



**Smt.Indira Gandhi College Of Engineering ,Ghansoli**  
*Affiliated By university of Mumbai*

Volume I

# SECURE SYNERGY

Insights of Innovations & Imagination

Department of CSE(IOT CSBC)



## GET YOURSELF CONNECTED

Tech Innovations, Trends,  
Culture, Solutions, & Ideas



**SMT.INDIRA GANDHII COLLEGE OF ENGINEERING**

***AFFILIATED BY UNIVERSITY OF MUMBAI***

**PLOT NO. 1, SECTOR8, GHANSOLI, NAVI MUMBAI**

***Academic Year 2023-2024***



***PRESENTING BY***

**DEPARTMENT OF CSE IOT & CSBC**

# INTRODUCTION

The Department of IoT, Cybersecurity, and Blockchain Technology stands at the forefront of modern technological innovation, dedicated to nurturing the next generation of engineers capable of addressing real-world challenges in the digital age. Established with a vision to blend cutting-edge technologies, the department emphasizes an interdisciplinary approach, integrating the Internet of Things (IoT), robust cybersecurity practices, and transformative blockchain systems.

With a curriculum designed to balance theoretical knowledge and hands-on experience, students gain deep insights into smart systems, secure data communication, and decentralized technologies. The department actively promotes research, innovation, and industry collaboration, preparing students for emerging roles in tech-driven industries.

Backed by experienced faculty, state-of-the-art labs, and continuous exposure to real-time projects, the department empowers students to become future-ready professionals contributing to secure, intelligent, and connected ecosystems.

The department believes in student-centric, aims to professional engineer who are culturally vibrant, socially sensitive and enterprising with leadership qualities, communication qualities. Sincere efforts and sense of responsibilities provided by the faculty members and show their maturity to understand the problems of students and nurture them accordingly.

# **VISION**

Cultivate the students with all-round competencies for career, higher education and self - employability in the field of IOT, Cybersecurity and Blockchain.

# **MISSION**

**M1:** To equip the students with strong fundamental concepts, analytical capability, programming and problem-solving skills.

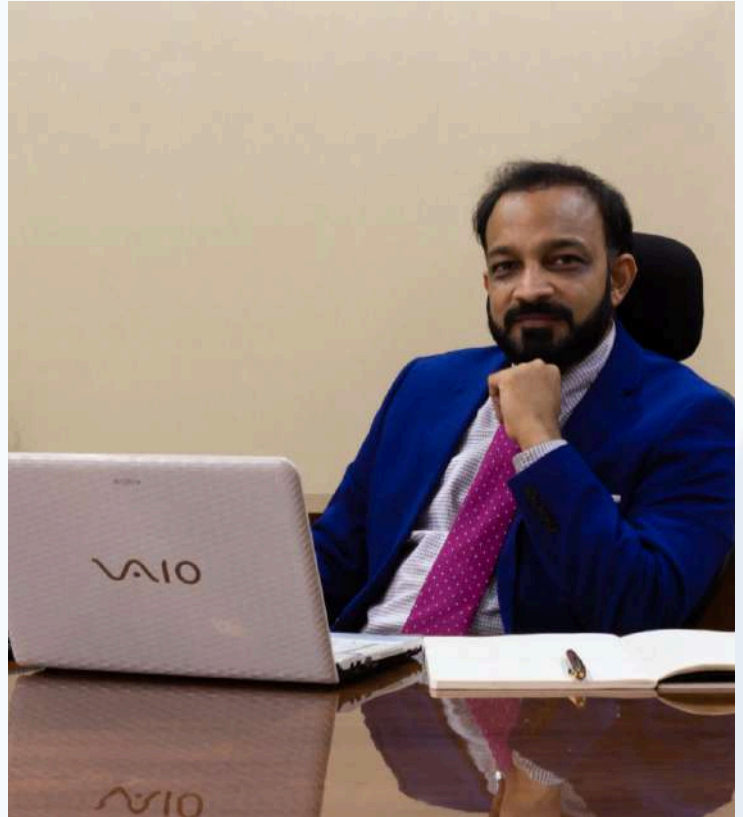
**M2:** To improve the department industry collaboration through interaction including participation in professional society activities, guest lecturers and industrial visit.

**M3:** Inculcate technical skill and soft skill for lifelong learning.

# TRUSTEES' MESSAGE

Dear Students,

I am delighted to extend my heartfelt congratulations to all the contributors of this issue of Volume 1, Secure Synergies (Insight of Innovation and Imagination). You have made not only IOT department but entire SIGCE very proud. Your tireless efforts, creativity, and dedication in bringing this magazine to life are truly commendable. In this rapidly evolving technological landscape, you have chosen to explore and highlight some of the most cutting-edge areas: cybersecurity, blockchain, and the Internet of Things (IoT). These fields are at the forefront of innovation and play a critical role in shaping the future of engineering and technology. Your insightful articles on cybersecurity remind us of the importance of protecting our digital world from threats.



In the realm of blockchain, you have showcased the transformative potential of this technology in various sectors. And your exploration of IoT demonstrates the incredible possibilities of a connected world, where devices communicate seamlessly to improve our lives.

It is truly inspiring to see the enthusiasm and initiative you have shown in delving into these complex topics. Your work not only reflects your academic prowess but also your ability to think creatively and critically about the challenges and opportunities that lie ahead.

The rapid evolution of Generative AI should be considered as double edge sword. I will challenge students to be cognisant of its impact on your academic learning and creativity. At the end of the day, Generative AI and applications like Chat GPT, Gemini, Co-pilot etc are running models on the old knowledge. No doubt you will need to all the knowledge available to create new things, but one must take care that only your new learnings and creativity with your life long curiosity will be rewarded in long run, I encourage you to continue pushing the boundaries of your knowledge and to keep up your inquisitive spirit. The future of technology is in your hands, and I have no doubt that you will be the pioneers who drive innovation and make significant contributions to our society.

Once again, congratulations to all the students involved in this magazine. Your hard work and dedication are the pillars of our institution's success. Keep up the excellent work, and I look forward to seeing more of your brilliant contributions in the future.

Warm regards,

Sunil Jadhav

Managing Trustee

Smt. Indira Gandhi College of Engineering

# PRINCIPAL'S MESSAGE

Dear Students, Faculty Members, and Esteemed Readers,

It is a matter of great pride and joy to witness the publication of this bulletin by the Department of Computer sc.& Engineering, with a focus on IoT, Cyber Security, and Blockchain Technology. This magazine is not just a compilation of articles, research, and creative work, but a reflection of the dedication and enthusiasm of our faculty and students toward advancing knowledge in these cutting-edge fields. In today's era, emerging technologies such as the Internet of Things, Cyber Security, and



Blockchain are redefining the way we live, work, and interact. They offer tremendous potential to address global challenges and improve the quality of life. By exploring and mastering these fields, our students are preparing themselves to become future leaders and innovators in technology.

I congratulate the editorial team, faculty, and students for their relentless efforts in bringing out this magazine, which I believe will serve as an excellent platform for sharing innovative ideas, research insights, and technological trends. I encourage everyone to make the most of this opportunity to learn, grow, and inspire one another.

My best wishes to the entire team for continued success in all their academic and research endeavors.

Warm regards,

Dr. Sunil Chavan

Principal

Smt. Indira Gandhi College of Engineering

# HOD'S MESSAGE

As the Head of the Computer Science and Engineering Department, specializing in the Internet of Things (IoT) and Cyber security including Blockchain Technology (CSBC), I am excited to welcome prospective students to a world of innovation and endless possibilities. Education is not merely the acquisition of knowledge; as Albert Einstein once said, "Education is not the learning of facts, but the training of the mind to think." Our department embodies this philosophy, fostering a dynamic environment where students learn to think critically and creatively about technology.

Our curriculum is designed to equip students with a robust understanding of both theoretical concepts and practical applications in IoT and cyber-security. With

a focus on emerging technologies, we ensure that our students are not only adept in current industry standards but are also prepared to be pioneers in future advancements. Through hands-on projects, industry collaborations, Industrial Visits which are organised Every Semester and cutting-edge research opportunities, our students gain invaluable experience that sets them apart in the job market.

A highlight of our department is the IOtech Club, a vibrant technical club dedicated to nurturing innovation and collaboration among students. This club serves as a platform for students to engage in workshops, hackathons, and seminars, allowing them to work on real-world problems and develop their technical skills. It encourages teamwork, creativity, and leadership, essential qualities for success in the tech industry.

Looking ahead, the future of IoT and CSBC is incredibly promising. With the increasing integration of smart technologies in every aspect of life, the demand for skilled professionals in this field is skyrocketing. Together, we will explore the exciting challenges of tomorrow's technology landscape and prepare you for a successful career that makes a difference in the world. Your future in technology begins here!



Warm regards,

Dr. Madhu Nashipudimath

Professor and HOD, Department of CSE IOT & CSBC,

Smt. Indira Gandhi College of Engineering

## About Secure Synergy,

**Secure Synergy** is more than just a name, it represents the unified spirit of innovation, collaboration, and growth that defines the Vision of our department. "**Secure**" symbolizes the foundation of trust, reliability, and cybersecurity that underpins our discipline, while "**Synergy**" reflects the power of working together where students and faculty towards a common purpose.

This magazine serves as a creative platform to showcase the brilliance, talent, and hard work of our students and faculty. From cutting-edge projects and insightful articles to event highlights and personal experiences, Secure Synergy captures the vibrant essence of our academic journey.

Each edition is a testament to the collaborative energy within our department it's a space where knowledge meets imagination, and where individual voices come together to form a stronger, unified whole. Through this publication, we aim to inform, inspire, and strengthen the sense of connection within our ever-evolving tech community.

Welcome to Secure Synergy—where ideas converge, and innovation begins.

# STUDENT DESK

As students of the Computer Science and Engineering (IoT - CSBC) department, Vaishnavi Lahoti, Aarya Sawant, and Shubham Mahadik embarked on their very first journey to create a vibrant and engaging edition of the department magazine. Fueled by curiosity and a shared passion for creativity, the trio stepped into this new endeavor with fresh ideas and an eagerness to contribute something meaningful to their academic community.

Vaishnavi, known for her knack for storytelling and coordination, curated compelling write-ups that showcased student innovations, insightful articles, and memorable departmental events. She also efficiently handled communication with faculty members, ensuring smooth collaboration. Aarya brought her signature style to the project, meticulously designing each page with a blend of elegance and creativity that brought the magazine to life. Meanwhile, Shubham ensured everything ran on schedule, managing deadlines and contributions with a sense of responsibility that kept the team on track and inspired.

Though the journey came with its share of late nights and tight timelines, it was marked by a spirit of friendship, discovery, and shared laughter. Editing drafts, refining layouts, and exchanging ideas became more than just tasks, they became opportunities for growth and connection. Each step deepened their bond not just with one another but also with the department they proudly represented.

Holding the final magazine in their hands, they felt a deep sense of fulfillment. Their collaborative effort had transformed into a meaningful piece of work—one that would inspire and connect students across batches. Beyond enhancing their creative, organizational, and communication skills, this experience reaffirmed the power of teamwork and the joy of bringing collective ideas to life. For Vaishnavi, Aarya, and Shubham, the magazine was not just a publication, it was a celebration of shared passion and purpose.



**Vaishnavi Lahoti**



**Aarya Sawant**



**Shubham Mahadik**

# DEPARTMENT REPORT

The Department of IoT & CSBC has consistently strived to deliver a comprehensive educational experience that combines academic content with real-world relevance. In the academic year 2023-24, the department curated a blend of technical sessions, developmental workshops, and awareness initiatives to ensure that students remained aligned with the evolving demands of the tech industry.

In the odd semester, a technical session on “Introduction to TensorFlow” was organized to build foundational understanding of artificial intelligence and machine learning. The session introduced students to core concepts of neural networks, supervised learning, and practical applications of AI in IoT systems. Emphasis was placed on enabling students to explore AI as a crucial layer in future IoT-based innovations. Hands-on engagement during the session allowed participants to gain confidence in using TensorFlow as a development tool, thereby reinforcing the department’s emphasis on experiential learning.

The even semester featured two important initiatives. The CSI Chapter Inauguration marked the beginning of structured student engagement under the umbrella of the Computer Society of India. Through this platform, students now have access to technical forums, national-level competitions, and skill-building events. The inauguration was more than ceremonial—it was a commitment to nurturing innovation and leadership within the student body.

In addition, a session on “NBA Readiness of the IoT Department” was conducted to raise awareness among faculty and students about the academic and operational benchmarks set by the National Board of Accreditation. The session provided insight into curriculum mapping, program outcomes, and continuous quality improvement, reinforcing the department’s alignment with outcome-based education (OBE). This also instilled in students a greater sense of ownership toward academic standards and the long-term vision of the department.

Collectively, these efforts throughout the year contributed to an enriched academic ecosystem—one that promotes both intellectual growth and professional preparedness among students.

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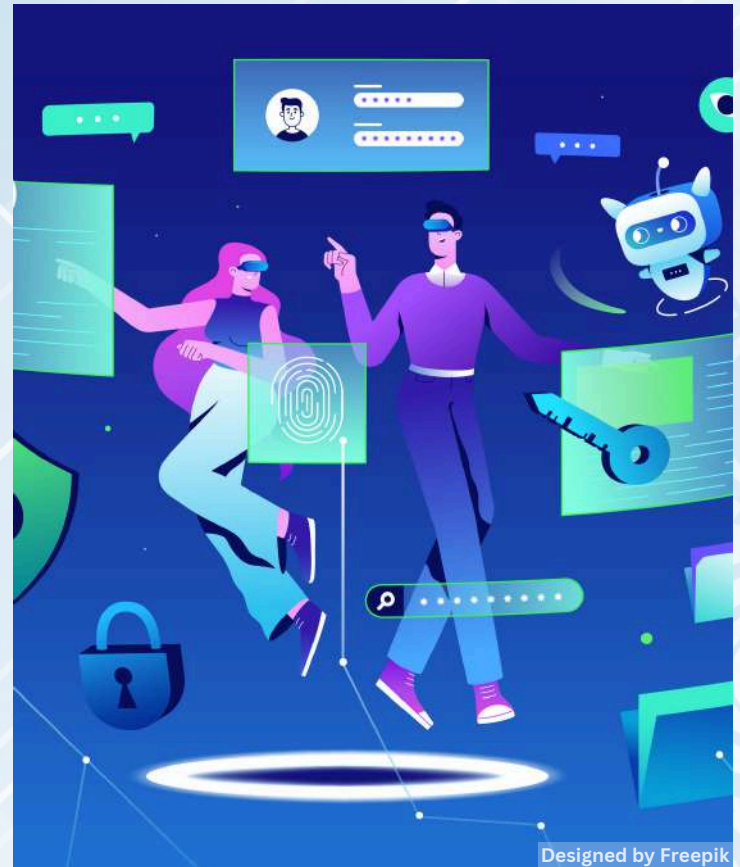
# CYBERSECURITY: THREATS, CHALLENGES AND SOLUTIONS

Amid the rise of an interconnected, digitally driven world and landscape comes a vulnerability that has taken central stage-cybersecurity. Advanced technology has been good for everyone as we get some of the best features from it, but on the flip side, they have also put nearly all people and entities at risk since there are far too many kind of cyber threats nowadays due to rapid evolution in tech so far. Protecting these assets and

our trust in the digital world requires recognition of what makes up those threats, an understanding that they are multi-layered (like peeling layers off onions), structured defences with some form of toothpaste ("letting it out"), etc.

There are many different types of cyber threats, and each one presents its own challenge to cybersecurity professionals across the world. Of all the base threats, ransomware remains one of the most inescapable. Ransomware - a type of malware that encrypts important data or systems and demands payment for the keys to decrypt it. Some recent events, like the attacks on Colonial Pipeline and JBS Foods have only served to underline what a devastating impact ransomware can have on critical infrastructure operations. To do so, organizations need to have sound backup strategies in place as well as quickly deploy security patches and ensure that employees understand what looks like phishing attempts (the dominant ransomware attack vector).

Another major challenge comes from phishing and social engineering tactics. They appeal to human nature, using trust and curiosity as points of vulnerability used for deceiving people into disclosing personal information or downloading malware.



ugh there have been advances in email filtering and threat detection technologies, phishing remains a pervasive problem affecting individuals as well as organizations of all sizes. Protecting against phishing is difficult and requires a mix of technology, such as email authentication protocols like DMARC in place should an employee open up that particular attack vector, along with continuous cyber security awareness training/initiatives. Data breaches are a great concern in their prevailing state of being a threat to the privacy, confidentiality and availability of information held by individuals as well as organizations. Cases of widespread data breach experienced at Equifax and Marriott show that there is need for strong measures to be adopted to protect data. It therefore means that there are various ways through which data can be protected from hackers or unauthorized persons. Additionally, compliance with these laws in place ensure that the risk of breaches is reduced by imposing severe conditions on how data should be handled.

Zero-day exploits are critical vulnerabilities unknown to developers, leaving systems exposed until patches are released. Delayed responses allow threat actors to exploit these flaws. To mitigate such risks, organizations should implement timely patch management, share threat intelligence, and conduct proactive vulnerability assessments. Insider threats, whether intentional or accidental can also compromise security. Countermeasures include monitoring employee activity, enforcing least privilege access, and providing continuous security awareness training.

Effective cybersecurity requires a comprehensive approach that combines modern technologies with proactive risk management and a strong culture of cyber-awareness. Endpoint Detection and Response (EDR) solutions and network security tools like firewalls, IDS/IPS, and secure access controls are crucial defenses.



As technologies evolve cloud computing, IoT, and AI, so do cyber threats. Organizations should adopt these preventive strategies:

- Phishing Defense: Use advanced email filters and protocols (SPF, DKIM, DMARC); train employees to spot threats.
- Data Protection: Encrypt data and apply least privilege access.
- Zero-Day Mitigation: Regularly assess vulnerabilities and patch systems.
- Insider Threats: Monitor user behavior and enforce strict access controls.
- Endpoint & Network Security: Deploy EDR, next-gen firewalls, and intrusion detection/prevention systems.

A proactive, multilayered cybersecurity strategy that includes technology, compliance, and awareness can significantly reduce risk and protect digital assets, fostering trust in the digital economy.

Mansi Dupte

TE IOT



# MY IDEA OF A SAFE AND PEACEFUL CYBERSPACE

In the 21st century, the world is evolving at a fast pace. Things are changing so quickly that sometimes we don't even understand what just happened, in front of us. The skills which are relevant today don't even exist the next day. Gen-Z is actively involved in the stream of technology, cyberspace, innovations, and experiments. This is leading us to multiple good destinations for a better and secure future, but it also has its negative perks that no one can avoid. Each of us is experiencing the negative side of these good happenings in our day-to-day lives. As we are available virtually everywhere, so our life is!

But while being everywhere virtually present we have to keep in mind that,

***"We have to take preventive measures to have a safe and peaceful virtual life."***

I do use multiple electronic devices to walk with the generation of technology which is used by the whole of humanity, I do take some conscious precautions to avoid certain things. These are the precautions I take for my safety to avoid cybercrime and to have safe cyberspace:

## ***1. Don't share your personal information online:***

In today's world, we easily share our personal information online with strangers, while talking to them. People who have our personal information try to harass us online, so being aware of what we are sharing with others on different apps is so important. In this virtual world, we tend to share our private data with strangers we never saw in reality. It's crucial to be conscious while sharing anything personal with anyone.

## **2. Always keep strong passwords and never share them, even with your closed ones:**

Cybercrimes are at their peak when it comes to hacking someone else's account.

Strong

passwords of more than 8 characters of different keys keep our account safe and not easily

accessible to any hacker. Sometimes we easily share our passwords with our close ones, which

is not good. We never know how someone can use our personal information to do something fraudulent.

## **3. Never use public wifi while accessing personal or financial data:**

Many times, while traveling we use public wifi to access our personal or financial data, this also leads to hacking our phones and using our personal and financial information illegally. Rather than using public WiFi, use a VPN (Virtual Private Network) connection. It secures your device information and does not share it with other sites or apps you access.

## **4. Turn off the services you don't need:**

We use Google Maps while traveling, but we forget to turn off the GPS (Global Positioning System) when it is of no use. Google Maps or any other location-tracking app keeps tracking our location and saves the data, which can be used by someone to create a mishap for us. So the right thing is to turn it off when it is of no use.

## **5. Be careful of what you are downloading on your device:**

We download various documents from different sites which are not even protect

The sites use malware and when we download the files from there the malware automatically comes to our system which damages our system and sometimes tracks our storage and shares it with a third party. The TikTok app which was banned by the Government of India used to track users' information and share the user's private information with a third party. The sharing of information was given in the terms of use in a confusing way which was revealed later.

## **6. Practice safe browsing:**

Some apps have different functions of their own but still ask to access and manage our phone logs, gallery photos, messages, etc. It is significant to be aware of such permissions while giving them to those apps. Even some websites use cookies for functioning, when we open that website a pop-up message immediately asks us to accept those cookies. Accept cookies only if the IP (Internet Protocol) address of that website shows a symbol of a lock which means it is secured. Never give permissions to a website who have only 'http'.

## **7. Always have an Antivirus on your device and keep them updated:**

Antivirus software protects our devices from harmful viruses and malware which you use continuously for different reasons. These are some of the practices I follow while browsing the internet. I hope you will follow them too.

***Have a happy and safe cyberspace!***



# CRIMES UNDER TALENT

Does my title sound weird? Let me explain. I'm talking about "Cyber Crimes"—a space where talent is key. Hacking a phone, computer, or even a billionaire's system isn't easy, yet these "talented" criminals dive in like it's a game. Some crimes happen by accident, some are forced, and some come from dark intentions. Cyber crimes often result from lack of awareness and education. These are taught, well-planned crimes by trained individuals.



By Adobe Stock

Recently, a Hollywood-dubbed movie Heart of Stone was released on OTT. It's about an intelligence operator protecting a mysterious AI system, where virtual war needs deep AI and cyber knowledge. Billions of dollars are spent each year recovering from cyber threats. Teenagers easily fall victim while playing online games. They're targeted through phishing and hacking, often leading to money demands. Many teens cross into cybercrime unknowingly. In episode 112 of Darknet Diaries, a teen named Drew shares how he started by running a discounted game server, then moved to selling stolen usernames.

Cybercrime in India has recently increased by 24.6%. As future cybersecurity graduates, we must protect our country and spread awareness. We can collaborate with MNCs to guide and educate the public. An article by Jennifer Gregory on cybersecurity and IoT inspired me. She says: "Cyber-crimes happen not because we can't protect our systems, but because criminals are more talented than us. So to beat them wake up, grow up, and learn every day!" We must excel in life and stay aware. As Richard Clarke says: "If you spend more on coffee than IT security, you will be hacked soon." Think on it and be aware of the new day!



# SECURING IOT WITH BLOCK- CHAIN

As interconnected devices become part of daily life, the Internet of Things (IoT) is transforming how we interact with the world from smart homes to industrial systems. But with this growth comes a major challenge: security. Blockchain offers innovative solutions to improve the reliability, security, and efficiency of IoT systems.



## Understanding IoT and Its Challenges:

IoT is a network of physical objects embedded with sensors and software to exchange data over the internet—ranging from household gadgets to industrial equipment.

Key challenges include:

**Security** - More devices mean greater risk of cyberattacks.

**Scalability** - Managing massive data from many devices is complex.

**Interoperability** - Seamless communication across different platforms is essential.

**Enter Blockchain**

Blockchain, a decentralized ledger, records transactions across many computers, making data tamper-proof. This suits IoT needs perfectly.

**Enhanced Security** - No central point of failure. Encrypted, linked transactions create a secure data chain that's hard to hack.

**Interoperability** - Blockchain provides a common framework for data exchange, standardizing communication between diverse IoT devices.

**Real-World Applications**

Blockchain and IoT are already working together in:

- **Supply Chains** - Tracking products to ensure authenticity and reduce fraud.
- **Smart Cities** - Managing infrastructure like energy and transport more efficiently.
- **Healthcare** - Securing patient data with blockchain-enabled IoT devices.
- **Agriculture** - Using sensors and blockchain to monitor crops and improve supply chains.



By Adobe Stock

# SOCIAL MEDIA ACCOUNTS GETTING HACKED: WANT TO KNOW HOW?

Social media is a key part of our lives. We share thoughts, photos, and personal info on platforms like Facebook, Instagram, Twitter, and LinkedIn. But this also makes them prime targets for hackers. Knowing how accounts get hacked and how to protect them is essential for online security.

## Common Methods of Social Media Hacking:

- **Phishing Attacks:** Hackers trick users into revealing login details by posing as legitimate services. Fake login pages capture your credentials after clicking suspicious links.
- **Credential Stuffing:** If you reuse passwords across sites, hackers can use stolen credentials from past breaches to access your social media accounts.
- **Malware:** Malware installed unknowingly can record keystrokes or steal data. It spreads via phishing emails, malicious sites, or infected apps.
- **Weak Passwords:** Simple passwords like "123456" or "qwerty" can be easily cracked using brute force tools.

- **Social Engineering:** Hackers manipulate victims into giving up confidential info often by pretending to be someone they trust or by answering security questions based on public info.
- **Third-Party Apps and Permissions:** Some third-party apps can be vulnerable or ask for excessive access, which hackers can exploit.

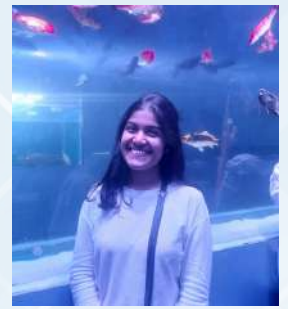
### How to Protect Your Social Media Accounts

- **Enable Two-Factor Authentication (2FA):** 2FA adds a crucial layer of security by requiring a second verification step like a code sent to your phone alongside your password. Even if someone steals your credentials, they can't log in without that second factor.
- **Use Strong, Unique Passwords:** Avoid common or predictable passwords. Use a mix of uppercase, lowercase, numbers, and special characters. Each account should have a unique password to limit exposure if one is compromised. A password manager can help generate and store strong passwords securely.
- **Be Cautious of Phishing Attempts:** Don't trust emails or messages asking for personal information. Always verify URLs by hovering over links and avoid logging in through email links. If unsure, visit the site directly by typing its address into your browser.
- **Keep Software Updated:** Security patches in software updates protect you from newly discovered threats. Keep your operating system, browsers, antivirus, and apps up to date to close loopholes hackers might exploit.



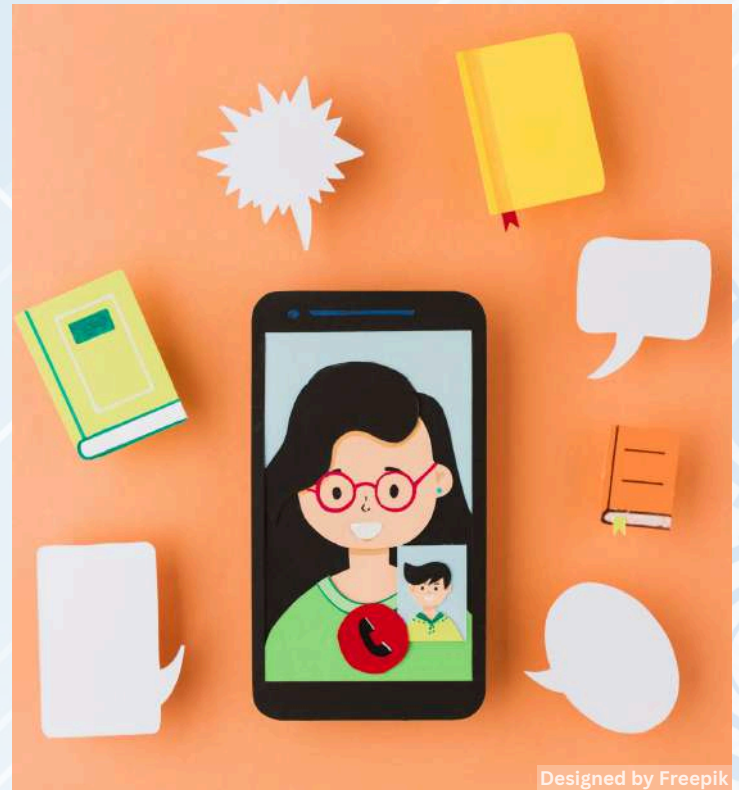
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- **Review App Permissions:** Connected apps may request access to your profile, posts, or contacts. Periodically review these permissions in your account settings and remove apps you no longer use or trust.
- **Monitor Account Activity:** Most platforms show recent logins and devices. Review this regularly to spot unauthorized access. Unfamiliar activity is a red flag take immediate action by changing your password and checking your linked apps.
- **Educate Yourself on Social Engineering Tactics:** Social engineering relies on tricking people rather than breaking systems. Learn how hackers manipulate trust to extract data. Don't share login info, security answers, or verification codes with anyone even those who seem familiar.



## ROLE OF SOCIAL MEDIA IN EDUCATION

Social media is not a monologue, it's a dialogue that is a conversation between two people". In today's digital era, we can see many educational institutions adapting social media developments into their systems to improve students' lives. The use of social media in education enables students, teachers, and parents to get helpful information easily, connect with other learning groups, and understand other educational systems. And all these are reasons why social media plays a key role in making education convenient these days. Social media is not just limited to posting pictures about holidays online. Social media has gained credibility over the years as a reliable source of information and platform where organization's can interact with audiences. Social network tools approve students and institutions with multiple opportunities to improve learning methods. Through these networks, you can incorporate social media plugins that enable sharing and interaction. Students can benefit from online tutorials through YouTube, online courses delivered by universities abroad through Skype and a wide array of resources that are shared through social networks. Classroom learning is a one-way transfer of knowledge, but educational content on social media facilitates active learning. It allows students to engage with others, have long discussions, and solve quizzes online. Social media exposes them to content and people which makes the process of learning more fun and interesting. Being able to move beyond traditional learning methods, and absorb information in a more relevant way ensures a better understanding of a particular subject. Instead of passively sitting through a lecture, students actively participate and interact with their study materials when it is available on social media. Connecting Beyond Classrooms which means When you are learning in a classroom, information



you are receiving and the people you are interacting with is very limited. Including social media in education allows you to attend online lectures, participate in discussions, have enlightening conversations, and gather knowledge.

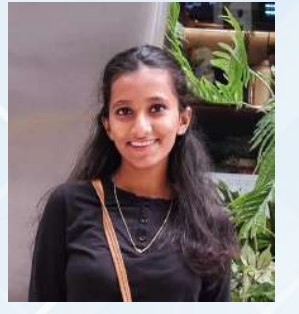
It allows you to connect with people worldwide. Digital advancement has made it possible to attend video conferences from any corner of the world. To gain better knowledge, it is encouraged to connect beyond classrooms made possible by social media. Instead of writing in a student's diary or notebook, institutions can create separate groups or online forums for parents and guardians. This facilitates conversations about news, events, and assignments that may have been overlooked. Focusing on nurturing community and publishing engaging content can help increase enrollment. According to our Higher Education Social Media Benchmarks 2023 report, 41% of school officials directly attribute increased enrollment to social strategy. However, social media is also criticized for affecting how students gain and retain information. Yet, it offers many opportunities for interaction and learning. It serves as a high-quality online knowledge platform for students, giving them new ways to share content enjoyably and interestingly. From elementary school to university, social media empowers parents, students, and teachers to share information and build a community.

What's extraordinary is that while some students use social networks for entertainment, many use them to promote positive activities finding internships,



sharing success stories, or collaborating on international projects. Social media supports professional development as teachers become learners, enhancing knowledge transfer, skill-building, and collaboration. A 2010 study found increased social media use positively impacted student communication

Studies in 2015 showed no negative effects. Blogs are useful classroom tools. Students can link them to LinkedIn sharing visual essays to attract recruiters. Blog projects improve writing and critical thinking. On Instagram, students share visuals through class accounts ideal for courses like photojournalism or marketing. "I like social media in the classroom to connect my students globally," says Irene Bal, educational tech lecturer. Overall, social media plays a vital role in education. "When a person chooses to learn, they can change the world." Trust the process SOCIAL MEDIA is a powerful tool for gaining knowledge.



## ON THE EDGE OF SAHYADRIS

असं बऱ्याच पुणेकरांकडून ँकलं आहे की सहाद्रीचे बरेच ट्रेक केले असून पण हरिश्चंद्रगड केला नसेल तर ट्रेकिंगला काही अर्थ उरत नाही. सहाद्रीची श्रीमंती ँवढी अफाट आहे की माणसाला गरिबीची जाणीव सुद्धा होणार नाही. सहाद्रीच रांगडं रूप अनुभवताना मनाला धन्य वाटतं. आणि इथे पैशाची नाही तर शरीराची श्रीमंती हवी असते. जेवढी शरीराची श्रीमंती खर्च कराल तेवढी दुपटीने तो परत करतो. ज्यांना नयन रम्य दृश्य पाहायला आवडत असतील त्यांनी हरिश्चंद्रगड नक्कीच सर करावा. तुम्हाला सुखद अनुभव आल्याशिवाय राहणार नाही. भव्य दिव्य कोकणकडा पाहून तर डोळ्यांचं पारणं फिटत.

महाराष्ट्रातील सहाव्या क्रमांकाचा सर्वोच्च शिखर तारामती सर केल्याचा आनंद आणि तेथून दिसणारे सहाद्रीचे रांगडे रूप, सुरुवात, मध्य आणि अंत असा पूर्ण लांबीचा माळशेज घाट तारामती शिखरावरून पहावयास मिळतो.

माझी मैत्रीण समृद्धी तिच्याकडून मला या ट्रेक बदल पहिल्यांदा कळलं. जेव्हा याविषयी समजलं तेव्हा मनात उत्साहाच्या ँवजी भीती दाटून आली. माझा नसला तरी

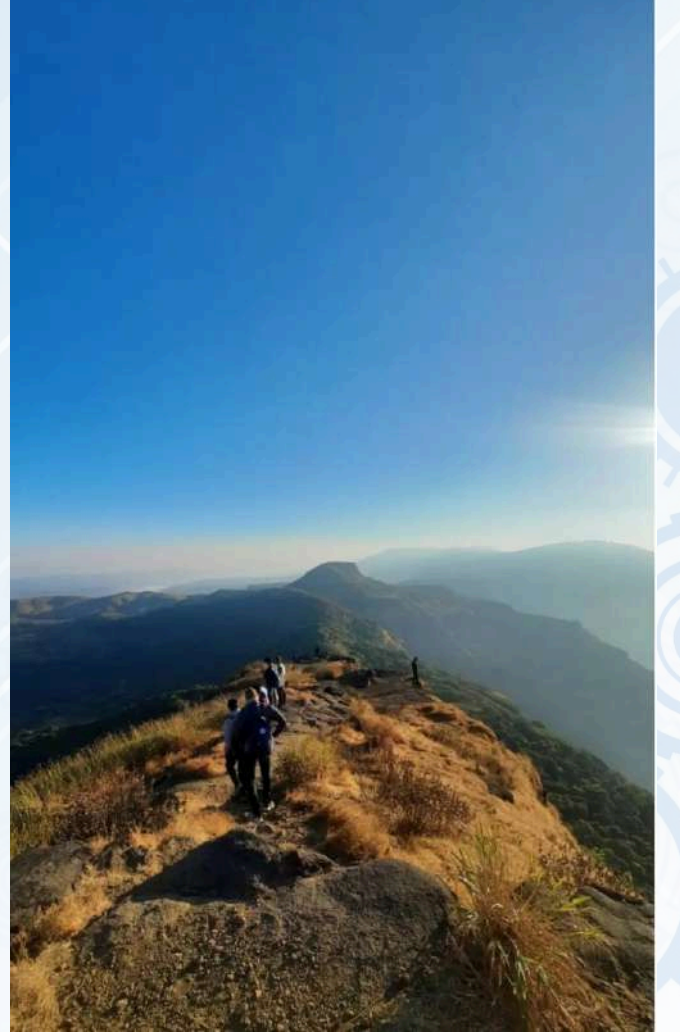
माझ्या आईचा संपूर्ण विश्वास होता की मी ट्रेकिंग करू शकत नाही. मला सुद्धा तिचं हे विधान चुकीचं वाटत नव्हतं मी याआधी कधीही कोणताही गड, पर्वत सर केला नव्हता त्यामुळे जे कधीही जमलच नाही किंवा आग्रहाने जिद्दीने जमवण्याचा प्रयत्न केला नाही त्या आवाहनाला मी लगेच कसं स्वीकारू??

मी नाही म्हणण्याच्या तयारीत असताना काय झालं कोणास ठाऊक पण शेवटच्या क्षणाला मी जाण्यासाठी तयार झाले. ट्रेकला निघण्यापूर्वीची रात्र उद्याची चिंता करण्यात कधी संपली लक्षात आलंच नाही. आईच्या लांब लचक सूचना पचवून चार साडेचारला मी निघाले.

कल्याण स्टेशनला उतरून बस मध्ये चढून १०च्या सुमारास आम्ही माळशेजला पोहोचलो. तिथून आम्ही खिरेश्वर कडे लोकल जिपने निघालो आणि सकाळी साडे अकराला आम्ही ट्रेक चालू केला. बारा-पंधरा किलोमीटर हा माझ्यासाठी खूप मोठा प्रवास होता

ट्रेक प्रणाल चव्हाण आणि अथर्व बुरलीकर यांच्या नेतृत्वाखाली झाला. हा ट्रेक सोपा नाही, कारण मार्गात ६० ते ७० अंशाचा तीव्र उतार असलेले खडे असून, चढाईसाठी सुमारे ३० ते ४० मिनिटे लागतात.

माझ्या मागे पुढे जवळपास 60 70 जण चालत होते. प्रत्येकाचा दहा ते बारा जणांचा असा ँक वेगळा गुप होता. इंजीनियरिंगचे first year असल्यामुळे त्यातले अर्ध्याहून अधिक चेहरे मला अनोळखी होते. माझ्यासोबत माझ्याच बॅचचे वैष्णवी, ऋशिकेश आणि अमेय होते. तर second year चे सलोनी आणि संजना अशा दोन मुली होत्या. सोबत अजून तीन जण होती.



आम्ही सगळे रात्रीचे जेवण, दुसऱ्या दिवशी सकाळचा नाश्ता गडावरच करणार होतो. इतक्या जणांची पोटापाण्याची व्यवस्था करण्यासाठी प्रणालीने प्रत्येक जण थोडा थोडा भार उचलेल असे ठरवले होते. एकट्याने काहीच होऊ शकत नाही, पण एकत्र आलो तर चमत्कार घडवू शकतो.

आम्ही सगळे एका रस्त्याने एका ध्येयाला अनुसरून भर उन्हात चालायला सुरुवात केली. ट्रेक चालू असताना कोणी चालून चालून बसत होतं तर, कोणी कितीतरी वेळ बसूनच होतं. पायथ्याच्या आजूबाजूचा परिसर नयनरम्य नसला तरीही ती सुकत चाललेली हिरवळ मनाला दिलासा देत होती. ऊन पाऊस वादळ वारे यांच्या अधीन असलेली झाड कधीच नैराशाने हात टेकत नाहीत कारण त्यांचा निसर्गावर 100% विश्वास असतो. डोक्यावरचे ऊन पाठीवरचं बोचक यामुळे प्रवास खडतर बनला होता त्यात पायाखालची वाट अनोळखी स्वतःच्याच विश्वात मग्न असलेले दगड गोटे कधी टोचत होते तर कधी चढण्याच्या वळणावर हळूच कोणाच्या डोक्यावर बसत होते. असं करत करत आम्ही अर्धा डोंगर पार केला. कोणत्या वाटेने जायचं हा प्रश्न निर्माण झाल्यामुळे... काही जण कोणती वाट कोणती आहे हे शोधण्यासाठी गेले. त्यानंतर आम्ही एका ठिकाणी बसून थोडं रिलॅक्स होऊन थोड्या गप्पागोष्टी केल्या. व फोटोची हौस मौज करून घेतली.

त्यानंतर आमच्यातलाच एक ग्रुप पुढे गेला अशी खबर आम्हाला मिळाली. त्यामुळे आम्ही लगेच तिथून पुढच्या दिशेकडे वाटचाल केली. ऋषिकेशचा उत्साह आमची जिद्द आणि आम्ही थोड्याच वेळात पोहोचणार या आनंदामुळे ट्रेक अजून आकर्षक वाटायला लागला होता. आणि काही वेळ थोडा खडतर प्रवास करून आम्ही हरिश्चंद्रेश्वर मंदिराच्या दारातील कुंडाच्या ठिकाणी पोहोचलो. तेथे पाण्यात पाय टाकून बसलो व तेवढ्यात दुसरा ग्रुप तेथे आला आणि आम्ही सर्व मिळून कोकणकड्याच्या दिशेने जायला सुरुवात केली व तिथे जाऊन कॅम्पसाठी जागा शोधून, प्रणालीच्या सूचनेनुसार आम्ही टेन्ट लावले. रात्रीच्या जेवणासाठी लाकडं गोळा केली व पाण्याची व्यवस्था करून ठेवली. तोपर्यंत साडेपाच झाले होते सगळेजण हळूहळू वर येत होते व सगळे जमल्यावर आम्ही कोकणकड्याकडे जायला निघालो. कड्यावरचे ते दृश्य मनाला एक वेगळाच आनंद देत होते. तिथे जाऊन आम्ही शिवगर्जना केली. तिथून परत येऊन पुढच्या कामांना लागलो. काहीजण त्यांचा थकवा दूर करत होते तर काहीजण सगळ्यांच्या जेवणाची व्यवस्था करण्यात व्यस्त होते. तर काहीनी शेकोटी पेटवून चांदण्यांच्या खाली बसले होते. तर आम्ही कोकण कड्यावर बसून मस्तपैकी वारा अंगावर घेत, चांदण्यात बसून तेथील वातावरणाचा अनुभव घेत होतो. प्रचंड थंडी आणि लाकडांची कमतरता यामुळे जेवणाला थोडा उशीर झाला. पुलाव, लोणचं, पापड असा आमचा त्या दिवशीचा जेवणाचा मेन्यू होता. जेवण झाल्यावर गाण्यांची मैफिल रंगली होती.

सगळे शेकोटीच्या भोवती बसून चांदण्यांच्या खाली गाणी गात होते. वाढत्या थंडीनीशी सगळ्यांनी आपापल्या तंबूमध्ये धावा घेतली. डिसेंबरचा महिना असल्याने थंडी होती. पाय थरथर कापत होते. त्या रात्री काही केल्या झोप लागली नाही. सकाळी साडेचारला उठून सगळी आवराआवर करून आम्ही काळ्याकुट्ट अंधारात तारामतीच्या टोकावर सूर्योदय पाहण्यासाठी निघालो. एका गावातून जाणाऱ्या वाटेने आम्ही तारामती शिखराकडे निघालो. आणि डोळ्याचे पारणे फिटेल असं दृश्य तारामतीच्या टोकावरून आम्हाला अनुभवता आलं. वरती चढतानाची वाट खूप खडतर होती. उद्धव दादा, शंतनु यांच्या मदतीने मी वर पोहोचले तेथून दिसणारा सूर्योदय थकवा दूर करणारा होता. मला शिखर सर केल्याचा आनंद मिळत होता तर डोळ्यांना सूर्योदय पाहण्याचा आनंद त्यानंतर आम्ही पुन्हा बेस कॅम्पकडे निघालो. तिथे चहा नाश्ता करून आम्ही परतीच्या प्रवासाला सुरुवात केली. मला मी इतक्या कमी वेळात कोकणकड्यापर्यंत जाऊन पोहोचले या गोष्टीवर विश्वासच बसत नव्हता दोन दिवस, ३० किलोमीटर्स पेक्षा जास्त चालणे, सर्व सिमकार्ड्स आऊट ऑफ कव्हेरेज असताना, स्वतः ला स्वतःची ओळख करून देणारा वेळ... गडवाटा स्वच्छ करायचा प्रयत्न, उन्हवारा झेलत, नवीन अनुभव देत, सपाट जमीन, जंगल, दगडं यातून वाट काढत केलेला हा अविस्मरणीय गडप्रवास...! 🏔️🏰 कुणीतरी म्हंटले आहे की

प्रत्येक शर्यतीत एक क्षण असा येतो, जिथे तुम्ही हार मानू शकता, मागे हटू शकता, किंवा स्वतःला म्हणू शकता, "मी हे करू शकतो." आणि अशा विचारानेच तुम्ही पुढे जात राहता...



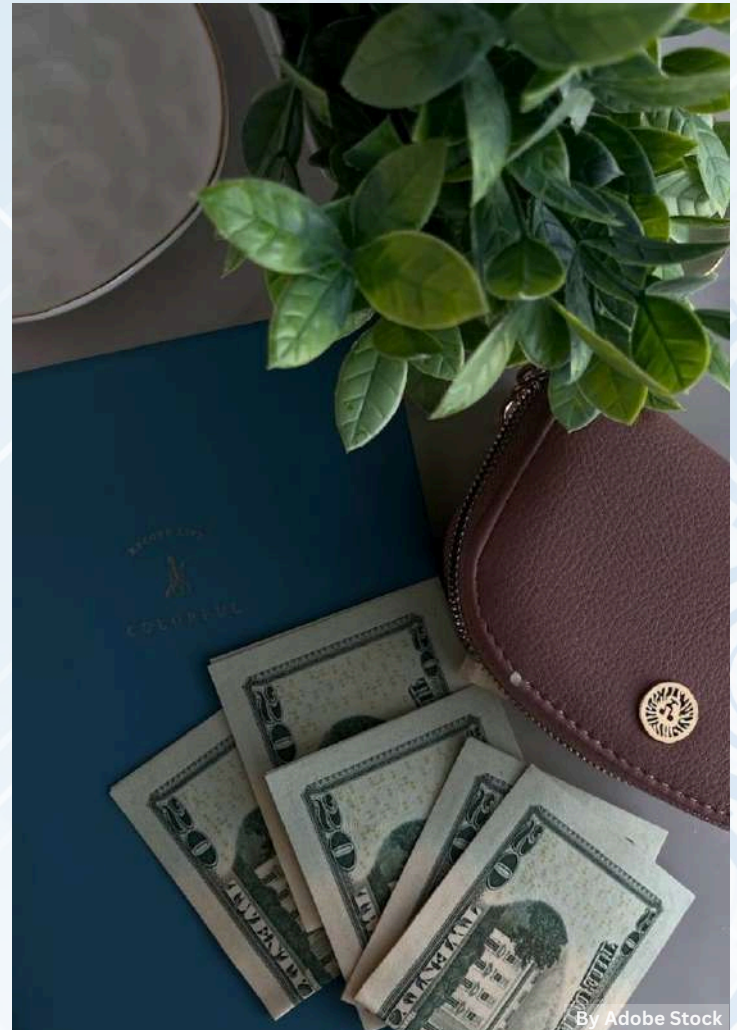
# MONEY MATTERS: YOUR ESSENTIAL GUIDE TO FINANCIAL LITERACY

## *Inflation erodes purchasing power:*

Over time, inflation decreases the value of money, meaning that the same amount of money will buy fewer goods and services. As of May 2024, India's inflation rate stands at 4.7%, according to recent data

## *Lusardi and Mitchell (2014):*

This study found that individuals with low financial literacy are less likely to understand inflation and its impact on purchasing power. As a result, they are more vulnerable to poor financial decisions, such as inadequate retirement planning and ineffective investment choices. This lack of knowledge can result in financial behaviours that exacerbate the adverse effects of inflation, such as accumulating high-interest debt or failing to adjust savings strategies. This leads to a decreased ability to maintain their living standards over time.



## *Why should I invest?*

There are a few compelling reasons -

1. Fight Inflation - By investing, one can deal better with the inevitable reality of life - the growing cost of living - generally referred to as Inflation.
2. Create Wealth - By investing, one can build a bigger corpus by the end of the target period. In the above example, the period was up to retirement, but it can be anything - children's education, marriage, house purchase, retirement holidays, etc
3. Better life - To meet life's financial aspirations.

## ***Where to invest?***

Having figured out the reasons to invest, the next obvious question is - where would one invest, and what return can one expect with investing? When investing, one has to choose an asset class that suits the individual's risk and returns profile. For example, one individual will be open to taking a lot of risk with his or her money, while another may want to take moderate risk, while another would want zero risk.

### **1.Fixed income instruments**

- Bank's Fixed deposits
- Bonds issued by the Government of India (also called G Sec bonds and T Bills)
- Bonds issued by Government related agencies such as GAIL, HUDCO, NHAI, etc
- Bonds issued by corporate's (Tata, Bajaj, Reliance, Adani)

### **2.Equity**

Investment in Equities involves buying shares of publicly listed companies. The shares are traded on the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE).

### **3.Real estate**

Real Estate Investment involves transacting (buying and selling) commercial and non-commercial land.

### **4.Commodities (precious metals)**

Gold and silver are considered one of the most popular investment options. Gold and silver, over the long term, have appreciated.



### ***Things to note before investing***

Investing is an integral part of financial planning, but before you start your investment journey, it is good to be aware of the following -

1.Risk and Return go hand in hand. The higher the risk, the higher the return. The lower the risk, the lower the return.

2.Investment in fixed income is a good option if you want to protect your principal amount. It is relatively less risky. However, you have the risk of losing money when you adjust the inflation return. Example - A fixed deposit that gives you 9% when the inflation is 10% means you lose a net of 1% per annum. Alternatively, the risk increases if you invest in a corporate fixed-income instrument.



# LEADERSHIP IN COLLEGE: A SKILL THAT IS OFTEN OVERLOOKED

College is much more than just attending classes and earning a degree; it's also about developing the skills needed to be successful in the workplace and in life. One such skill, often overlooked, is leadership. Many characteristics of a great leader—such as confidence, communication, teamwork, and problem-solving abilities—are best developed before entering the professional world. This is because college offers a unique environment where there is no pressure to succeed, and you have the freedom to plan, execute, and even fail.

Here are four things I was able to build solely because I was involved in activities at college that helped me hone my leadership skills:

## **Build Confidence**

You will never succeed as a leader unless you have a strong belief in yourself and your abilities. Join societies, groups, committees, and clubs. Leadership is fundamentally about people—the more you understand them, the better you can lead them.

Being a member of these groups will provide you with the opportunity to lead others, and as you progress to an active role, you will find yourself in situations where you must make difficult decisions. Leadership does not come solely from reading books, watching videos, or reading articles. It's about getting to know people and guiding them in the right direction.

### **Discovering Yourself**

Leaders are often placed in situations where they must handle tasks they've never encountered before. It may feel awkward at first to do something you've never done—or even imagined doing—but it can be immensely rewarding to discover new talents that you can carry into your professional future.

### **Speak Up**

College provides multiple opportunities to practice public speaking. When you're on stage, remember that every time you make a mistake, your experience grows. Consider this: every time people clap, your experience score increases, and your experience score also increases when you're laughed at. Engaging with new people and attending various events enhances your communication skills and charisma, which are essential qualities in a leader.

### **Build Your Resume**

How do you stand out among the one million engineering students who graduate every year from India? It's crucial to have a diverse profile. Leadership experience in college allows you to demonstrate to potential future employers that you offer more than just a degree.



Most firms are looking to hire individuals who have the potential to grow into managerial roles. By showcasing your leadership experience gained in college, you have a better chance of making a strong impression during interviews.

Overall, while leadership might be an often-overlooked aspect of college life, actively developing it can greatly benefit your future career and personal growth. By taking advantage of the opportunities college offers, you can build a strong foundation of leadership skills that will serve you well throughout your professional journey.



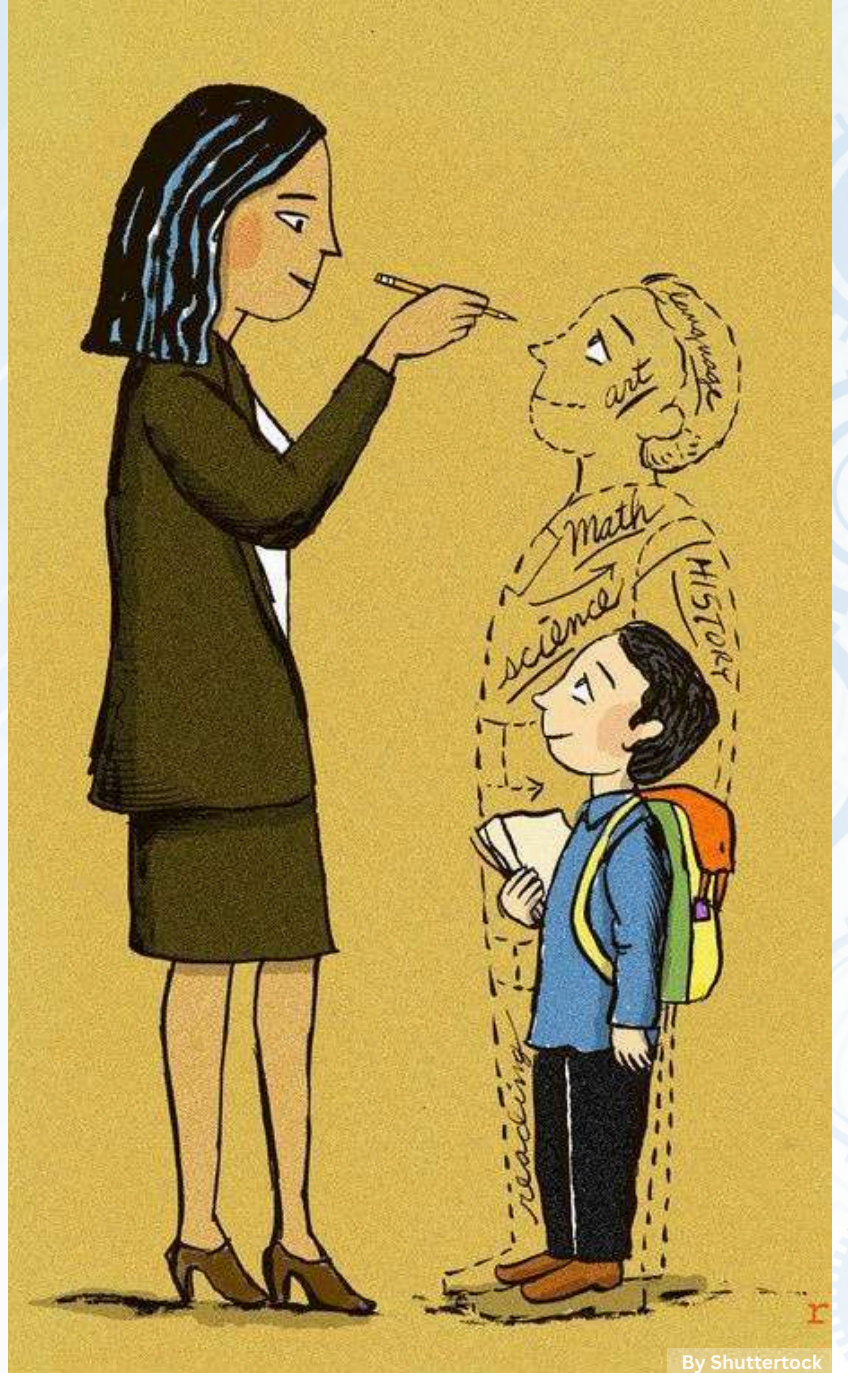
## TO DEAR TEACHERS

जलते है आप दिये की तराह,  
और रोशन हमे कर जाते हे,  
कुछ इस तराह से teacher हमे ,  
एक सच्ची राह दिखाते हे।

हर परेशानी में हर मुश्किल में,  
जीना हमे सिखाते हे,  
खुद अपने घरों को भूल के भी,  
परिवार हमे बनाते है।

आराम सुकून को छोड कर ,  
वोह अपना फर्ज निभाते हे,  
में fail ना हो जाऊं इस डर मे,  
वो दुग्री मुझे पढाते हे।

जलते है आप दिये की तराह,  
और रोशन हमे कर जाते हे,  
कुछ इस तराह गुरु हमारे,  
जीवन को सफल बनाते है।



By Shutterstock



# LETTER TO MUMBAI LOCAL TRAIN

Dear local train,

Ohh my god!!! The Heartbeat of Mumbai...  
I know you are quite Busy but need your  
Some Time so please "Ruko Jara Sabar  
Karo"

From where Should I Start to talk...

I have The List Of Topics.. Okay Fine I will  
Start With your Favorite One..

You know you live In our Hearts.. You are  
Soul of Mumbai.You are the Best Friend of  
Everyone Who Travels with you..

You are The solution of every Problem.. Without you Mumbaikar's Can't even Imagine  
There Day to day Life.. You Are Important as much as A Mother Is For Her Child ❤️

You are a Happy place for them who travels with you Daily.. You are the Source of  
Taking the Employees on Time in this Heavy Traffic metro City.. You are the Solution  
for students to reach their Temple of Education.. You are the Bodyguard of every Girl,  
women who wants to chase her dreams... You are Office of people who can't be Able to  
go to office... You are that Ride of the Tourist Who want to Explore this City if Dreams...  
And At Last You Are Everything for Everyone But Don't be So happy.. I have Bad  
Complains about you..

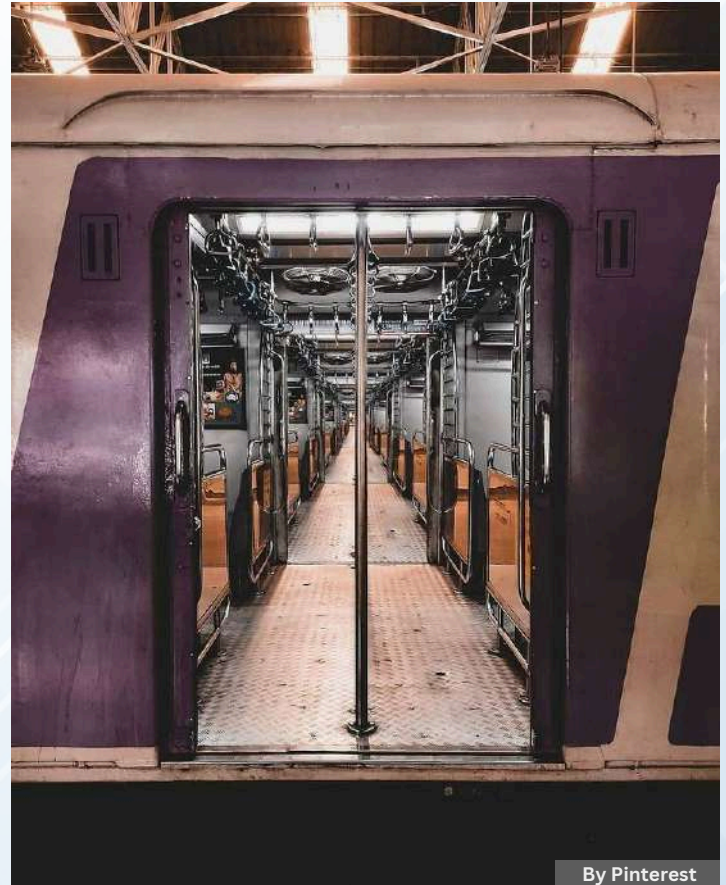
Okay.. Let Me Know Why Are You Always In Rush.. Can't Be Stable?? I know the Fact  
that population is Increasing But then Increase your Size.. It's Not Safe of Being in  
Rush..

And One More, Sometimes you are So Late that We Can't reach On time..

We Travel with you Just To save Our time then How Could you be So Unpredictable..

And Your Megablocks.. For God Sake Don't tell me That You love It because we Hate It  
on Sundays.. You know that Very well that We Need to go somewhere at least On  
Weekend then Why you choose Sunday For this..

Just talk to you Superior and Change it 🙏



By Pinterest

Just Kidding.. I think you are right you Also need the rest on weekends after your Hectic Week dedicated to us..

So no Need To change your Schedule. . Just Be As You are!!

And Thank you So Much for being My Best travel Partner In This New City Of Dreams ❤️  
See You very Soon.. Till Then continue with your noble profession..

Yours Lovingly,  
Vaishnavi ❤️

# YATRI KRIPYA DHYAN DE



## LOCAL TRAIN

LIFELINE OF THE CITY

By Shutterstock



# TRAVEL DIARIES-

# VARANASI

## Varanasi: The Eternal City on the Banks of the Ganga

Varanasi, also known as Kashi or Banaras, is one of the world's oldest continuously inhabited cities and holds immense spiritual significance in India. Located on the banks of the holy River Ganga, it is revered as the spiritual capital of the country, where life and death are deeply intertwined in rituals, faith, and tradition.

The city is famous for its ghats—especially Dashashwamedh, Manikarnika, and Assi Ghat—where pilgrims gather daily for sacred dips and mesmerizing Ganga Aarti ceremonies that light up the night sky with fire, chants, and devotion. Kashi Vishwanath Temple, dedicated to Lord Shiva, is one of the twelve Jyotirlingas and a must-visit for devotees.

Varanasi is a hub of classical music, dance, and education, with institutions like Banaras Hindu University (BHU) enriching its academic legacy. The narrow lanes are alive with artisans creating Banarasi silk sarees, renowned globally for their intricate designs.

The food is a delightful experience—savor the iconic kachaudi sabzi, tamatar chaat, banarasi paan, and of course, the rich and creamy malaiyyo in winters.

From vibrant festivals like Dev Deepawali to tranquil boat rides on the Ganga at sunrise, Varanasi is a soulful blend of spirituality, heritage, and culture—a city where time slows down, and the divine feels near.

# stories in बनारस



## DISCOVER YOUR INNER STRENGTH

*Discovering your inner strength is a powerful journey that often involves self-reflection, resilience, and growth.*



सी जं.  
ASI JN.  
وارانسی



Aarya Sawant

TE IOT



**SAILING THE SWIRL OF DREAMS**



Rashmeet Kaur  
SE IOT



**BARBENHEIMER**



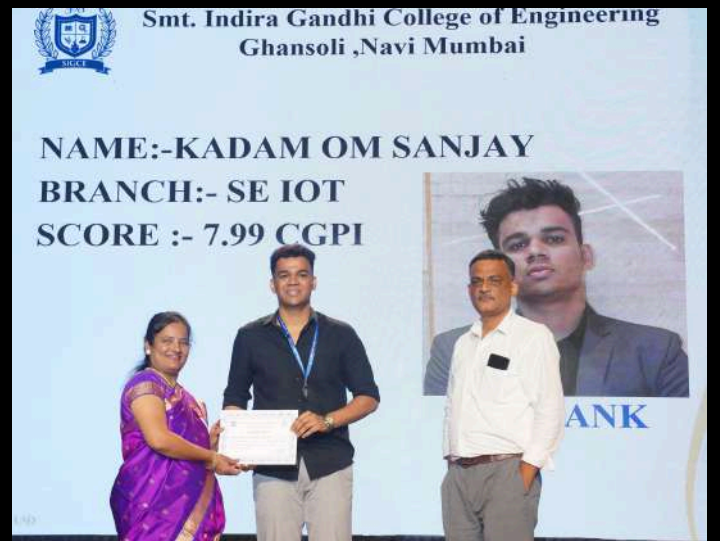
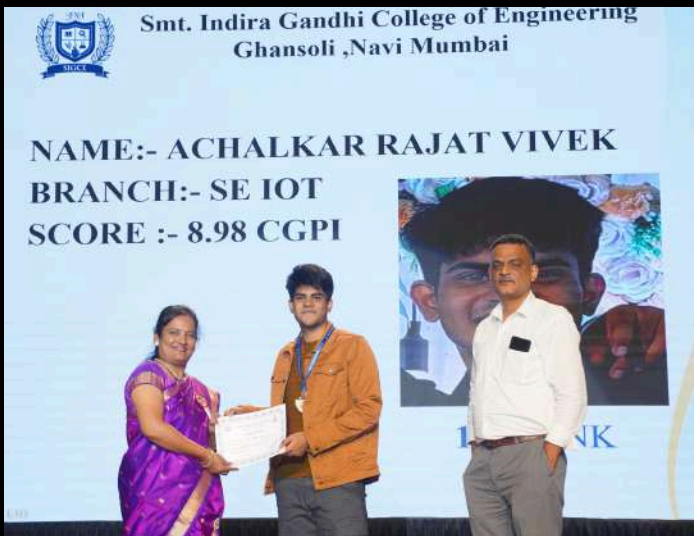
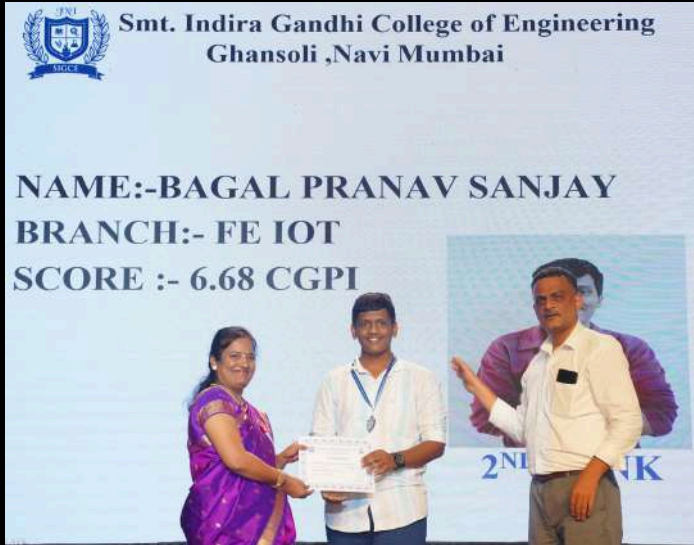
# SANGRAM 2023-2024



# IGNITE 2023-2024



# ACHIVERS 2023-2024

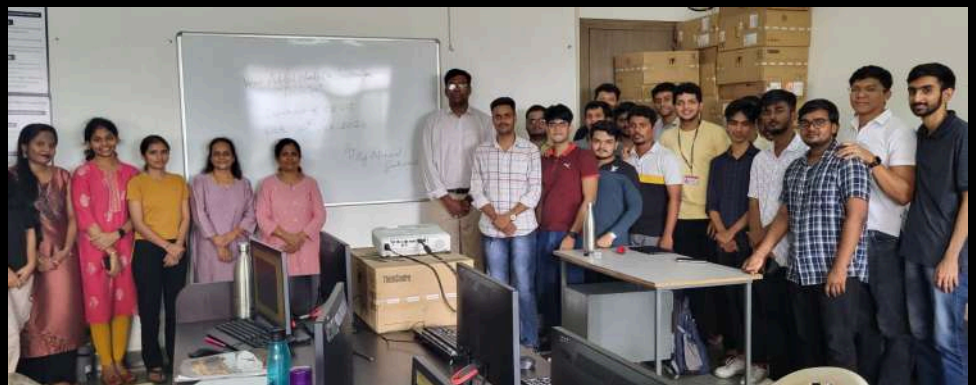


# EVENTS 2023-2024



Git Get-Together to introduce students to Git and GitHub. It included interactive sessions focused on collaborative coding.

Intro to TensorFlow session to help students explore the basics of machine learning and deep learning frameworks..



National Level Poster Competition, inviting creative ideas from students across the country. The event saw enthusiastic participation and showcased innovation through art and technology.

# OUR FACULTY



## Meet Our Esteemed Faculty

The Department of IoT & CSBC is led by our dedicated Head of Department, Dr. Madhu Nashipudimath, whose guidance and vision continue to inspire academic excellence and innovation.

Our dynamic team of faculty members includes:

Dr. Umakant Gohatre, Prof. Sarita Bopalkar, Prof. Aasha Kantekar, Prof. Nirosha Uppu, Prof. Archana Khelurkar, Prof. Smita Wadekar, and Prof. Deepali Pawar—each bringing unique expertise and commitment to nurturing future tech leaders.

Supporting the department with their efficiency and dedication are our non-teaching staff members: Varsha Ma'am and Pachpande Sir, who play a vital role in our everyday functioning.

Together, this team forms the backbone of our department, fostering an environment of knowledge, curiosity, and growth.

# OUR PATRONS



A magazine is more than just a collection of pages, it is a reflection of shared vision, creativity, collaboration, and unwavering support. As we present this edition of our departmental magazine, we take this moment to express our heartfelt gratitude to all those who stood behind its successful creation.

We extend our sincere thanks to our respected HOD, faculty members, coordinators, editorial team, student volunteers, and every contributor who played a role—big or small—in making this magazine a reality. Your insights, technical inputs, design ideas, written contributions, and behind-the-scenes efforts have added great value to the content and presentation of this publication. This magazine is a testimony to what can be achieved when talent meets teamwork. The diverse contributions seen in these pages represent the spirit of the IoT department innovative, collaborative, and forward-looking. Each article, activity, and image reflects not only knowledge but also the passion and dedication of those who worked on it.

Thank you for being a part of this journey and helping us make this edition both meaningful and memorable!

# OUR PATRONS

## *Faculty Coordinators:*

Dr.Madhu Nashipudinath  
Prof.Archana Khelurkar

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Vaishnavi Lahoti  
Aarya Sawant  
Shubham Mahadik

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Aarya Sawant  
Vaishnavi Lahoti  
Akash Singh

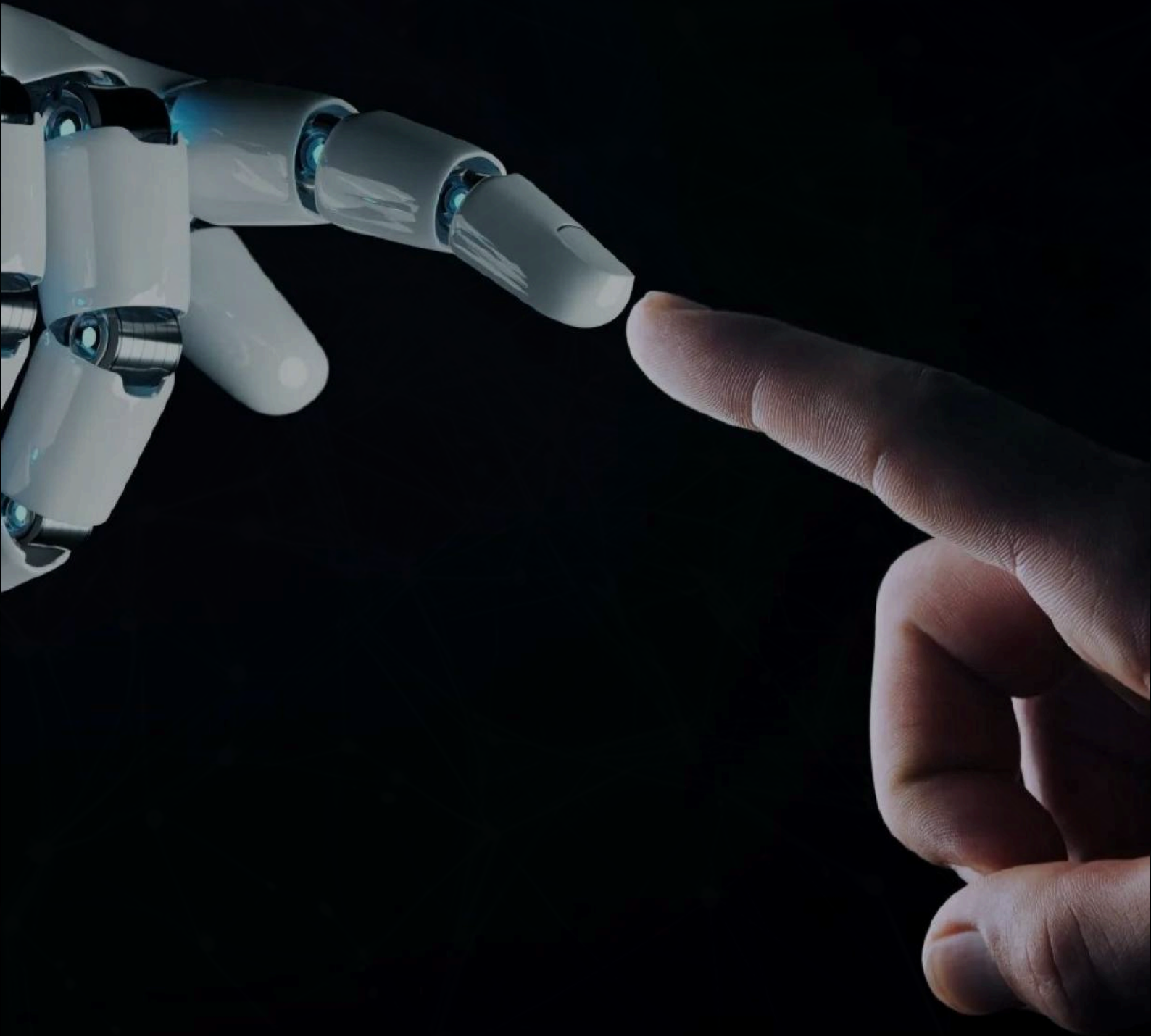
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Avantika Pawar  
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Shubham Mahadik  
Rashmeet Kaur Jadhav  
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Atharv Wable  
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Aarya Sawant  
Vaishnavi Lahoti  
Vaishnavi Pai  
Yash Lawand

Department of  

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