AI swears differently by nature. That is not to say that AI is not necessary, but we should not use it to harm nature.



Artificial Intelligence:

World is moving towards development... Technology is developing at an even faster pace. Today, almost all the tasks that humans can do are being done by machines, and they are being made to do them. In 1965, scientist and Nobel laureate Herbert Symes said that "machines will be able to do anything that humans can do in the next hundred years." It seems that the same situation has begun today. AI is ready to do artificial intelligence in agriculture, education, healthcare, military, and family relationships. But will it have a positive impact in these fields? Or will it lead to a dark future? It remains to be seen.

Our Bond, our intelligence, our future

These days, technology is rapidly changing our lifestyle. Artificial Intelligence (AI) has entered our homes, work, and even our thoughts.

But we should not forget our families in the midst of change. AI is damaging human relationships. Affection, and family ties are decreasing in families. On the one hand, society is turning towards technology. AI has more disadvantages than advantages. It is being used mostly for evil. Many innocent people are being forced into it. Families are being separated. Love and affection are decreasing. Whenever human relationships go astray, we have to see a lot of injustice, crimes in society, etc.



By AI 'Our lives have become more convenient with smart devices at home, online tutors for children's education, and health monitoring apps for the elderly. But there is one truth that reminds us of all this.

"AI cannot replace our bond".

the future, where we are geographically Not only that, in will depend on our knowledge, our values, and our connections. Our family, humanity, and intelligence are walking together, showing the way to the world of tomorrow. But in these changes, our family bond will not change. As always, love, connection, and mutual support are at the core of us.

Can AI annotation improve the way we learn and teach?

Artificial intelligence is already being used to teach in many developed countries, but the class

automation that a professor says is different. Only a teacher decides what to say and how to say it depending on the time in the class. But automation completes the class given to him. In some cases, this technology is useful. But using it in all cases is not correct at all. Artificial intelligence does not understand human feelings and emotions. Therefore, it loses the relationship with the students. only the teacher can get that relationship. Excessive use of AI in education is likely to damage the teacher-student relationship. AI has not taken the place of the teacher.



Virtual Reality (VR):

One of the recent innovations in education is Virtual Reality, which is being used for everything from teaching history to helping students with math skills. Virtual Reality is a three-dimensional computer-generated environment that people can explore and interact with. VR is enabling teachers to find new ways to integrate experiential learning into their classrooms, truly shaping what it means to be a student. VR is a great way for students to connect with each other. Even when they are separated by distance but using the same Virtual Reality program, they can communicate safely instead of being in dull classrooms. With Virtual Reality, students can explore things they may never have the chance to see or learn in.



Conclusion:

AI is neither purely beneficial nor entirely harmful—it is a double-edged sword. Its impact depends on how responsibly and ethically it is developed, regulated, and integrated into society. When balanced carefully, AI can be a powerful tool to improve human life while minimizing its risks. AI also brings disadvantages such as job displacement, ethical concerns, high implementation costs, and risks of bias or misuse. Over-reliance on machines may weaken human skills, and issues like data privacy and security remain major concerns.

K. Chandra Mohan Reddy

II year

THE MENTAL HEALTH CRISIS AMONG YOUNG PEOPLE

Introduction:

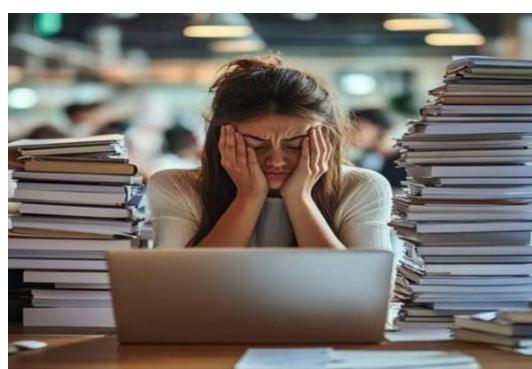
In recent years, the issue of mental health among young people has gained increasing attention. With rising cases of anxiety, depression, self-harm, and suicide, experts are calling it a silent epidemic". The mental well-being of today's youth is under pressure from academic stress, social media, bullying, family issues, and lack of emotional support. It's time we talk about is openly.

A Growing Concern:

According to the World Health Organization (WHO), one in seven 10-19-year-olds experiences a mental health condition. Suicide is now the fourth leading cause of death among 15-19-year-olds globally. The numbers are alarming and highlight the urgent need for intervention.

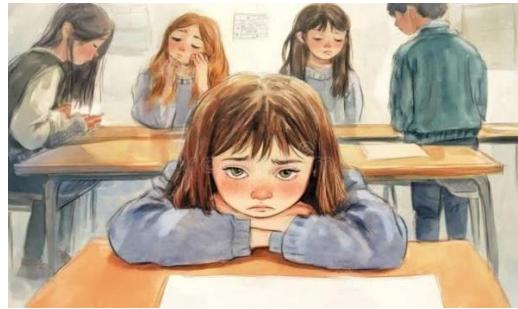
Academic and Peer Pressure:

The burden of academic performance, competitive exams, and career expectations has made students highly vulnerable to stress and burnout. In many cultures, the pressure to succeed can overwhelm young minds, leading to serious psychological consequences.



Isolation and Loneliness:

Although today's generation is more digitally connected than ever before, many feel emotionally isolated. Lack of real-life friendships and meaningful conversations can lead to loneliness and depression.



Some common signs that a young person might be struggling mentally include:

- Sudden change in behavior
- Withdrawal from friends and activities
- Drop in academic performance
- Irritability or mood swings
- Talking about hopelessness or suicide



What Can Be Done?

For Parents and Teachers:

- Encourage open conversations.
- Reduce stigma around mental health.
- Provide emotional support and understanding.

For Friends:

- Be kind and non-judgmental.
- Listen without interrupting.
- Encourage them to seek professional help.

For Young people:

- Know that it's okay not to be okay.
- Reach out to counselors, helplines, or trusted adults.
- Practice self-care and take breaks from screens.

Importance of Mental Health Education

Incorporating mental health education in schools can build awareness and resilience among young people. Students should be taught emotional coping skills, mindfulness, and stress management strategies.



Conclusion:

The mental health crisis among youth is real and rising—but it is preventable and treatable. As a society, we must prioritize mental wellness just like physical health. It begins with empathy, awareness, and timely support.

Let's break the silence, end the stigma, and help young generation thrive emotionally and mentally.

S. NASREEN BANU

THE UNIVERSAL SIGNIFICANCE OF THE NUMBER 7: MATHEMATICS, CULTURE, AND TRADITION

Introduction:

The number 7 is one of the most symbolically rich and mathematically unique integers. It is a prime number, divisible only by 1 and itself, and occupies a distinctive place between 6 and 8 in the natural sequence. As the fourth prime number, it serves as an object of study in mathematics while simultaneously holding immense cultural, religious, and philosophical significance across civilizations.

Mathematical Importance:

From a mathematical perspective, 7 demonstrates remarkable properties:

It is a prime number situated between 5 and 11.

The fraction $1/7$ produces the recurring decimal $0.142857\dots$, a cyclic pattern often cited in number theory.

A seven-sided polygon, or heptagon, though uncommon in basic geometry, plays a role in advanced studies of symmetry and tessellation.

In probability theory, rolling a sum of 7 with two dice is the most common outcome, reflecting its statistical relevance.

Cultural and Symbolic Meaning: The Universal Significance of the Number

The cultural importance of 7 is widespread:

Seven Days of the Week: Almost all calendar systems divide time into seven-day weeks.

Seven Colors of the Rainbow:

Representing diversity and unity in nature.

Seven Continents and Seven Seas:

A geographical classification of Earth that emphasizes global completeness.

Religious Symbolism:

In Hinduism, there are seven chakras; in Christianity, seven deadly sins; in Islam, seven heavens.

The Seven Wonders of the World:

The Seven Wonders of the World epitomize human creativity and engineering excellence. The classical wonders include monuments such as the Great Pyramid of Giza and the Hanging Gardens of Babylon, while the modern list features structures like the Taj Mahal and the Great Wall of China. The use of the number 7 here symbolizes not just quantity but the idea of completeness, as these wonders collectively represent the pinnacle of human achievement across cultures and time.

The Seven Steps in Marriage (Saat Phere):

In Hindu tradition, marriage ceremonies include the ritual of saat phere, or seven steps taken by the couple around a sacred fire. Each step symbolizes a vow: nourishment, strength, prosperity, happiness, progeny, health, and lifelong companionship. This ritual highlights the sacredness of 7 as a number signifying completeness and balance in human relationships, binding two individuals in a spiritual and social union.

Psychological and Philosophical Aspects:

In cognitive psychology, George A. Miller's influential paper "The Magical Number Seven, Plus or Minus Two" (1956) shows that human working memory typically holds about seven items. Philosophically, the recurrence of 7 in various domains suggests a human tendency to associate it with perfection, wholeness, and balance.

Conclusion:

The number 7 transcends its identity as a mere integer. Its mathematical elegance, cultural symbolism, historical significance through the Seven Wonders, and spiritual importance in rituals such as the seven steps of marriage make it universally respected. Across disciplines, the number 7 remains a bridge between the scientific, the cultural, and the spiritual—an enduring emblem of completeness and harmony.

K. Yaswanthi

II year

India's first woman spy of the Indian National Army (INA)

Neera Arya: India's First Woman Spy and Her Untold Struggles

When we speak of India's freedom struggle, the names of leaders like Mahatma Gandhi, Subhas Chandra Bose, and Bhagat Singh often come first to mind. Yet, hidden in the pages of history lies the extraordinary story of Neera Arya, remembered as India's first female spy in the Indian National Army (INA). Her life was marked by courage, sacrifice, and unshakable patriotism, but also by pain, betrayal, and neglect.

Born on 5 March 1902 in Khekra Nagar, Baghpat (Uttar Pradesh), Neera Arya grew up in a wealthy Arya Samaj family. Her father, Seth Chhajjumal, was a respected businessman, and education was a priority in her home. But Neera's heart always leaned toward the service of her motherland. Influenced by the rising nationalist spirit, she chose a path that would separate her from comfort and draw her into danger. Neera's fate took a historic turn when she joined Netaji Subhas Chandra Bose's Azad Hind Fauj as part of the Rani of Jhansi Regiment, the all-women's combat unit. Soon, her intelligence, fearlessness, and loyalty to the cause caught the attention of Netaji himself. She became one of his trusted associates and was secretly recruited as a spy for the INA.

Her personal life, however, became her greatest trial. Neera was married to Srikant Jai Ranjan Das, a British Army officer and CID inspector. Their marriage was strained from the beginning, as Das's loyalty lay with the British, while Neera's heart belonged to the freedom struggle. The conflict reached a breaking point when Das attempted to betray and even kill Netaji Bose. At that moment, Neera faced a heartbreak decision: loyalty to her husband or duty to her country. Choosing patriotism above personal ties, she killed her husband to save Netaji's life. This act earned her the title "Neera-Nagini", symbolizing her fearless spirit.

But her struggles did not end there. Soon captured by the British, Neera was imprisoned in the infamous Cellular Jail (Kala Pani). She endured brutal torture, including inhumane mutilation, yet she never betrayed Netaji or the INA. Her silence in the face of unimaginable suffering became a

symbol of resilience and sacrifice. Despite her heroism, Neera Arya's post-independence life was filled with neglect. Unlike many freedom fighters who received recognition, pensions, or political posts, Neera chose a life of simplicity and dignity. She survived by selling flowers near Hyderabad's Charminar, where locals fondly called her "Pedamma" (elder mother).

She never sought fame or wealth, living quietly until her death on 26 July 1998.

Today, Neera Arya's name is slowly finding its rightful place in India's collective memory. A biopic has been announced to honor her, and streets and awards are being named after her. But her life remains more than just a story from the past—it is a lesson in unwavering loyalty, sacrifice, and courage.

Neera Arya's journey reminds us that freedom was not won by leaders alone but also by countless unsung heroes and heroines who gave everything for the dream of an independent India. Her struggles and strength prove that even in silence and obscurity, true heroes never fade.

**B. Geethika
II year**

Artificial Intelligence: A Silent Danger Around Us

"Machines should never become masters; they were made to be our servants."

"If humans sleep, AI will rule."

Every day, we use Artificial Intelligence (AI) without even noticing it. When we unlock our phones with face recognition, when YouTube suggests videos, AI is quietly at work. At first, it feels helpful. But have we ever stopped to ask: "What will this do to us in the long run?"

JOBS AT RISK

Think about this: one day, a driver may lose his job because of self-driving cars. A shop worker may be replaced by a machine that scans and packs faster. Even educated people bank clerks, teachers, writers are seeing AI do their work better and cheaper. If this continues, where will humans find jobs?

LOSING OUR THINKING POWER

Remember the last time you struggled to find an answer on your own? Probably not, because AI gave it instantly. Slowly, we are depending so much on machines that our ability to think, imagine, and solve problems is dying.

Privacy and Control

AI is learning everything about us what we eat, what we buy, what we like, even what we feel. This information can be misused to manipulate our choices, our votes, and even our beliefs. In the wrong hands, AI becomes not just a tool, but a weapon against humanity.

Conclusion

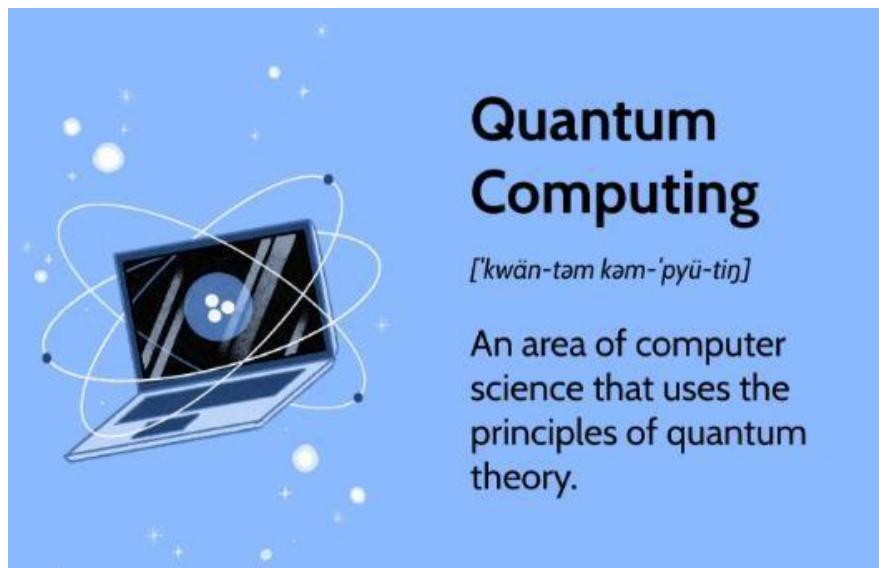
The truth is simple: AI will never stop growing. But we must stop and think do we want a future where machines replace our jobs, our skills, and even our identity? The answer lies in our hands today. Be aware, be alert, and remember technology should serve humans, not the other way around.

"If we lose control over AI today, tomorrow we may lose control over our own lives."

K. Sharmila
C.Vennela
II year

Quantum Computing

“David Deutsch” is considered the father of quantum computing for developing the first theoretical model of a universal quantum computer in 1985, which established the fundamental principles and laid the groundwork for the field. While Deutsch provided the foundational theoretical framework, other key figures like Richard Feynman offered early insights into the computational power of quantum systems, and Peter Shor later discovered a significant quantum algorithm in 1994 that sparked substantial interest in the field.



Quantum computing uses principles of quantum mechanics, like superposition and entanglement, to solve complex problems much faster than classical computers by using qubits (quantum bits) that can represent multiple states simultaneously, unlike the simple 0 or 1 of a classical bit. This allows quantum computers to perform vast numbers of calculations at once for specific applications in areas like drug discovery, materials science, financial modelling. While still under development, they are envisioned as specialized tools, not replacements for everyday computers.

Here are the core principles:

- **Superposition:**

Unlike classical bits (0 or 1), a qubit can be in a combination of both states simultaneously. This allows a quantum computer to explore numerous possibilities at once, increasing its processing power.

- **Entanglement:**

This principle links qubit so that their states are correlated, even when physically separated. The state of one entangled qubit instantly influences the state of the other, enabling coordinated calculations.

- **Interference:**

Quantum states can interfere with each other, much like waves. Quantum algorithms use this property to amplify the correct outcomes of a computation and cancel out incorrect ones, leading to more accurate results.

- **Decoherence:**

Though often listed with the other principles, decoherence is more accurately a phenomenon that a quantum computer must combat. It is the process where a quantum system loses its quantum properties due to interaction with its environment, which is crucial to prevent.

- **Quantum Measurement:**

To get a result, a quantum computer must perform a measurement on the qubits. This measurement causes the quantum state to "collapse" into a definitive value (0 or 1), which is how the final answer is extracted.



How it Works:

❖ Qubits:

Classical computers use bits that are either a 0 or a 1. Quantum computers use qubits, which can be 0, 1, or a combination of both at the same time, a property called superposition.

❖ Entanglement:

Qubits can also be entangled, meaning their fates are linked. An operation on one entangled qubit can instantly influence the state of another, no matter the distance between them.

❖ Quantum Algorithms:

Quantum computers use algorithms that exploit superposition and entanglement to explore many possible solutions simultaneously. This allows them to process information in a massively parallel way that is not possible for classical computers.

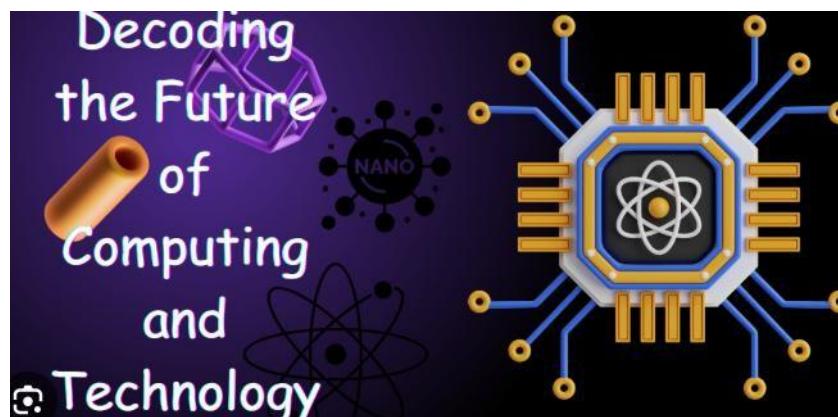
❖ Interference:

Quantum algorithms also utilize quantum interference to amplify correct outcomes and cancel out incorrect ones, leading to the desired solution.

Key Principles

❖ **Superposition:** The ability of a qubit to be in multiple states at once.

❖ **Entanglement:** A quantum phenomenon where qubits become interconnected and influence each other, regardless of distance.



Here are the main types of quantum computers:

- Superconducting Quantum Computers
- Photonic Quantum Computers
- Trapped Ion Quantum Computers
- Neutral Atom Quantum Computers
- Quantum Dot/Silicon Spin Quantum Computers
- Topological Quantum Computers
- Adiabatic Quantum Computers

Applications

Quantum computing has the potential to revolutionize various fields:

- ❖ **Medicine & Materials Science:** Discovering new drugs and designing advanced materials.
- ❖ **Artificial Intelligence:** Solving complex optimization problems for AI and machine learning.
- ❖ **Financial Services:** Improving risk analysis and financial modeling.
- ❖ **Cryptography:** Creating new forms of encryption and potentially breaking current encryption methods.

Quantum computers are computers that consist of quantum bits, or “qubits,” that play a similar role to the bits in today's digital computers. The laws of quantum mechanics allow qubits to encode exponentially more information than bits.

Y.S. Prasanna

II year

Social Media Algorithms – Shaping Opinions or Controlling Minds

Introduction:

Social media has become an integral part of modern life, influencing how people communicate, access information, and form opinions. Behind the scenes, algorithms determine what content users see, when they see it, and how often it appears. This raises a critical question: are social media algorithms shaping opinions or controlling minds?

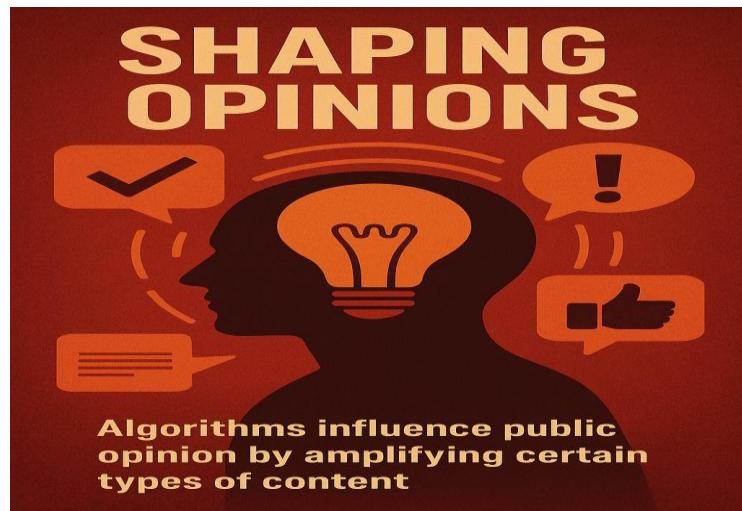
What are Social Media Algorithms?

Social media algorithms are sets of rules and machine learning models that personalize the content shown to users. They decide what posts, videos, or advertisements appear on a user's feed based on engagement, preferences, and past behavior. While they make browsing more relevant, they also create 'filter bubbles' and 'echo chambers'.



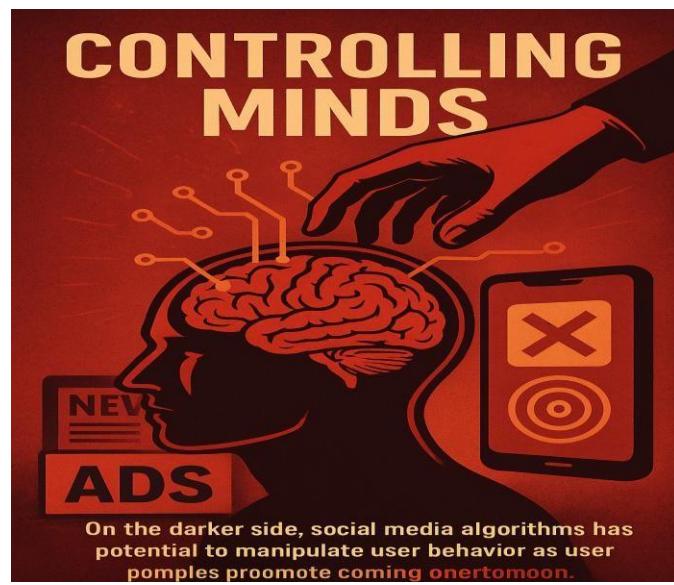
Shaping Opinions

Algorithms influence public opinion by amplifying certain types of content. For example, political campaigns, social movements, and trending topics gain traction when algorithms boost their visibility. Users are more likely to believe and share information that aligns with their existing beliefs, reinforcing opinions.



Controlling Minds

On the darker side, algorithms can manipulate user behavior by selectively promoting misinformation, sensational news, or targeted ads. This can control not only what people think about but also how they think. Cases like election interference and fake news campaigns highlight the potential dangers of algorithm-driven mind control



Positive and Negative Impacts

Positive Impacts:

- Personalized content improves user experience.
- Helps businesses and creators reach their target audience.
- Supports awareness campaigns and social causes.

Negative Impacts:

- Creates echo chambers, limiting diverse viewpoints.
- Promotes addiction and excessive screen time.
- Spreads misinformation and polarization.



Way Forward

To balance personalization and fairness, platforms should increase transparency in how algorithms work. Users must have more control over their feeds, with options to prioritize diverse sources of information. Digital literacy programs are also essential to help people critically evaluate the content they consume.



Conclusion

Social media algorithms are powerful tools that can shape opinions and, in extreme cases, control minds. The responsibility lies with both platforms and users to ensure that algorithms serve society positively rather than manipulate it.

G. Amrutha
II year

How I Enjoyed the Trip to Wayanad

Introduction:



Travelling has always been a source of joy and learning for me. It gives us an escape from our busy routines and provides opportunities to explore new experiences, cultures, and landscapes. Among all the places I have visited, my trip to Wayanad, a beautiful district in Kerala, holds a very special place in my heart. Nestled in the Western Ghats, Wayanad is blessed with a unique blend of natural beauty, cultural richness, and historical significance. My visit to this enchanting destination was not just a holiday but an experience full of discovery and delight.

The Journey to Wayanad:



The excitement began with the journey itself. As our vehicle moved along the winding mountain roads, the scenery gradually transformed into breathtaking landscapes. The lush greenery, mist-covered valleys, and endless stretches of tea, coffee, and spice plantations created a refreshing atmosphere. Every bend in the road brought forth a new picture-perfect view—dense forests,

streams flowing beside the road, and birds flying freely in the sky. The fresh mountain breeze was invigorating, and I felt as though I was entering a completely different world, far away from the chaos of city life.

Edakkal Caves:



One of the most remarkable experiences of my trip was visiting the Edakkal Caves, which are renowned for their prehistoric rock engravings. To reach the caves, I had to undertake a steep climb along rocky paths and narrow trails. Though the climb was physically challenging, the breathtaking views of the surrounding valleys and hills encouraged me to keep going. Inside the caves, I was fascinated by the rock carvings believed to be thousands of years old. These carvings included human figures, animals, and symbols, offering a glimpse into the lives of our ancestors. It felt as if history had come alive before my eyes.

The Magic of Waterfalls:



Another unforgettable highlight of my journey was witnessing the majestic Soochipara and Meenmutty waterfalls. As I approached Soochipara Falls, the sound of rushing water grew louder, and soon I was greeted by the sight of water cascading down from a great height into a pool below. The mist rising from the falls created a magical atmosphere, and standing close to it, I felt refreshed and energized. At Meenmutty Falls, the experience was equally enchanting. Surrounded by dense forests and rugged terrain, the waterfall stood as a reminder of nature's raw and untamed beauty.

The Wildlife Experience:

One of the most thrilling parts of my trip was the safari through the Wayanad Wildlife Sanctuary. As the jeep moved through the forest, I felt a rush of excitement and curiosity. The sanctuary is home to a wide variety of animals and birds, and I was fortunate to spot elephants majestically walking through the woods, groups of deer grazing peacefully, and vibrant species of birds chirping in the trees. This close encounter with wildlife was an eye-opening experience. Watching animals in their natural habitat filled me with awe and respect for the wonders of nature.

Evenings in Wayanad:



After days filled with exploration and adventure, evenings in Wayanad carried a charm of their own. I stayed at a traditional homestay surrounded by greenery and plantations. The atmosphere was calm and soothing, and the hosts welcomed me with warmth and kindness. Dinner was a delightful experience, as I was served traditional Kerala dishes such as appam, stew, puttu, and kadala curry. The food was simple yet delicious, and the unique flavors left a lasting impression. After dinner, I would sit outside under the starlit sky, listening to the soothing sounds of nature. Those peaceful evenings in Wayanad gave me a sense of inner calm and joy that I will never forget.

Lessons and Memories:

The trip to Wayanad was not only about sightseeing but also about learning valuable lessons. Exploring historical sites like Edakkal Caves taught me about the creativity and intelligence of our ancestors. Visiting the waterfalls and forests made me appreciate the beauty and power of nature. Most importantly, the journey reminded me of the need to protect and preserve our natural resources for future generations.

Conclusion:

In conclusion, my trip to Wayanad was an experience I will cherish forever. It was a journey that combined natural beauty, adventure, history, and culture in perfect harmony. From trekking to waterfalls and caves, to exploring wildlife, to enjoying peaceful evenings in the hills, every moment was filled with joy and wonder. The trip taught me to value nature, respect history, and appreciate the simple pleasures of life.

V. Chaitanya Kumar
III Year

Why we are celebrating an Engineer's Day

Engineer's Day is celebrated to honor the contributions and achievements of engineers in various fields, including technology, infrastructure, healthcare, and more. The day is observed on different dates in various countries, often coinciding with the birth or death anniversary of a notable engineer. In India, Engineer's Day is celebrated on September 15, commemorating the birth anniversary of **Sir Mokshagundam Visvesvaraya**, a legendary engineer and statesman who played a crucial role in the country's infrastructure development. By celebrating Engineer's Day, we pay tribute to engineering pioneers, promote engineering excellence, and foster innovation and progress.



Engineer's Day is a tribute to the brilliant minds that shape our world, solving complex problems and creating innovative solutions that transform lives. It's a celebration of the engineering spirit, which drives progress, improves infrastructure, and enhances our daily experiences. By honoring engineers and their achievements, we recognize the crucial role they play in building a better future for humanity. Whether it's designing sustainable systems, developing cutting-edge technology, or finding creative solutions to real-world challenges, engineers are the unsung heroes who make a lasting impact on society. Engineers are the architects of innovation, crafting solutions that bridge the gap between imagination and reality. Their work touches every aspect of our lives, from the smart phones in our pockets to the bridges that connect our communities. Engineer's Day is a moment to appreciate the dedication, expertise, and creativity that engineers bring to their work, shaping the world we live in and paving the way for brighter, more advanced future. It's a day to celebrate the problem-solvers, the inventors, and the visionaries who turn ideas into reality.

The Legacy of Sir M. Visvesvaraya:

Sir M. Visvesvaraya was a renowned engineer, statesman, and visionary who made significant contributions to India's infrastructure development. Some of his notable achievements include:

1. Designing the Krishna Raja Sagara Dam:

One of the largest dams in India, which transformed the agricultural landscape of Karnataka.

2. Flood Protection System for Hyderabad:

A pioneering project that protected the city from frequent floods and ensured the safety of its residents.

3. Automatic Sluice Gates:

An innovative design that improved the efficiency of water management systems.

Importance of Engineer's Day

Recognizing Engineering Achievements:

The day acknowledges the significant impact of engineers on society, highlighting their innovations, inventions, and solutions that improve lives.

Inspiring Future Generations:

Engineer's Day encourages young people to pursue careers in engineering and technology, promoting STEM education and innovation.

Celebrating Problem-Solving Skills:

Engineers are problem-solvers who develop innovative solutions to real-world challenges. The day celebrates their creativity, critical thinking, and technical expertise.

Sir M. Visvesvaraya's achievements:

- Designed and implemented the Krishna Raja Sagara dam in Karnataka
- Developed the flood control system for the city of Hyderabad
- Contributed to the establishment of several educational institutions
- Awarded India's highest civilian honor, the Bharat Ratna, in 1955

Why Engineers Matter

Engineers are problem-solvers who use their skills and knowledge to develop innovative solutions to real-world problems. They work in various fields, including:

- 1. Civil Engineering:** Designing and building infrastructure, such as roads, bridges, and buildings.
- 2. Mechanical Engineering:** Developing machines and mechanical systems that power industries and improve efficiency.
- 3. Electrical Engineering:** Designing and implementing electrical systems that power homes, industries, and transportation.
- 4. Computer Science and IT:** Developing software, apps, and systems that transform communication, healthcare, and education.

Conclusion:

Celebrating Engineer's Day is a tribute to the engineering community's contributions to society. It recognizes the hard work, innovation, and dedication of engineers who shape the nation's development. By honoring Sir M. Visvesvaraya's legacy, we inspire future generations of engineers to drive progress and innovation in India.

AI IN HEALTHCARE

Artificial Intelligence (AI) in healthcare is one of the most revolutionary applications of technology in the modern world. It combines the power of computer science, big data analytics, and advanced algorithms to assist medical professionals in providing faster, safer, and more accurate care. AI systems are capable of processing enormous amounts of medical data ranging from patient records and laboratory results to imaging scans and genetic information in ways that humans alone cannot achieve.



The healthcare industry has always faced challenges such as increasing patient populations, shortage of skilled doctors and nurses, rising medical costs, and delays in diagnosis. AI provides effective solutions to these challenges by improving efficiency, reducing errors, and personalizing patient care. For example, AI can analyze a CT scan in seconds, suggest possible conditions, and guide doctors toward appropriate treatment plans. Beyond hospitals, AI is being integrated into wearable devices, mobile health apps, and telemedicine platforms, allowing patients to monitor their own health in real-time and seek early intervention when problems arise. In short, AI is not just a futuristic idea; it is already transforming the way healthcare operates. From supporting doctors in complex surgeries to making healthcare more accessible in rural areas, AI has the potential to reshape global health systems and save millions of lives.

APPLICATIONS OF AI IN HEALTHCARE

1. Medical Imaging and Diagnostics:

AI-powered tools are transforming the field of medical imaging by analyzing X-rays, CT scans, and MRIs with remarkable precision. For instance, AI algorithms can detect early signs of breast cancer, lung infections, or brain tumors that may be difficult for the human eye to identify. This helps doctors in making faster and more accurate diagnoses, ultimately improving patient outcomes.



2. Predictive Analytics and Preventive Care:

By studying large volumes of patient health records, AI can predict potential risks of diseases like diabetes, heart attack, or stroke. Such predictive models enable preventive measures, allowing individuals to adopt healthier lifestyles and doctors to initiate early treatments.



3. Drug Discovery and Development:

Traditionally, discovering a new drug takes years of research and billions of dollars. AI shortens

this process by simulating how different chemical compounds may interact with the human body. This has already accelerated the discovery of treatments for rare diseases and contributed to vaccine development during global health crises like COVID-19.

4. Virtual Health Assistants and Chatbots:

AI-powered chatbots are now being used by hospitals and clinics to provide 24/7 assistance. They help patients book appointments, remind them to take medications, and even answer basic medical queries. Virtual assistants also provide mental health support by offering stress management techniques and therapeutic conversations.



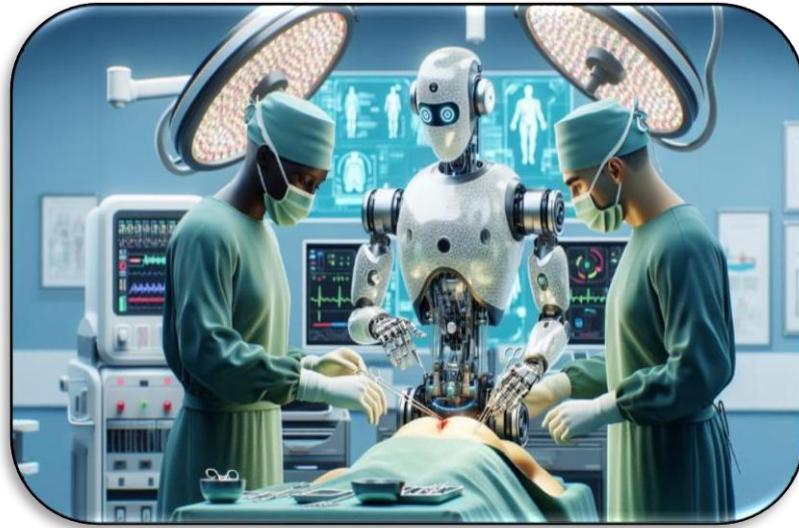
Personalized Medicine:

Each patient is unique, and AI makes it possible to customize treatment plans based on an individual's genetic profile, lifestyle, and medical history. For example, AI can suggest tailored cancer treatments by analyzing how a patient's specific genetic mutation reacts to certain drugs. **FUTURE OF AI IN HEALTHCARE**

The future of AI in healthcare holds tremendous promise and is expected to bring groundbreaking changes to the way medical services are delivered worldwide. As AI technologies mature, they will not only complement healthcare professionals but also reshape the entire structure of hospitals, clinics, and home-based care systems.

- AI-Assisted Surgeries and Robotics:**

Robotic systems powered by AI are expected to perform complex surgical procedures with even greater precision than today. These systems will minimize human error, shorten recovery times, and reduce post-surgical complications. Surgeons will be able to control these procedures remotely, making advanced healthcare accessible in regions that lack specialized doctors.



- **Remote Healthcare and Telemedicine Expansion:**

AI will play a central role in bringing healthcare to rural and underserved areas through telemedicine. AI-driven diagnostic tools can guide local healthcare workers in treating patients, while virtual consultations with AI assistance can connect patients to specialists worldwide.

AI-Powered Wearable Devices:

Wearables such as smartwatches and biosensors will become more advanced, monitoring a wide range of health indicators like blood sugar levels, heart rate variability, sleep quality, and even stress patterns. These devices, integrated with AI, will provide continuous real-time monitoring and alert doctors or patients when abnormal readings are detected, potentially saving lives through early intervention. While machines handle data-heavy tasks, healthcare professionals will focus more on empathy, communication, and patient relationships.

CONCLUSION

AI in healthcare represents a transformative shift toward data-driven, patient-centered, medical services. From diagnosis to treatment, AI has the potential to make healthcare faster, more precise, and more accessible. Although challenges such as data privacy, algorithmic bias, and the need for transparency remain, the benefits are undeniable. If implemented responsibly, AI will not only support doctors but also empower patients, improve healthcare outcomes, and reduce global health disparities.

B. Sai Priya
II year

Space Tourism: The Dawn of a New Frontier

Introduction

Space has always fascinated humankind. From the earliest days of stargazing to the historic Apollo moon landing, venturing beyond Earth has symbolized innovation, courage, and curiosity. For decades, only highly trained astronauts and scientists had access to this domain. However, with advancements in aerospace engineering and the involvement of private companies such as **SpaceX, Blue Origin, and Virgin Galactic**, the concept of **space tourism** is rapidly becoming a reality. Space tourism refers to the practice of traveling into space for recreational, leisure, or adventure purposes. Unlike traditional government-funded space missions, these commercial ventures aim to make space accessible to private citizens, albeit at high costs initially.

Historical Background

The idea of space tourism is not entirely new. The first space tourist, **Dennis Tito**, a wealthy American businessman, visited the International Space Station (ISS) in **2001** after paying millions of dollars for the trip through Russia's space program. With the rise of private spaceflight companies in the 21st century, the vision of regular, affordable space travel has moved closer to reality. SpaceX's reusable rockets, Virgin Galactic's suborbital spacecraft, and Blue Origin's **New Shepard** program are pioneering efforts to make commercial space travel feasible and sustainable.

Types of Space Tourism

1. Suborbital Flights

- Passengers are taken above the **Kármán line (100 km altitude)** for a few minutes.
- Provides weightlessness and a stunning view of Earth's curvature.
- Companies like Virgin Galactic and Blue Origin are actively offering these experiences.

2. Orbital Flights

- Travelers orbit Earth at much higher altitudes, similar to astronauts aboard the ISS.
- These missions last from several hours to multiple days.
- SpaceX is developing systems like **Crew Dragon** to enable private orbital missions.

Technology Driving Space Tourism

- **Reusable Rockets:** The development of reusable launch vehicles by SpaceX and Blue Origin has dramatically lowered launch costs.

- **Spacecraft Design:** Passenger modules are designed for safety, comfort, and maximum visibility. Large windows provide breathtaking views of space.
- **Training Programs:** Tourists undergo pre-flight training to handle microgravity, safety procedures, and the psychological challenges of spaceflight.
- **Life-Support Systems:** Advanced systems ensure oxygen supply, temperature regulation, and radiation shielding.

Benefits of Space Tourism

1. Advancement in Aerospace Technology

- Commercial space travel accelerates innovation in rocket science, spacecraft engineering, and life-support systems.

2. Economic Opportunities

- The space tourism industry is projected to become a **multi-billion-dollar sector**, creating jobs and new business models.

3. Scientific Contribution

- More frequent launches support microgravity experiments, climate studies, and technology testing in space environments.

4. Inspiration and Global Interest

- Space tourism inspires future generations, promotes STEM education, and renews humanity's interest in space exploration.

Future Outlook

The future of space tourism looks promising but gradual. In the next decade, we can expect:

- Regular suborbital flights with increasing passenger capacity.
- Orbital hotels and research stations, with companies like **Axiom Space** already planning private space stations.

G. Mahendranath Reddy

III Year

5G Expansion: Driving the Next Technological Revolution

Introduction

The fifth generation of mobile networks, widely known as **5G**, represents a groundbreaking shift in communication technology. Unlike its predecessors (2G, 3G, and 4G), which primarily improved speed and connectivity for mobile users, 5G is designed to **support an interconnected digital ecosystem**.

It provides ultra-fast data transfer speeds, near-zero latency, wider coverage, and the ability to connect billions of devices simultaneously. This advancement is not merely an upgrade but a **revolutionary enabler** of next-generation innovations like the Internet of Things (IoT), autonomous vehicles, smart cities, and immersive technologies such as augmented and virtual reality (AR/VR).

Core Features of 5G

1. High Speed

- 5G offers data speeds up to **10 Gbps**, nearly 100 times faster than 4G. This allows users to download high-definition movies in seconds and businesses to transfer massive data sets seamlessly.

2. Ultra-Low Latency

- Latency refers to the time taken for data to travel from source to destination. 5G reduces latency to **as low as 1 millisecond**, enabling real-time communication critical for applications like remote surgery, robotics, and autonomous driving.

3. Massive Connectivity

- 5G can connect **up to 1 million devices per square kilometer**, supporting dense environments such as sports stadiums, smart factories, and highly populated urban centers.

4. Energy Efficiency and Reliability

- Designed to consume less power per bit of data, 5G is more energy-efficient and ensures highly reliable communication, even in challenging network environments.

Applications and Impact of 5G

1. Internet of Things (IoT)

- 5G will act as the backbone for IoT ecosystems, enabling smart homes, connected appliances, wearable devices, and industrial IoT systems. This connectivity allows real-time monitoring, predictive maintenance, and efficient resource management.

2. Healthcare

- In medicine, 5G supports telemedicine, remote patient monitoring, and even remote robotic surgeries where split-second precision is essential. This makes advanced healthcare accessible even in rural and underserved areas.

3. Autonomous Vehicles

- Self-driving cars rely on instant communication with each other and with traffic systems. With 5G, vehicles can exchange information in real time, reducing accidents and optimizing traffic flow.

4. Augmented Reality (AR) and Virtual Reality (VR)

- 5G enables smoother, more immersive AR/VR experiences by minimizing lag. **Benefits**

of 5G Expansion

- **Economic Growth:** Studies suggest 5G could contribute **trillions of dollars** to global GDP by enabling new industries and services.
- **Innovation Accelerator:** By providing the required infrastructure, 5G will drive breakthroughs in AI, machine learning, robotics, and automation.

Future Outlook

As 5G deployment continues globally, it is expected to **transform how we live, work, and interact**. Over the next decade, we will likely see:

- Mainstream adoption of **autonomous vehicles**.
- Widespread **smart city infrastructure** in metropolitan regions.
- Growth of **immersive digital experiences** through AR, VR, and mixed reality.

Ultimately, 5G is not just a network upgrade but a **foundation for the digital future**. Its expansion will support the rapid growth of emerging technologies, accelerate innovation

Shaik Mahaboob Ali

III Year

Telemedicine: Transforming Modern Healthcare

Introduction

Telemedicine refers to the practice of delivering healthcare services remotely through digital communication technologies such as video conferencing, mobile apps, and online platforms. Instead of visiting a clinic physically, patients can consult with healthcare providers from the comfort of their homes. This model of care has become a **revolutionary development in healthcare delivery**, especially in situations where in-person consultations are not possible or practical.

During the **COVID-19 pandemic**, telemedicine emerged as a lifeline, ensuring continuity of care while minimizing the risk of infection. Today, it is evolving into a mainstream practice, offering services that go beyond basic consultations, including diagnostics, remote monitoring, and even mental health therapy.

Key Features of Telemedicine

1. Remote Consultations

- Patients can schedule and attend virtual appointments using smartphones, tablets, or computers.

2. Remote Patient Monitoring (RPM)

- Devices like smartwatches, glucose monitors, and blood pressure cuffs allow doctors to monitor patients' health data in real time.

3. E-Prescriptions

- Doctors can send prescriptions electronically, allowing patients to order medicines online or pick them up from local pharmacies.

Applications of Telemedicine

1. Primary Healthcare

- General consultations for common illnesses, routine check-ups, and chronic disease management.

2. Specialized Care

- Access to dermatologists, cardiologists, psychiatrists, and other specialists without long travel times.

3. Emergency Support

- Patients can quickly consult doctors for initial guidance before reaching a hospital.

Benefits of Telemedicine

1. Convenience and Accessibility

- Patients save time and money by avoiding travel and waiting rooms.

2. Continuity of Care

- Especially useful for elderly patients, people with disabilities, and those living in remote areas.

3. Reduced Healthcare Costs

- Lower hospital admissions and fewer in-person visits reduce overall healthcare expenses.

4. Improved Public Health

- During pandemics or outbreaks, telemedicine helps minimize physical contact, reducing disease transmission.

Future of Telemedicine

The future of telemedicine looks promising with rapid advancements in technology and healthcare integration. Some trends include:

- **Artificial Intelligence (AI):** AI-based tools for diagnostics, triage, and personalized treatment recommendations.
- **Wearable Technology:** Continuous monitoring through smart devices for proactive healthcare.
- **Virtual Reality (VR) and Augmented Reality (AR):** Potential use in remote surgeries, medical training, and patient education.

Conclusion

Telemedicine has moved from being an optional service to becoming a **central pillar of modern healthcare**. It has proven its value in times of crisis and continues to evolve into a reliable and efficient mode of care delivery. While challenges like cost, regulation, and privacy remain, ongoing innovations promise to overcome these hurdles. In the coming years, telemedicine will play a critical role in building a more accessible, affordable, and patient-centered healthcare system.

G. Hruday

III Year

Neuromorphic Computing: Mimicking the Human Brain for Smarter Machines

Introduction

Neuromorphic computing is an **emerging technology trend** that seeks to revolutionize how computers process information by mimicking the architecture and functioning of the human brain. Unlike traditional computers, which follow the **Von Neumann architecture** (separating memory and processing), neuromorphic systems integrate processing and memory, similar to the way neurons and synapses work in the brain.

This design allows machines to perform tasks such as **pattern recognition, sensory data processing, and real-time learning** with remarkable efficiency. By simulating the brain's parallel and distributed processing, neuromorphic chips offer substantial improvements in both **computational power** and **energy efficiency**, opening doors to a new generation of intelligent computing systems.

How Neuromorphic Computing Works

1. Brain-Inspired Architecture

- Neuromorphic chips are built with artificial “neurons” and “synapses” that replicate how biological neurons communicate through electrical spikes.
- Instead of processing sequentially, these systems work in a **massively parallel fashion**, similar to the brain's 86 billion neurons.

2. Event-Driven Processing

- Traditional processors consume energy continuously, while neuromorphic processors work in an **event-driven manner**—they remain idle until they receive input signals, reducing power consumption.

3. Learning and Adaptation

- Neuromorphic systems support real-time learning through **spike-timing-dependent plasticity (STDP)**, where the strength of connections adapts based on signal timing, imitating how humans learn from experience.

Key Features of Neuromorphic Computing

- **Energy Efficiency:** Can perform computations at a fraction of the energy used by conventional processors.

- **Real-Time Processing:** Suitable for tasks requiring immediate response, such as robotics and autonomous vehicles.
- **Scalability:** Designed to handle large volumes of unstructured sensory data.
- **Adaptability:** Capable of learning and evolving without explicit reprogramming.

Applications of Neuromorphic Computing

1. Artificial Intelligence (AI) and Machine Learning

- Neuromorphic chips can enhance AI by enabling real-time learning and decision-making, making systems smarter and more autonomous.

2. Pattern Recognition

- Useful in facial recognition, speech processing, and handwriting analysis due to its ability to process complex patterns efficiently.

3. Robotics

- Robots equipped with neuromorphic processors can react faster to environmental stimuli, improving navigation, object detection, and interaction with humans.

4. Healthcare

- Neuromorphic systems can analyze medical imaging, detect anomalies, and even power **neuroprosthetics** that interact with the nervous system.

Benefits of Neuromorphic Computing

- **Drastic Reduction in Power Consumption** compared to conventional supercomputers.
- **Closer Human-Machine Interaction** by processing sensory data in brain-like ways.
- **Enhanced Cognitive Capabilities** enabling more natural and adaptive AI systems.

Conclusion

Neuromorphic computing represents a paradigm shift from traditional computing models. By drawing inspiration from the human brain, it promises breakthroughs in **energy efficiency, adaptability, and cognitive performance**. As it matures, neuromorphic computing will become a **cornerstone of future innovations**, shaping industries ranging from healthcare and robotics to AI and IoT.

K. Jayaram
III Year

The Power of youth

“Every great change in history began with a young person.”

A country is like a blank sheet of paper, and youth is the pen. On that paper, the destiny of the nation is written with this powerful pen called **youth**.

Youth is considered the greatest asset of any country, for their intelligence, hard work, and determination create a path towards success and prosperity. While every citizen has certain responsibilities toward their nation, it is the youth who carry the real power to shape the future. They are the building blocks of society and the driving force of progress.

Who are the Youth?

The term youth generally refers to people between the ages of 15 and 29. In India, nearly 49% of the population falls within this age group. This makes youth not just important, but essential for our society's growth. Other age groups — children, teenagers, the elderly — often look up to the youth, relying on their energy, innovation, and leadership. With their creativity and determination, youth have the power to renew society and drive positive change.



1. Youth in Politics

The role of youth is crucial in politics and governance. They are not just numbers; they are deciders. The emotions, aspirations, and voices of youth can determine the success of leaders. As the saying goes, **“The youth of today are the leaders of tomorrow.”**

It is vital for youth to step into politics — not because politicians are born leaders, but because they are made through dedication and service. *“Politics is about understanding where to sacrifice and where to gain”*. It is not only about money and votes; it is about vision, hard work, and honesty. By entering politics, youth bring fresh ideas, new policies, and modern perspectives. They represent the real aspirations of society and can fight corruption, inequality, and stagnation. If the future of our nation is to change, educated youth must lead with courage and wisdom.

As Mahatma Gandhi reminded us: **“Do not wait for leaders; do it alone, person to person.”**

2. Youth in Entrepreneurship and Economy

Youth also play a transformative role in the economy. Their entrepreneurial spirit has the power to create jobs, innovation, and stability. Startups in areas like renewable energy, fintech, and artificial intelligence are often driven by young entrepreneurs who dare to think differently.

Unlike older generations, youth are risk-takers. They are willing to fail, learn, and rise again. This mindset leads to progress and inspires others. By creating new businesses and industries, young entrepreneurs not only help themselves but also reduce unemployment and strengthen the economy. In short, whether in technology, sports, culture, or business, the active participation of youth is essential for a country's progress.

Conclusion

Youth are not just the future; they are the present power of a nation. With their energy, vision, and courage, they can transform challenges into opportunities. But with great power comes great responsibility — the youth must channel their strength wisely, guided by values and integrity. A nation that empowers its youth will always move forward. After all, it is in their hands that the pen of destiny rests, ready to write a brighter tomorrow.

GUTTI MAHAMMAD
III Year

Ravindra Jadeja: The Rock of Indian Cricket

Ravindra Jadeja, fondly known as “Sir Jadeja”, is one of the finest all-rounders in modern cricket. Born on 6 December 1988 in Navagam, Gujarat, Jadeja has built a reputation as a dependable left-handed batter, a crafty left-arm spinner, and an outstanding fielder. His journey from humble beginnings to becoming a key figure in the Indian cricket team is both inspiring and remarkable.



Early Life and Career:

Jadeja's passion for cricket began at a very young age. Coming from a modest background, he had to overcome many struggles to make a name for himself. His first big break came when he represented India in the 2006 Under-19 World Cup, where his all-round abilities were on display. He was also part of the 2008 Under-19 World Cup-winning squad, captained by Virat Kohli. His performances in domestic cricket for Saurashtra caught the selectors' eyes, and in 2009, he made his international debut for India in an ODI against Sri Lanka.

International Career:

Over the years, Jadeja has established himself as a match-winner in all formats:

ODIs & T20Is: Known for his ability to finish games with the bat and bowl economical spells, Jadeja has been an asset in limited-overs cricket. His sharp fielding adds an extra edge, often changing the course of matches with run-outs or stunning catches.

Test Cricket: In the longer format, Jadeja has been India's backbone. With his accurate spin bowling and resilience with the bat, he has played several match-winning roles, especially in Indian conditions. He has also achieved the rare feat of scoring a Test century while batting lower down the order.

IPL Journey:

Ravindra Jadeja has also been a star in the Indian Premier League (IPL). Initially part of the Rajasthan Royals, he later became a crucial player for the Chennai Super Kings (CSK). Under MS Dhoni's leadership, Jadeja sharpened his skills and contributed to multiple title wins. In 2022, he was even handed the captaincy of CSK, showing the franchise's faith in his leadership qualities.

“Cricket teaches teamwork, proving that unity brings strength”

Achievements and Records:

Part of India's 2013 ICC Champions Trophy-winning team.

Ranked as the No.1 Test bowler by the ICC in 2017.

One of the few players with over 2,500 runs and 250 wickets in Test cricket. Known for being one of the best fielders in world cricket, often saving crucial runs. **Funny**

Celebrations:

Jadeja is famous for his unique sword celebration with the bat. He often twirls the bat like a sword, which makes the crowd cheer loudly.

Sometimes, his over-excited celebrations after run-outs or wickets make teammates laugh.

Personality and Nickname:

Fans lovingly call him “Sir Ravindra Jadeja”, a nickname that started as a social media meme but soon became a badge of honor. Jadeja's calm demeanor, combined with his warrior-like spirit, has made him a fan favorite.

Fans call him “Sir Jadeja”, and he is loved for his fighting spirit and consistency. His journey shows the power of hard work, discipline, and dedication.

Conclusion:

Ravindra Jadeja's story is that of perseverance, hard work, and versatility. From being an under-19 cricketers to becoming one of India's most reliable all-rounders, he has carved his legacy in the cricketing world. With many more years left in him, Jadeja continues to be a symbol of consistency, energy, and inspiration for young cricketers across the globe.

SWARNA MAHESH BABU

II year

The Glorious Chola Dynasty

Introduction

The Chola dynasty was one of the greatest empires of South India, remembered for its power, culture, and maritime strength. From the 9th to 13th centuries CE, the Cholas transformed Tamil Nadu into a hub of politics, art, and trade, leaving behind a legacy that still shines today.

The Rise of the Cholas

Early roots traced in Sangam literature (3rd century BCE).

Golden Age: Rajaraja Chola I and Rajendra Chola I expanded their empire.

Territories stretched across South India, Sri Lanka, Maldives, and Southeast Asia.

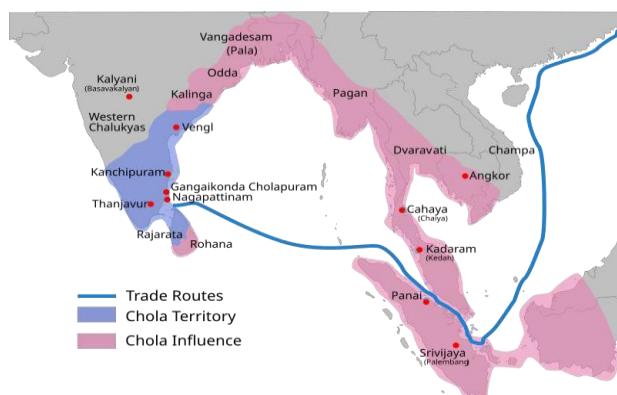
Did You Know?

Rajendra Chola I once led a successful naval expedition to Indonesia and Malaysia, showcasing India's ancient maritime power.

Political & Naval Power

The Cholas built one of Asia's strongest navies.

Controlled Indian Ocean trade routes.



Art & Architecture

The Brihadeeswarar Temple (Thanjavur): A UNESCO World Heritage site.

Exquisite bronze idols like Shiva as Nataraja.

Towering gopurams (temple gateways) and intricate sculptures.

Literature & Culture

Flourishing of Tamil literature under royal patronage. Growth of music, dance, and temple arts.

Traditions like Bharatanatyam and Carnatic music have roots in this era.

Economy & Administration

Advanced irrigation systems supported agriculture.

Prosperous maritime trade with China, Arabia, and Southeast Asia. Village assemblies (Sabha's) played a key role in administration. **Decline & Legacy**

By the 13th century, the dynasty weakened due to invasions and rising rival powers. Yet, their temples, inscriptions, and cultural influence continue to inspire pride in Tamil heritage

Conclusion

The Chola dynasty was not just a ruling empire—it was a civilization of creativity and vision. Their contributions to art, architecture, trade, and governance remain a shining example of India's golden past.

Quick Facts Box (Sidebar)

Period: 9th–13th Century CE

Greatest Rulers: Raja raja Chola I, Rajendra Chola I

Capital: Thanjavur

Famous Monument: Brihadeeswarar Temple

G. Srujan

II Year

The Journey of a Middle-Class Girl

In every nook and corner of society, there exist untold stories of grit and perseverance. This is the motivating journey of Yashna, a middle-class girl who overcame pressure, failure, and personal heartbreak before emerging to build something truly remarkable that made her family proud and motivated thousands of others.

Early Struggles:

Yashna was born into a modest family. Her father, a government clerk, and her mother, a homemaker, longed to provide her with a bright and educated future. But the burden of scholarly expectations proved too great. In her 10th class, when she performed below par, society ridiculed her skills. Exhausted and shattering, she even contemplated suicide. But her father's words — "Failures are not the end; they are the beginning of success if you choose to fight again" , stopped her from falling over the precipice. That moment marked the turning point of her life.

The Road to B. Tech:

Defiant, Yashna studied rigorously and passed her intermediate exams. She sat for the IIT entrance but failed. Once more, society ridiculed her. Rather than giving up, she decided to study engineering with a B. Tech degree. However, college life diverted

her; parties and social events drew her away from her actual purpose. Her father, in secret concerned, could do nothing but watch. Destiny, however, had other plans. When her father died unexpectedly, the shock hit Yashna hard. Among his items, she discovered a note: "My daughter will do something great one day. I believe in her." These words rekindled her desire to accomplish something great.

Innovation Against Odds:

Yashna started planning an international app that addresses real-world challenges. Society suspicious of her, investors dismissed her, and friends left her. In spite of numerous failures, she kept whispering to herself, "Papa believed in me. I cannot stop." After months of relentless effort, she successfully launched her app. Within weeks, it gained international attention, revolutionizing lives across the globe. News channels celebrated her as the girl who turned struggles into innovation.

A Daughter's Triumph:

With her earnings, Yashna built a new home for her mother, fulfilling her late father's dream. Her mother wept with tears of pride when she understood that her daughter had turned loss into success. Afterwards, Yashna decided to get married to the man she loved, not because of dependency but with pride and honor as a strong woman who had overcome adversity.

Lessons for Society:

Yashna's story is a reminder that failure is not conclusive, and hardships are not obstacles they are stepping stones. Her background shows that middle-class backgrounds are not weaknesses but strong bases that provide lessons in resilience, sacrifice, and determination. Her life challenges society to cease mocking failures and begin respecting perseverance.

Conclusion:

Yashna's story teaches us that society can mock you today, but someday the same society will applaud you. Challenges will always arise, but they mold us into stronger people. Her story motivates every dreamer with one message: "I am stronger than my struggles, and my dreams are bigger than my fears."

G. Lakshmi Sneha

III Year

Missile man of India

=» **Dr A.P.J Abdul kalam**

Dr. A.P.J. Abdul Kalam, affectionately known as the "Missile Man of India," was a remarkable scientist, visionary, and the 11th President of India. He left an indelible mark on India's scientific and political landscape, inspiring millions with his dedication, humility, and unwavering commitment to the nation's progress.

Early Life and Education:

He was born on October 15th, 1931, in Rameswaram, Tamil Nadu. Dr. Kalam hailed from a modest background and pursued his education with determination, earning a degree in aerospace engineering.

Career and Contributions:

His journey began at the Defense Research and Development Organisation (DRDO), where he played a pivotal role in India's missile development program. Dr. Kalam's ability to connect with people, especially the youth, set him apart. He tirelessly toured schools and colleges, inspiring students to dream big and work hard.

Presidency and Legacy

In 2002, Dr. Kalam became India's President, embracing the role with humility and grace. He focused on education, youth development, and innovation. His famous phrase, "Dream, Dream, Dreams transform into thoughts and thoughts result in action," continues to resonate with young minds.

Conclusion:

As "Dr. A.P.J. Abdul Kalam was not only a brilliant scientist but also a source of inspiration for present and upcoming generations. His contributions to India's defense and space programs have left an indelible mark on the nation's history. His life story continues to motivate countrymen to dream, work hard, and contribute to India's progress."

**D. Khaleel basha
II year**

Youth is indeed the future of the Nation

The Gen Z's of Nepal proved this once again. After tolerating the corrupted and unjust Government for a long time they finally fought and got what they deserve. This is an inspiration for all the other countries around the world. It's high time that the people understood the wrongdoings of Government and raise their voice against injustice. This protest indeed inspired many people around the world and many are proud of the youth of Nepal. "This Generation is the most unserious generation doing the most serious things"

This is what people think about this generation after what happened in Nepal.

What triggered this?

- The youth of Nepal were already fed up with the Government. There was **unemployment** everywhere because of which many people migrated to other countries for income.
- **Corruption** was another main reason for this protests.
- The youth were so done with the "Nepo Babies". When a common man is living in poverty, the children of the politicians are living a lavish and luxurious life.

The immediate trigger for this was the ban on **26 Social Media** apps including WhatsApp, Instagram and Facebook. This felt like their voice is silenced.

What happened during the protests?

Initially the protests were peaceful. They just wanted to end corruption and Nepotism. They wanted to lift the ban on social media. Many young people gathered together which had several students wearing their uniforms. The police tried to scare them off with **expired tear gas**, rubber bullets and water cannons but the youth didn't back down they stood strong. Later the police took this situation to the next level by open shooting several protestors with real bullets killing **19** people and injuring more than 400 people. Some of the people who died were students in their uniforms. These people were killed for just voicing their problems.

Suddenly the peaceful protests turned violent. The protestors started destroying government buildings and tried to enter the Parliament premises to destroy it. Eventually they burned down the Parliament and the private residences of the politicians. The Ministers were chased, stripped naked and thrashed by the protesters. This resulted in the resignation of Prime Minister and he along with several ministers fled the country in a Helicopter. Things escalated quickly and curfews were imposed. The police went door to door and killed many people at night which made it unsafe for the public. There was no safety even in the hospitals.

They won but at what cost?

- Many historic and important Government buildings were completely destroyed.
- Ex-PM's wife suffered serious burns when the protestors torched their residence
- Many of the protestors were seriously injured too.
- Nepal took a lot of time to build what they had. But now they are back to square one.
- What's going to happen now?

Whose fault is this?

- This could definitely be avoided if the government had listened to the protesters.
- The youth became violent only to retaliate the deaths of innocent students.
- What started as a peaceful protest immediately turned violent?

What they did to make it right!

- The Gen Z's stepped forward the next day to clean up their mess.
- They painted the dividers on road.
- Cleaned up the roads and surroundings.
- They took the responsibility for their mess and were accountable for their actions unlike the government.

What's Going to happen now?

While the prime minister has stepped down, it's not clear who will replace him or what happens next, with seemingly no-one in charge. Some leaders, including ministers, have reportedly taken refuge with the security forces. The protesters have so far defied an indefinite curfew in Kathmandu and beyond.

Grid Shield: The Future of Autonomous Laser Defence Systems

In today's world, security threats are no longer simple or easy to handle. Aircraft, drones, and advanced missiles are faster and smarter than ever before. Defence systems that worked in the past, like rocket-based anti-aircraft missiles, are still useful but face problems — they need constant resupply, consume a lot of energy, and don't always last long in tough battle conditions. That's why I've come up with a new idea — Grid Shield. It's a network of smart laser towers working together like a team. These towers don't just shoot at threats; they detect them early, save energy, and keep fighting even when things get tough. It's designed to cover a huge area and protect it from every direction, making it almost impossible for enemies to escape.

What is Grid Shield?

Grid Shield is a system made of several towers arranged in a grid pattern across an area of up to 10 kilometres or more. Every tower is independent but connected to the others through a secure communication network. Each one has its own laser turret, power system, sensors, and backup guidance tools.

These towers work together to:

Detect incoming threats like missiles or aircraft.

Adjust their energy depending on how serious the threat is.

Coordinate with other towers to ensure nothing gets through. Keep working even if some towers are damaged.

Instead of using lots of rockets, Grid Shield relies on laser beams that are faster, more precise, and don't run out of ammunition. Plus, by using renewable energy like solar power, it stays operational for longer without frequent supply shipments.

How Does Grid Shield Work?

Let's imagine how it works step by step.

1. Detecting Threats

Each tower scans the sky with powerful radars. It looks for flying objects like drones or aircraft and instantly figures out their size, speed, and direction.

2. Adjusting Energy

If a small drone is spotted, the tower only uses a small burst of energy to disable it. If a large aircraft or missile is detected, it increases the power output to make sure the target is destroyed quickly. This way, energy is never wasted.

3. Destroying the Target

Once the tower locks onto the enemy, its laser fires a precise beam to disable the target. If the main turret is hit or damaged, nearby towers automatically step in and take over the attack.

4. Covering Every Angle

The towers are arranged so that their coverage overlaps. Even if a plane tries to dodge one tower's attack, other towers will track it from different angles. This makes it nearly impossible for enemies to escape.

5. Staying in the Fight Longer

Because the towers use solar panels and energy-storing batteries, they can keep operating for days or even weeks. They don't need constant ammunition or fuel shipments like older systems.

What Makes Grid Shield Special?

Grid Shield is more than just a weapon — it's a smarter way to defend skies.

✓ Total Protection

Every direction is covered. There are no gaps for attackers to hide.

✓ Energy Saving

It only uses the power needed to destroy threats, which helps the towers operate longer without running out of fuel or batteries.

✓ Backup Systems

If one tower is damaged, others immediately support it. This keeps the entire system running smoothly.

✓ Environmentally Friendly

By using solar power and smart energy management, Grid Shield reduces waste and pollution while staying active.

✓ Quick Thinking

With AI-driven analysis, towers react to threats within seconds, faster than traditional systems relying on human operators.

Where Can We Use Grid Shield?

Even though this system is designed for military defence, it can help in other areas too.

Airports: Protect planes and passengers from drones and other flying threats.

Naval Bases: Shield ports from missile attacks during conflicts.

Borders: Keep remote areas safe without needing huge armies stationed everywhere.

Space Defence: With upgrades, Grid Shield could track space debris or advanced weapons approaching Earth.

Challenges We Need to Solve

No system is perfect. Grid Shield also faces some challenges.

⚠️ High Cost

Building and maintaining these towers will need a lot of money. We'll need careful planning and budgeting.

⚠️ Cybersecurity Risks

Since the towers are connected through a network, hackers could try to interfere. We must secure communication lines to prevent this.

⚠️ Weather Problems

Storms or heavy rain might affect the laser's precision. Designing protective coverings and backup systems will be essential.

A Glimpse into the Future

Grid Shield is more than a defence tool — it's the future of how we protect ourselves. With smarter technology, renewable energy, and real-time coordination, this system shows how defence can be efficient, sustainable, and responsible. It's a step toward creating safer borders, protected cities, and even space defence networks in the years to come. By making the system energy-smart and AI-driven, we can fight smarter, not just harder.

Grid Shield isn't just about lasers — it's about using technology wisely to build a safer world.

D.L.T. Akshith Bhardwaj

III Year

The Art of Bunking Classes

“Because some lessons are learnt outside the classroom...”

College life feels full of books, exams, and assignments. But hidden in this routine is a secret talent – the art of bunking classes. It's a tradition, a survival skill, and sometimes even a festival for students!

The Planning

Bunking never happens without planning. WhatsApp polls, silent nods in class, or that brave friend whispering “bunk chesthama?”—that's where it begins. Excuses vary: “Sir, project work undi” or “Library lo prepare chesthunna”.

The Execution

- Canteen – chai + samosas = endless gossip.
- Grounds – cricket, football, or just chilling.
- Hostel Rooms – “Power nap” or Netflix marathon.

Attendance may suffer, but the memories don't.

The Fails

Not every bunk succeeds. Sometimes lecturers walk into the same canteen, or only half the batch bunks, leaving others trapped in class. And the funniest? Friends bunk for a movie but post stories online—caught red-handed next day!

More Than Fun

Bunking actually teaches teamwork, coordination, and creativity. Most importantly, it gives us memories—no one remembers that random Tuesday lecture, but everyone remembers the chai party in the rain or the mass bunk for a movie.

Conclusion

Bunking is not about hating studies, but about balancing seriousness with joy. Years later, we may forget marks or assignments, but we'll always laugh about those unforgettable bunks.

Yes, bunking is not just an act. It's an art... an art of making memories.

D. Nikhil

II Year

Beyond Books: The Cultural Spirit

Education is often seen as the pursuit of knowledge through textbooks, lectures, and examinations. But if we look deeper, the true essence of education goes far beyond classrooms and syllabi. It is about shaping personalities, building confidence, encouraging self-expression, and nurturing creativity. On our campus, this broader vision of education comes alive through the vibrant cultural spirit that binds students together.

The Role of Culture in Student Life

Culture in a college setting is not merely about entertainment or leisure activities. It is a powerful platform for self-discovery and growth. When students participate in theatre, music, dance, or fine arts, they are not only showcasing their talents but also building essential life skills—teamwork, leadership, time management, and adaptability. For many, cultural events provide the first opportunity to step outside their comfort zone. A shy student might gather courage to speak on stage, a budding artist may paint their first canvas in front of an audience, and a group of musicians might experience the joy of creating harmony together. These experiences become milestones in their journey of personal growth.

Festivals That Define Our Campus

Every year, our college organizes a wide range of cultural programs that celebrate creativity and diversity. The most awaited of these is our annual cultural fest, 'Rhythm', which transforms the campus into a hub of colors, sounds, and energy. During the fest, the air is filled with excitement—dance performances light up the stage, theatre groups present plays that leave thought-provoking messages, and music bands captivate the audience with soulful melodies. In addition, art exhibitions display breathtaking paintings, photographs, and craftwork by our students. What makes these festivals special is the spirit of inclusivity. Students from different backgrounds, courses, and regions come together to celebrate their shared passion. It is not about winning competitions alone but about cherishing the joy of expression and creativity.

Culture as a Bridge of Unity

In a diverse country like India, cultural activities on campus play an important role in promoting unity in diversity. Dance forms like Bharatanatyam, Kathak, Bhangra, and Western hip-hop often share the same stage, reminding us that diversity is not something to be feared but celebrated. Such events allow students to understand and appreciate traditions beyond their own.

They break barriers of language, region, and stream of study. In the process, they strengthen bonds of friendship and create a sense of belonging that textbooks alone cannot provide.

Lessons Beyond the Stage

Behind every cultural program lies weeks of preparation, rehearsals, and coordination. Students learn the value of teamwork, as every successful event requires collaboration. They also pick up time management skills, balancing their academic responsibilities with practice sessions. For organizers, cultural events serve as a training ground for leadership. From managing budgets to handling logistics, they gain hands-on experience in problem-solving and decision-making.

These real-life skills are assets that will benefit them in any career path. Moreover, cultural activities provide an outlet for stress relief and emotional expression. In the fast-paced academic journey filled with exams and deadlines, music, dance, and theatre act as refreshing breaks that rejuvenate the mind and body.

Memories That Last a Lifetime

Long after we graduate, what remains etched in memory are not only the lessons we learned in classrooms but also the moments of joy, laughter, and excitement from cultural activities. The thrill of stepping on stage, the nervousness before a performance, the applause of the audience, and the sense of achievement after a successful event—these memories stay with us forever. For many, cultural activities also shape career choices.



Conclusion

“Beyond Books: The Cultural Spirit” is more than just a catchy phrase—it is the reality of student life. While academics form the foundation of our careers, cultural activities are what make us complete individuals. They teach us confidence, empathy, collaboration, and creativity. Our campus, with its vibrant cultural environment, gives every student the chance to shine not only as scholars but also as performers

P. Anusha

III Year

The Green Campus Initiative

Introduction:

Climate change is not a distant threat—it is happening right now. Extreme weather events, increasing pollution, and declining natural resources are forcing us to rethink how we live. In this context, educational institutions must act as leaders of change. Our campus has recognized this responsibility and has launched the Green Campus Initiative, a holistic program designed to promote sustainability, eco-consciousness. Unlike short-term campaigns, this initiative is a continuous journey involving students, faculty, and the larger community. It reminds us that sustainability is not a project with a deadline—it is a lifestyle.

Building a Sustainable Infrastructure:

Green infrastructure is the foundation of an eco-friendly campus. In addition to solar panels and energy-efficient lighting, our college has introduced:

- Green rooftops that reduce heat absorption and provide natural insulation.
- LED classroom lighting that cuts down power usage by nearly 40%.
- Smart irrigation systems that use sensors to water plants only when required.

These small yet impactful changes have not only reduced electricity bills but also encouraged innovation among students. Several engineering students have even developed prototypes of low-cost solar inverters and water-saving devices that may be used in the future.



Plastic-Free and Waste Management Drives

Our plastic-free initiative has gone beyond the campus walls. Each new student receives a reusable steel water bottle during orientation week, a symbolic step that sets the tone for their eco-friendly journey.

The waste management system is not just about segregation; it also involves:

- Paper recycling units, where used paper is converted into notepads for internal use.

- Biogas plants, where hostel food waste is converted into cooking gas.
- Awareness posters placed across campus to remind everyone of their role in minimizing waste.

Through these steps, the campus has reduced single-use plastic consumption by over 70% in two years—a milestone worth celebrating.



Greenery and Biodiversity Conservation

The lush greenery on our campus is not just for beauty—it is a living classroom. Botany students often use the herbal garden for practical lessons, while environmental clubs monitor bird populations and plant growth.

Some special projects include:

- Butterfly gardens, designed to attract pollinators.
- Medicinal herb walks, guided tours for schoolchildren to learn about traditional medicine.
- Adopt-a-Tree program, where students care for a specific tree during their time at the college.

Such initiatives prove that sustainability can be engaging and educational at the same time.



Role of Students in the Initiative

The Green Campus Initiative thrives because students are not passive observers—they are the drivers of change. Every semester, clubs organize:

- Cyclotrons to promote eco-friendly transport.
- Green competitions where hostels compete on who saves the most energy.
- DIY workshops where students create eco-bricks from plastic waste.

This not only spreads awareness but also builds a sense of pride among students. By taking ownership, they become ambassadors of sustainability for life.



Education for Sustainability

Sustainability must be learned as much as it is practiced. Courses on environmental studies now include case studies of eco-friendly universities around the world, such as:

- IIT Madras's zero-waste model.
- Stanford University's renewable energy projects.
- Universities in Europe using green transport systems.

In addition, students are encouraged to take up mini-research projects such as analyzing water usage patterns on campus or designing awareness campaigns for schools. This blend of academic and practical exposure ensures students leave college not just as graduates, but as responsible global citizens.



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Community Outreach and Partnerships

Our campus understands that sustainability should not be confined to academic spaces. Hence, outreach programs are a vital part of the initiative. Collaborations with NGOs have led to:

- Tree plantation drives in nearby villages.
- Workshops on waste segregation for local schools.
- Clean-up drives at public parks and riversides.

By involving communities, the initiative ensures that the message of sustainability spreads far and wide.



Challenges and the Road Ahead

No transformation comes without challenges. Despite awareness programs, some students still forget to segregate waste or leave lights switched on. But with innovation, persistence, and collective responsibility, these challenges are being overcome. The future roadmap includes:

- Expanding the biogas plant to cater to all hostels.
- Creating a mobile app that tracks electricity and water usage in real time.
- Building green labs that operate entirely on renewable energy.

Conclusion

The Green Campus Initiative proves that sustainability is not an abstract idea but a way of life. By combining eco-friendly infrastructure, student participation, and community outreach, Most importantly, it is instilling in students the belief that real change begins with small steps. Every tree planted, every drop of water saved, and every unit of electricity conserved.

Y. Dheeraj Goud

III Year

The Art of Saying No Gracefully

Saying no can be difficult, especially when you want to maintain positive relationships. However, it's a crucial skill for managing your time, setting boundaries, and protecting your well-being. This guide offers strategies for saying no in a way that is both respectful and effective.

Understanding Why It's Hard to Say No

Before diving into technique, it's helpful to understand why saying no can be so challenging:

- **Fear of Disappointing Others:** We often worry about hurting someone's feelings or damaging a relationship.
- **Guilt:** Feeling obligated to say yes, even when it's not in our best interest.
- **Desire to Please:** Wanting to be seen as helpful and accommodating.
- **Lack of Assertiveness:** Difficulty expressing our needs and boundaries clearly.
- **Social Conditioning:** Societal expectations that compliance and discourage refusal.

Strategies for Saying No Gracefully

1. Be Prompt and Direct:

Avoid Vague or hesitant language. A clear and concise 'no' is often the kindest approach.

Instead of saying 'I'll see what I can do' when you can't, say "Thank you for thinking of me, but I'm unable to take on any additional commitments right now".

2. Offer a Brief Explanation:

You don't need to over-explain or apologize excessively. A simple reason can suffice.

For example: I'm not available on that date due to prior commitment, or I'm currently focusing on other projects and can't take on anything new.

3. Suggest an Alternative:

If Possible, offer a different solution or refer a different solution or refer them to someone who can help.

I can't help with that right now, but perhaps [Name] would be a good resource. Or, I'm unavailable this week, but I could help you next week.

4. Be Firm and Consistent:

Once you've said no, don't waver. Avoid getting drawn into arguments or attempts to persuade you otherwise.

Politely reiterate your boundaries if necessary. 'I understand your request, but as I

mentioned, I'm unable to take on any additional responsibilities at this time.'

5. Acknowledge and Empathize:

Show that you understand their perspective, even if you can't fulfil their request.

'I appreciate you thinking of me' or 'I understand this is important to you.' This can be so often the blow and demonstrate respect.

Sample Scenarios & Responses:

- **Colleague asks you to cover their shift:** "Thanks for asking, but I have a prior commitment and won't be able to cover your shift. May be [Another colleague's name] is available?"
- **Friend invites you to an event you don't want to attend:** "I appreciate the invite, but I won't be able to make it. I hope you have a great time!"
- **Family member asks for financial assistance:** "I understand you're in the tough spot, but I'm not in a position to lend money right now. Have you considered exploring other resources like [local charity]?"

Conclusion:

Mastering the art of saying no is a journey that requires practice and self-awareness. By employing these strategies, you can protect your time and energy while maintaining respectful relationships. Remember, setting boundaries is an act of self-care and a key ingredient to a balanced and fulfilling life. Don't feel guilty for prioritizing your own needs. Over time it will become more natural.

P. Siva Sphoorthi Sree
III Year

Ghost in the Sky: The B-2 Bomber, a Modern-Day Flying Eagle

The B-2 Spirit bomber, often called the "flying wing," is one of the most remarkable aircraft ever built. It looks like something from a science fiction movie, with its sleek, tailless design that gives it the appearance of a massive, dark boomerang. But this unique shape isn't just for show; it's a key part of what makes the B-2 so powerful. Its main purpose is to be a **ghost in the sky**—to fly deep into enemy territory without being seen.

Unveiling the B-2's Advanced Features

The B-2 is a marvel of technology, built with advanced features that make it one of the most capable aircraft in the world.

Radar-Absorbent Material (RAM): The B-2 is covered in a special coating that soaks up radar signals instead of bouncing them back. This makes it almost invisible to enemy radar, a feature that is essential for its missions.

Reduced Signatures: The B-2 has its four powerful turbofan engines hidden inside its body. This design helps to reduce its heat signature, making it difficult for heat-seeking missiles to lock on. It also significantly lowers the aircraft's noise level.

Global Reach: This bomber is designed for long-distance missions. It can fly over 6,000 miles without refueling, and with aerial refueling, it can reach any point on the globe. This allows it to strike targets anywhere in the world from a base in the United States.

Minimal Crew, Massive Task: Adding to the B-2's uniqueness is its minimal crew. This giant plane is flown by just two people: a pilot and a mission commander. These crews are trained for incredibly long missions, sometimes lasting more than 30 hours, requiring immense focus and endurance as they fly "ghost-like" over vast distances.

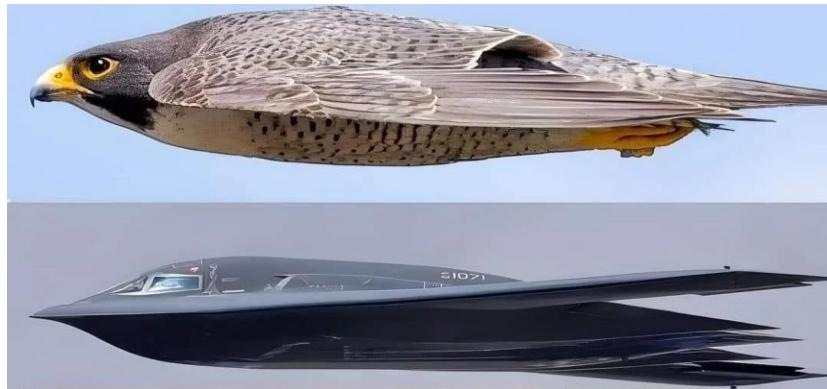
High Cost, Rare Asset: The B-2 is also one of the most expensive aircraft ever built, with a per-unit cost of over \$1 billion. Due to this high cost, only 21 were ever produced, making each one a priceless and strategic asset.

Massive Payload: It can carry a massive amount of bombs—up to 40,000 pounds—which includes powerful "bunker-buster" bombs designed to destroy deeply buried targets.

The Ultimate Guardian: A Lone Hunter

The B-2's design is truly unique, drawing inspiration from nature itself. Just as an **eagle** has broad, powerful wings that allow it to soar silently and efficiently, the B-2's "flying wing" design is all

about maximizing flight efficiency and stealth. The way it glides through the air is similar to a bird of prey. Its smooth, curved surfaces and lack of a tail also help it fly quietly, much like an owl's feathers allow it to hunt silently.



A key point about the B-2's protection is that it doesn't need an entourage. You may have heard that the B-2 is protected by six fighter jets, but this is a common misunderstanding. In reality, the B-2's security is its **stealth(secret)**. The entire purpose of its design is to avoid being detected in the first place. Fighter jets, while fast and powerful, are not stealthy. If a B-2 flew with a group of six fighter jets, the jets would appear on enemy radar, immediately giving away the bomber's position and defeating the whole purpose of the B-2's technology. Its best defense is simply not being seen, allowing it to strike its target before the enemy even knows it's there.



A Legacy in the Sky

The B-2 Spirit is a true masterpiece of engineering. It's a bomber that operates not with brute force, but with a silent, unseen presence. It's the modern equivalent of an eagle, soaring high and unseen,

a powerful symbol of air power and technology. While it remains a critical part of the U.S. Air Force, it is slowly being joined by its successor, the B-21 Raider. But even as new planes take to the skies, the B-2 will always be remembered as the original "ghost in the sky," a technological eagle that revolutionized warfare.

M Sindhu

II Year

ARE WE READY FOR THE NEXT DIGITAL PRIVACY CRISIS?

In today's hyper-connected world, where almost every aspect of our lives is online—from social interactions and shopping to education and banking—privacy has become one of the biggest challenges of our era. Every click, swipe, or share leaves a digital footprint.



Over the past decade, several major data breaches have exposed sensitive information of millions of users worldwide. Companies like Facebook, Google, and Twitter have faced heavy scrutiny for mishandling user data. Even government agencies have been involved in controversies regarding mass surveillance programs. With the rapid development of technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and Big Data analytics, the amount of personal data collected is growing exponentially. Devices like smartwatches, fitness trackers, and even smart home appliances continuously gather data without users being fully aware.

Why Are We Vulnerable?

1. Lack of Awareness: Many people don't fully understand the extent of data being collected about them or how it is being used. Privacy policies are often long, complex, and written in legal jargon that most users ignore.
2. Weak Regulations: While some regions, such as the European Union, have strong data protection laws like the General Data Protection Regulation (GDPR), many countries lack comprehensive privacy frameworks. This regulatory gap allows companies to exploit user data with minimal accountability.
3. Poor Cyber Hygiene: Reusing passwords, ignoring software updates, or installing unsecured

apps exposes individuals to hackers and data leaks.

4. Advanced Tracking Methods: Techniques like browser fingerprinting, location tracking, and cross-site tracking make it difficult to avoid being monitored online.

The Next Privacy Crisis: What Could It Look Like?

Experts warn that the next privacy crisis could be far worse than previous incidents. Instead of isolated data breaches, we might face large-scale abuses of personal information that affect society as a whole.

Imagine targeted political manipulation using your digital habits.

Personal health data exposed and misused by insurance companies.

Mass surveillance combined with AI-powered profiling, restricting freedom of expression.

The most alarming part? Many of these dangers are happening silently, without public attention until it's too late.

How Can We Prepare?

1. Educate Yourself: Learn how your data is collected and used. Read privacy policies when possible and understand settings on apps and devices.
2. Use Privacy Tools: Employ ad-blockers, VPNs, and encrypted messaging apps to reduce your digital footprint.
3. Strong Passwords and 2FA: Always use strong, unique passwords and enable two-factor authentication for better security.
4. Support Strong Regulations: Advocate for stricter privacy laws and hold companies accountable for mishandling data.
5. Stay Updated: Technology evolves fast, and so do privacy threats. Stay informed about the latest risks and how to defend against them.

The Role of Students and Youth

As students, we are among the most connected generations, yet also the most vulnerable. It's our responsibility to start conversations about digital privacy, raise awareness on campus, and adopt safe practices early. After all, today's small habits can prevent tomorrow's large-scale data disasters.

Final Thought

The next digital privacy crisis is not a question of "if," but "when." Being aware, cautious, and proactive today is the best way to protect our digital lives and preserve our fundamental right to privacy.

G. Akshitha

III year

BEYOND JOBS TOWARDS GROWTH

For many students, the ultimate goal of education seems to be landing a job. While careers are important, education—especially in Computer Science—goes far beyond jobs. It is about growth, innovation, and creating an impact on society.

Learning Never Ends

Technology evolves every single day. New programming languages, AI models, and innovations arrive constantly. If we stop at just “getting a job,” we stop growing. True success comes when we continue to learn, adapt, and innovate.

Growth is More Valuable than a Title

A job title may give identity, but growth gives purpose. Growth means improving problem-solving skills, becoming creative, learning to work in teams, and building solutions that can help people. These qualities shape us into leaders, not just employees.

Creating Value, Not Just Earning Salary

When we look beyond jobs, we realize education is about creating value—designing apps that improve lives, using AI for healthcare, developing tools for farmers, or building platforms that connect communities. Growth is about impact, not just income.

The Real Future

Jobs may change with time, but knowledge and growth stay forever. A true Computer Science student doesn’t just ask, “Which company will hire me?” Instead, they ask, “What can I build, learn, and contribute?”

“A job can make you earn a living, but growth can make you build a life.”

Introduction

The world of Computer Science is constantly evolving, with new technologies and innovations shaping the future. While most Computer Science students start their academic journey with a focus on securing a job post-graduation, the reality is that the true essence of this field goes far beyond simply landing a job. The focus should be on **growth**, both professionally and personally.

In this article, we explore the importance of continuous learning, skill development, and personal growth for Computer Science students as they move forward in their careers. It’s not just about finding a job—it’s about nurturing a mindset of **growth and adaptability** that will help you thrive in this ever-changing field.

The Evolving Nature of Technology

The tech industry is booming, but it's also highly volatile. New languages, frameworks, and paradigms emerge constantly, and old ones become obsolete. Here's why it's important to think beyond just jobs:

Technological Change: The rise of AI, machine learning, quantum computing, and blockchain is transforming the way we work. It's no longer about just using the tools that are out there—it's about anticipating the tools that will come next.

Job Market Evolution: The roles of today may not exist in the same form tomorrow. A software engineer in 2025 might be working on something we haven't even thought about yet. The future isn't just about getting the next job—it's about having the tools to adapt to whatever new technology emerges.

Focus on Impact, Not Just Role: Instead of aiming for a specific job title, focus on how you can make an impact. Whether it's building ethical AI, contributing to open-source projects, or solving complex real-world problems, your growth should be about *purpose* as much as *position*.

Key Takeaways for Personal Growth

Embrace Lifelong Learning:

The best way to keep growing as a Computer Scientist is through continuous learning. Stay curious. Enroll in MOOCs (Massive Open Online Courses), attend workshops, read research papers, and don't be afraid to dive into new technologies. Platforms like Coursera, Udemy, and edX are great resources.

Build a Personal Brand:

A strong personal brand is a powerful asset. Start by contributing to open-source projects, writing blogs, or speaking at local tech meetups. Your personal brand is what sets you apart from others when you're looking for opportunities.

Networking and Collaboration: Networking isn't just about finding a job; it's about creating a **supportive community**. Collaboration, whether with fellow students or professionals in the industry, fosters growth. Seek out

Mentorship: Whether it's a professor, a senior colleague, or someone in the industry, having a mentor helps you stay grounded, avoid common mistakes, and develop new skills.

Peer Collaboration: Often, the best learning happens through discussion and group work. Don't be afraid to team up with others for side projects, hackathons, or study groups. This will challenge your ideas and introduce you to new ways of thinking.

Building Soft Skills for Future Success

In addition to technical skills, soft skills such as **communication**, **problem-solving**, and **leadership** will be the differentiating factors that help you thrive in your career. In a world where automation is making many technical tasks easier, human qualities like creativity, emotional intelligence, and strategic thinking will become more valuable.

Key Soft Skills for Computer Scientists:

Effective Communication: Being able to explain complex ideas clearly and concisely is crucial, whether in a team meeting or presenting your work to a non-technical audience.

Critical Thinking: The ability to solve problems creatively and think critically about challenges will set you apart in tech roles.

Leadership & Teamwork: Being able to manage projects, lead teams, and collaborate effectively is vital for personal growth and career progression.

Diversifying Your Skill Set

The future of Computer Science is interdisciplinary. It's not enough to just master one programming language or one niche area of tech. Here's why you should consider diversifying your skills:

Interdisciplinary Knowledge: For example, knowledge of data science combined with business acumen, or coding skills alongside a deep understanding of cybersecurity, can make you invaluable in today's job market.

Technical vs. Creative: As a computer scientist, you may not only focus on technical execution but also have opportunities to get involved in design, product management, or UX/UI design. Broadening your skill set beyond traditional coding helps you stand out in a competitive job market.

Conclusion: Growth is a Journey, Not a Destination

The goal isn't simply to find a job after graduation—it's to set yourself up for a long, fulfilling career in Computer Science. Personal and professional growth will come from your ability to stay curious, remain adaptable, and continue learning. Cultivate the mindset that growth is a journey, not a destination, and focus on building a career that is not just about the next role, but about your

long-term evolution as a Computer Scientist.

Whether you're tackling complex algorithms, exploring new technologies, or leading teams, the key is to focus on growth—your growth—and how you can use it to make a meaningful impact on the world.

This structure covers both practical advice (networking, soft skills, and diversifying knowledge) and larger philosophies (growth mindset and lifelong learning) that can inspire Computer Science students to think beyond short-term job goals.

Would you like me to help with the design or layout of this article? I can assist with creating a visual layout or even a graphic to accompany it!

K. Haritha

III year

How AI poisoning is fighting bots that hoover data without permission

Gone are the days when the web was dominated by humans posting social media updates or exchanging memes. Earlier this year, for the first time since the data has been tracked, web-browsing bots, rather than humans, accounted for the bulk of web traffic.

Well over half of that bot traffic is from malicious bots, hoovering up personal data left unprotected online, for instance. But an increasing proportion comes from bots sent out by artificial intelligence companies to gather data for their models or respond to user prompts. Indeed, ChatGPT-User, a bot powering OpenAI's ChatGPT, is now responsible for 6 percent of all web traffic.

AI data poisoning

It is little wonder, then, that new tools are being made available to content creators that offer stronger protection against AI bots.

One such tool was launched this year by Cloudflare, an internet infrastructure company that provides its users protection against distributed denial-of-service (DDoS) attacks. To combat AI bots that may pose their own DDoS-like risk, Cloudflare is fighting fire with fire: it produces a maze of AI-generated pages full of nonsense content so that AI bots expend all their time and energy looking at the nonsense, rather than the actual information they seek.

Copyright infringement

For centuries, copycats have made a quick profit by mimicking the work of artists. It is one reason why we have intellectual property and copyright laws. But the arrival in the past few years of AI image generators such as Midjourney or OpenAI's DALL-E has supercharged the issue. A central concern in the US is what is known as the fair use doctrine.

E. Shahina

S. Kousarunnisa

III Year

Embracing Chaos: Why Quantum Computers' Randomness Is Their Secret Weapon

For decades, the promise of quantum computers has been wrapped in mystery. These machines—operating not with the rigid certainty of classical bits, but with the fluid, ghostlike behavior of qubits—are notoriously unpredictable. Ask a quantum computer the same question twice, and you may get two different answers.

The Strange Beauty of Quantum Randomness

Earlier this year, a global team of researchers from Quantinuum, JPMorgan Chase, Oak Ridge and Argonne National Laboratories, and the University of Texas at Austin reported a breakthrough: they had coaxed a 56-qubit quantum computer into doing something no classical machine could match. It didn't solve an equation or simulate a molecule.

Why Randomness Matters More Than You Think

To the uninitiated, random numbers might sound trivial. But they underpin some of the most critical systems in our digital lives.

Cryptography: Secure communication relies on cryptographic keys that must be completely unpredictable. If even a sliver of pattern leaks through, hackers can exploit it.

Fairness: Lotteries, randomized trials, and even online matchmaking depend on randomness to guarantee fair outcomes.

Science and Simulation: Random numbers drive Monte Carlo simulations in everything from particle physics to climate models. The quality of those numbers can mean the difference between an accurate model and a flawed one.

“Randomness is the fuel of the digital age,” one researcher noted. “If it’s tainted, the whole engine sputters.”

The Roadblocks Ahead

For all the excitement, certified randomness isn’t ready for mass deployment. The verification process is enormously costly—requiring vast amounts of classical computing power just to check a modest amount of quantum-generated bits. Scaling this to consumer devices or real-time applications will take years of refinement. There’s also the problem of noise. Quantum machines are delicate, and their qubits are easily disturbed by environmental factors. Distinguishing true quantum randomness from hardware imperfections remains a challenge.

A Future Built on Uncertainty

Despite the hurdles, the implications are profound. Imagine financial institutions using quantum-certified random numbers to generate unbreakable cryptographic keys. Or governments securing communications with randomness so pure, even state-level adversaries couldn't predict it.

We may even see “randomness-as-a-service” offered by quantum cloud providers, where companies tap into certified entropy streams as easily as they rent server space today.

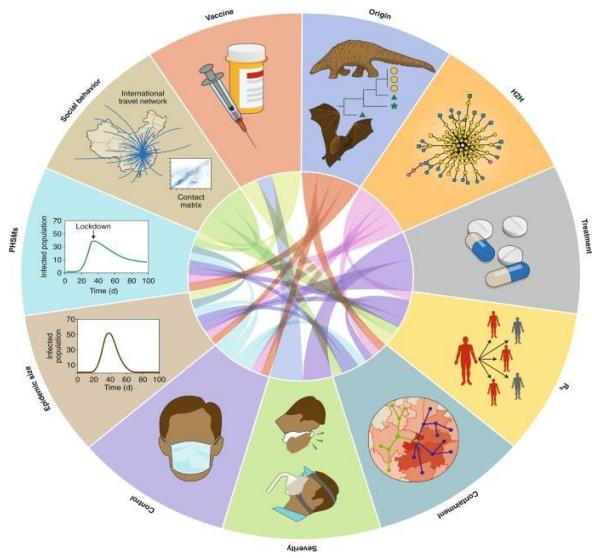
For now, quantum computers remain exotic, temperamental machines. But their strangeness—the very unpredictability that once seemed like a weakness—is becoming their strength. In embracing their randomness, we may be glimpsing the first truly useful role quantum computers will play in everyday life. And perhaps that's the lesson: sometimes, chaos is the point.

EMAM SAHEBGARI SHAHINA

COVID-19 Pandemic

Introduction

The COVID-19 pandemic, caused by the novel coronavirus (SARS-CoV-2), emerged in late 2019 in Wuhan, China. It quickly spread worldwide, becoming one of the deadliest and most disruptive pandemics in modern history. The world faced lockdowns, overwhelmed hospitals, and severe social and economic challenges.



How Humanity Suffered

The pandemic disrupted every aspect of life. Families were separated, millions of people lost their jobs, and many-faced mental health struggles due to isolation and uncertainty. Daily routines such as schooling, work, travel, and social gatherings came to a standstill. Fear and grief became global experiences.

Health Impact and Death Rates

By mid-2022, over 6.5 million people worldwide had lost their lives to COVID-19, with more than 600 million confirmed cases. The survival rate varied depending on age, health conditions, and access to medical care. While most people recovered, vulnerable groups such as the elderly and those with pre-existing illnesses faced a much higher risk of severe illness and death.

Despite high mortality in certain regions, global survival rates were estimated to be above 97%. Vaccination drives significantly reduced deaths and hospitalizations in later waves.

Healthcare Challenges

Healthcare systems around the world struggled under immense pressure. Hospitals faced shortages of oxygen, ventilators, ICU beds, and protective equipment. Doctors, nurses, and frontline workers worked tirelessly, often at great personal risk. Many healthcare workers themselves fell victim to the virus.

Impact on Education

Education systems were severely disrupted. Schools and universities shut down, forcing a sudden shift to online learning. While technology helped many continue their studies, millions of students in rural or underprivileged areas faced setbacks due to lack of internet access and digital devices.

Economic & Social Impact

Global economies suffered huge losses. International trade slowed, tourism collapsed, and unemployment rates soared. Social life was deeply affected, with weddings, festivals, and cultural events postponed or canceled. At the same time, digital platforms became the backbone of work, learning, and entertainment.

Precautions & Awareness

Preventive measures such as wearing masks, maintaining social distance, frequent handwashing, and vaccinations were crucial in controlling the virus. Public health campaigns, media awareness, and government initiatives played a key role in educating people.

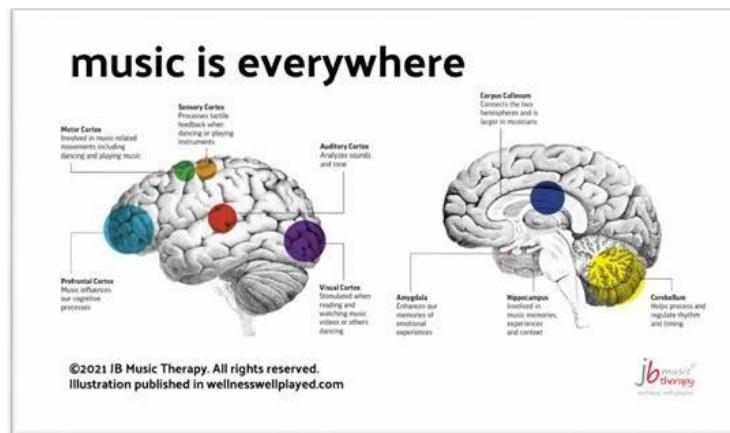
Positive Outcomes and Lessons Learned

Despite the suffering, the pandemic also taught humanity the importance of unity, resilience, and preparedness. Global scientific collaboration led to the fastest vaccine development in history. The crisis accelerated advances in healthcare, digital technology, and awareness about mental health.

How Music Shapes Memory - The Soundtrack of Our Lives

Music has always been more than just a source of entertainment. It is a deeply ingrained part of the human experience, influencing everything from our emotions to our cognitive functions. But one of the most fascinating ways music impacts us is through memory. Whether it's the first song we danced to, a childhood lullaby, or a tune that instantly takes us back to a specific moment in time, music has a profound ability to shape and trigger our memories. But how does this happen?

The Science Behind Music and Memory

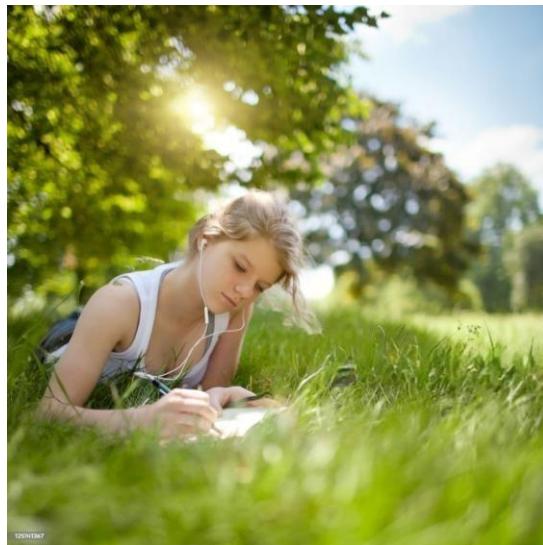


To understand how music influences memory, we must first take a look at how the brain processes both music and memory. At the center of this interaction is the hippocampus, a region of the brain crucial for forming new memories. Music, with its emotional and rhythmic elements, has the unique ability to engage several regions of the brain simultaneously, making it one of the most effective tools for memory recall. Studies have shown that the brain processes music in both hemispheres, engaging areas that govern emotions, movement, and even language. When we listen to music, the auditory cortex interprets the sound, while the limbic system—responsible for our emotional responses—activates memories and feelings associated with the music. This multi-sensory experience explains why music can evoke such strong memories, whether they're happy, sad, nostalgic, or transformative.

The Role of Emotion in Memory

One reason music has such a powerful influence on memory is its ability to evoke emotions. Memories that are associated with strong emotions tend to be more vivid and easier to recall. This is known as the emotion-memory connection. When we hear a song tied to a particular event or time in our lives—such as a wedding, a road trip, or a loss—the emotional weight of the music

helps anchor that memory in our minds. For example, think of the last time you heard a song that reminded you of a past relationship. Chances are, you didn't just remember the song—you also remembered how you felt during that time. Music acts as a sort of emotional trigger, linking feelings and events to specific songs. This phenomenon is so powerful that researchers have even found that music can help patients with Alzheimer's and dementia recall lost memories by activating the emotions connected to their past.



Music and Personal Memory: The Nostalgia Effect

Music doesn't just shape our memories—it also shapes how we experience them. The concept of nostalgia is deeply connected to music. Certain songs can transport us back in time, allowing us to relive moments from our past with clarity. Whether it's a song from your high school years, a tune that played during a significant event, or an album that was the soundtrack to a particular phase of your life, music has the power to act as a time machine. Research has found that listening to familiar music from our past can activate areas of the brain associated with autobiographical memory, allowing us to relive specific moments in time with remarkable detail. This is why a song can trigger a flood of memories, from the sights and sounds of a particular place to the people we were with. Music doesn't just jog our memory—it can completely transport us back to the emotional experience of a moment, often with startling vividness.



The Soundtrack of Learning and Memory

Beyond therapeutic uses, music can also enhance memory retention in everyday life. From learning a new language to memorizing a speech, the brain responds positively to the rhythm and melody of music. Music can help encode information in long-term memory, making it easier to recall when needed. For instance, when studying, students often use instrumental music to focus and enhance their concentration. The right type of music, such as classical or ambient soundscapes, can help block distractions, improve focus, and make learning more efficient by tapping into the brain's natural rhythm.

Conclusion:

Music's ability to shape and trigger memory is a testament to its power. Whether it's through evoking emotions, reinforcing repetition, or sparking nostalgia, music becomes more than just sound—it becomes a bridge to our past, a tool for learning, and a source of emotional connection. The next time you hear a familiar song, pay attention to the memories it stirs up. You might be surprised at how much music shapes your world—and your mind.

R. SRI VIDYA

AI in Robotics: Innovations, Challenges, and Future Directions

Artificial Intelligence (AI) is transforming robotics by enabling perception, learning, and decision-making in dynamic environments. This article highlights core innovations, key applications, major challenges, and promising future directions in AI-driven robotics.

1. Introduction

The fusion of AI and robotics has created machines that are autonomous, adaptable, and intelligent. These systems are increasingly used in manufacturing, healthcare, agriculture, transportation, and exploration, making them central to modern technological progress.



2. Innovations

Perception & Sensing: Multimodal sensors and vision-language models improve environmental understanding.

Learning & Adaptation: Deep reinforcement learning and transfer learning allow continuous skill development.

Control & Planning: Real-time control and hybrid architectures support reliable decision-making.

Design & Embodiment: AI-driven design and soft robotics enhance efficiency and flexibility.

3. Applications

Industrial automation (manufacturing, logistics)

Autonomous systems (self-driving cars, drones)

Service robots (healthcare, domestic, hospitality)

Agriculture & exploration (precision farming, space, underwater missions)

4. Challenges

Technical: Limited data, sim-to-real gap, energy constraints, safety issues. **Ethical/Societal:** Transparency, privacy, liability, job displacement.

Regulatory: Lack of standards, cybersecurity risks.

5. Future Directions

Foundation models and lifelong learning.

Human-robot collaboration and trust.

Energy-efficient edge AI and neuromorphic computing.

Swarm robotics and coordinated systems.

Strong ethical and policy frameworks.

6. Conclusion

AI is pushing robotics toward unprecedented autonomy and adaptability. Success will depend on addressing technical, ethical, and regulatory hurdles while ensuring responsible innovation for societal benefit.

MEDAM SAI HARINI

Teacher as Visionary Man

Introduction:

In generally in every human's life their so many relationships like friends, parents, siblings...etc. But we can also have another relation which can improve or change our personal dedication and behavior, that relation is student and teacher relationship.

A teacher is much more than an educator; they are mentors, guides, and motivator who shape the intellectual, emotional, and social growth of students' lives. Their vision extends beyond classrooms, influencing the things of individuals and society. In this article, we'll explore a teacher's pivotal role in a student's life, their impact in the years to come, and the evolving vision of today's educators.

A Teacher's Role in a Student's Life:

1. Knowledge Imparting: Teachers are primary sources of academic knowledge, helping student's ideal concepts across subjects.
2. Character Building: They will explore how to build our character and values like discipline, empathy, teamwork, and resilience.
3. Mentorship: Teachers guide students in career choices, personal growth, and overcoming challenges.
4. Inspiration: In human life every student can spend more time on educational institutes, by evaluating the personality of a teacher, a student approach as a inspiration by his teacher by seeing his role in guidance, patience in teaching,
5. Support System: They often provide emotional support, helping students navigate academic pressures and personal struggles.

Why Visionary Teachers Matter:

They're architects building bridges to futures bright with potential. By seeing what could be, they empower students to shape what will be – be it in science, arts, entrepreneurship, or social impact. Their classrooms become launch pads for dreams.

Impact on Students and Beyond:

The influence of visionary teachers isn't confined to academics; it seeps into shaping resilient, globally-aware individuals equipped for life's complexities. By fostering creativity and critical thinking, they nurture problem-solvers poised to tackle tomorrow's challenges. Their classrooms become incubators for leadership, compassion, and innovation – qualities that echo long after

formal schooling ends. Students aren't just recipients of knowledge; they're co-creators of their learning journeys, empowered to chase aspirations with confidence.

Legacy and Significance:

Ultimately, visionary teachers aren't just educators; they're dream-weavers for a brighter collective future. By seeing what could be, they empower students to shape what will be – be it in science, arts, social entrepreneurship, or myriad fields where human potential unfolds. Their classrooms metamorphose into launch pads for dreams, leaving imprints that extend far beyond walls and syllabi.

Conclusion:

At last a teacher can play a important role in students. Hence a visionary teacher is a transformative force, sculpting not just minds but futures. They blend inspiration, adaptability, and empathy to craft learning journeys that empower students to shape tomorrow's world. Their impact transcends classrooms, nurturing innovators, leaders, and compassionate individuals equipped to navigate complexity and drive positive change. By envisioning possibilities beyond the present, they ignite potential in others, leaving a lasting imprint on lives and society.

B. Mohammad Rafi

M. Karishma

ACHIEVEMENTS

Name of the student	Regd. No.	Achievement
Ravi Kumar Boya	22091A05C7	Achieved a GATE rank of 24832 GATE reg No: CS25S17119148
C Sai Ram Suhaas Reddy	22091A05D9	Achieved a GATE rank of 46080 GATE reg No.: CS25S21204322
Vaishnavi Kurakula	22091A05F7	Achieved a GATE rank of 16522 GATE reg No.: CS25S27119096
Chakrapani Reddy Narla	22091A0523	Achieved a GATE rank of 42243 GATE reg No.: CS25S17119026
Gautham Kumar Govindinne	22091A0538	Achieved a GATE rank of 30854 GATE reg No.: CS25S27119142
Gollapinni Aasritha	22091A0501	Elected as the Internshala Student Ambassador
Syed Aman Mirzanullah	24091A0514	Elected as the Google Student Ambassador
Budatala Mahammad Rafi	24091A05C6	Elected as the Google Student Ambassador
Muchukota Karishma	24091A05B8	Elected as the Google Student Ambassador



OBJECTIVES OF COMPASS

- INVOLVE STUDENTS IN DIFFERENT FORMS OF PEER-LEARNING
- ENCOURAGE STUDENT PARTICIPATION IN ACTIVITIES THAT REQUIRE THEM TO ACQUIRE AND DEMONSTRATE RATIONAL THINKING, COMMUNICATION SKILLS AND LOGICAL ABILITY.
- BRING OUT THE LEADERSHIP SKILLS AMONG INDIVIDUALS BY PROVIDING THEM SUFFICIENT EXPOSURE TO UTILIZE THE SKILLS ACQUIRED.
- HELP STUDENTS RECOGNIZE THE IMPORTANCE OF SMART-WORK & THINKING OUTSIDE THE BOX, THUS INculcate CREATIVE THINKING.
- CONTRIBUTE TO ALL ROUND DEVELOPMENT OF INDIVIDUALS THROUGH LEARNING OUTSIDE THE CLASSROOM.