



ARTIFACTS

Chronicles of Technology ,,, Talent ,,, Innovation and Inspiration

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



8th
EDITION
2023

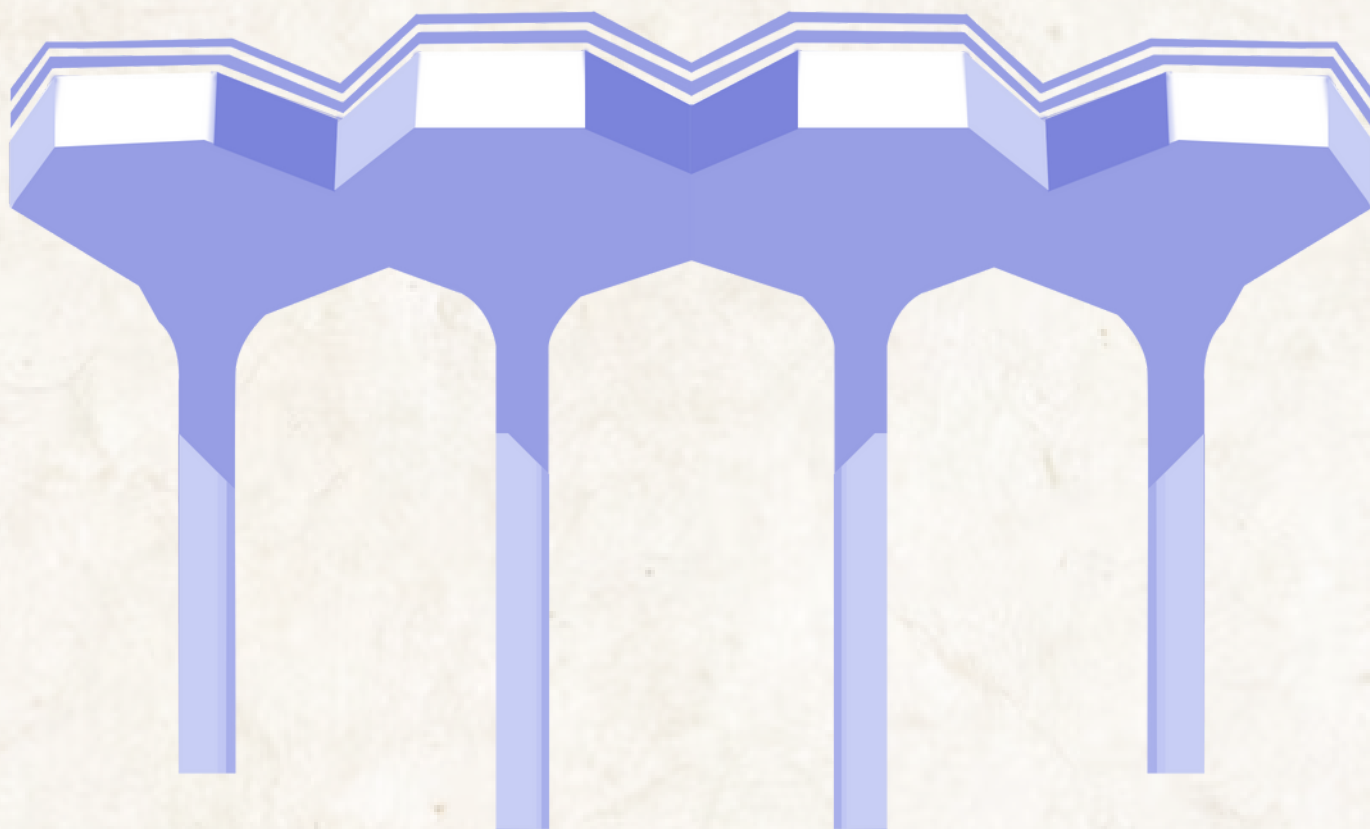
DEPARTMENTAL MAGAZINE

iART3FACTS

Chronicles Of Technology, Talent, Innovation & Inspiration

TECHNO-CULTURAL MAGAZINE

EIGHTH EDITION



**DEPARTMENT OF ELECTRONICS &
COMMUNICATION ENGINEERING**



HALDIA INSTITUTE OF TECHNOLOGY
HALDIA ,PURBA MEDINIPUR-721657(WB)

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ABOUT

About Institute

Haldia Institute of Technology (An Institute of ICARE, Haldia, Approved by AICTE, and affiliated to MAKAUT) began its journey in the year 1996. It is the first private and accredited academic institution catering technical education in West Bengal. The institute has an enclave campus of 43 acres of land having an administrative block of 3332 square meters with nine academic blocks having an area of around 20350 squares. There are 12 NBA accredited B. Tech courses and 5 M.Tech and MCA,MBA courses with 5200 student strength.

Haldia Institute of Technology is accredited by the National Assessment and Accreditation Council (NAAC) with an "A" grade, valid up to September 2021. Haldia Institute of technology ranked "163" among engineering colleges in India by the National Institutional Ranking Framework (NIRF) in 2020

Department of Electronics & Communication Engineering

The Department of Electronics & Communication Engineering was established in 1998. National Board of Accreditation (NBA) accredited it in 2004,2007, 2018 and subsequently in 2007. Presently, the department has an intake capacity of 180 student for the B. Tech course. It also offers MTech in Microelectronics and VLSI Design since 2005 with intake capacity 18 students. The department has several well-equipped laboratories for the students as well as for researchers. It has a departmental Library, which contains text/reference books, more than 500 titles. The department of Electronics and communication stands by the vision "To produce dynamic human resources of global standards by imparting quality teaching, carrying out research and technology development in the emerging areas of Electronics & Communication Engineering".

The department also strives to produce electronics and communication engineers having strong theoretical foundation, good design experience and exposure to research and technology development in frontier areas of electronics and communication engineering. And also, to create competent professionals who can work as an individual or in a group with effective communication and leadership skills meeting the requirements of multi-cultural global environments and to help the student be a successful and responsible engineer for the betterment of mankind by inculcating social and ethical values in professional engineering program.

Presently, The Head of the Department is **Prof. (Dr.) Chanchal Kumar De** (2017-present).

Former Head of the Department(s):

1. Mr. Santi Prasad Maity (1998-2001)
2. Mr. Goutam Lohar (2001-2005)
3. Mr. Asim Kumar Jana (2005-2009)
4. Dr. Sunandan Bhunia (2009-2015)
5. Dr. Jaydeb Bhaumik (2015-2017)



Prof. (Dr.) Subrata Mondal

Principal
Haldia Institute of Technology, Haldia,
Purba Medinipur

MESSAGE FROM PRINCIPAL

I'm glad to hear that in December 2023, the Department of Electronics and Communication Engineering will release the seventh issue of "iArtefacts," its yearly journal of technology and culture.

Science and technology innovation is a deeply philosophical topic. A clogged mind is incapable of thinking clearly until it is unburdened by cultural taste. "Education is the manifestation of perfection already in man" according to Swami Vivekananda. Therefore, even if we make an attempt to provide education that keeps pace with technological innovation, it would be ineffective if it weren't complemented by something that mirrored the perspectives of our younger generation. Here, technocultural magazine can play a significant function in helping them express their ideas and perspectives in order to make it flawless.

"i-Artefacts" has numerous features that will enable numerous positive qualities. not just in our younger generation but in everyone who is a part of this action. Additionally, it will work to instil confidence, ingenuity, and originality in each of them.

This magazine represents a turning point in our development because it lets our imaginations run free and gives life to our ideas and desires. It releases a wide range of creative abilities, from writing to editing to even magazine design. So getting the magazine to publish is almost like a dream.

I'd want to thank the entire "i-Artefacts" team and the authors who contributed for their efforts in turning this dream into a reality



Dr. Anjan Mishra

Registrar
Haldia Institute of Technology, Haldia,
Purba Medinipur

MESSAGE FROM REGISTRAR

We strived to develop our youth for the advancement of the nation during the era of rapid technical improvement and the information revolution, and we dedicated two decades to this effort. We constantly supported the pupils' development along the way with patronage, criticism, sympathy, and guidance. With these activities, Haldia Institute of Technology has evolved into a hub for purposeful education. It is an honour for me to communicate how pleased I am with the Department of Electronics and Communication Engineering's production of the techno-cultural print journal "iArtefacts."

The entire faculty and staff at the Institute are focused on continuous improvement while keeping in mind the institute's mission statement that students are the primary drivers of technology. In addition to instruction and learning, we have a solid inheritance, This institute is emerging as a trend-setter in the heart of West Bengal, offering a good mix of academic and co-curricular activities. I urge all the stake holders to make the most of the multiple opportunities, for self-development as well as the development of the Institute and the society as a whole. Please make the best use of all the facilities that are available. Please try to maintain a balance between academic and co-curricular activities. Enjoy yourselves by all means, but always remember the need for self- discipline, moral values and a sense of responsibility.

The mastery of mind cannot be termed complete unless the hidden potentials beyond the books are harnessed, nourished and properly shaped. The objective of all cultural events and programs at our Institute had always been focused on the same. I am sure that the initiative taken by the Department of Electronics and Communication Engineering, will definitely make our effort towards the achievement of the vision of our Institute stronger. I extend my best wishes to the faculty members and students involved of the magazine "i-Artefacts". At our Institute, the goal of all cultural events and programmes has always been the same. I have no doubt that the initiative taken by the Department of Electronics and Communication Engineering will significantly strengthen our efforts to realise our Institute's mission. To the faculty members and students working in the journal "i-Artefacts," I send my best wishes.



Prof. (Dr.) Chanchal Kumar De

Head,
Dept. of Electronics & Communication Engineering
Haldia Institute of Technology, Haldia,
Purba Medinipur

MESSAGE FROM THE HEAD OF DEPARTMENT

I feel ecstatic to introduce our Department of Electronics and Communication Engineering, Haldia Institute of Technology is coming out with the seventh edition of the departmental magazine “i-Artefacts”. In fact, the Glory of a department depends on the caliber and achievements of the students, teachers, and staff.

A magazine carries the contributions reflecting the ethos and aspirations of each and every individual of a department. “iArtefacts”, the magazine strives to change information into knowledge and innovative ideas, to enhance critical thinking to cultivate the right ways that will equip all of us to stay competent in our respective fields of study and research.

"i-Artefacts" has numerous features that will enable numerous positive qualities not just in our younger generation but in everyone who is a part of this action. Additionally, it will work to instill confidence, ingenuity, and originality in each of them.

Moreover, ‘i-Artefacts’ means something observed in a scientific investigation or experiment that is not naturally present but occurs as a result of the preparative or investigative procedure and in connection to the name of the magazine; I solemnly believe that the Electronics and Communication Engineering fraternity will certainly impart a shape to this tiny magazine to embark the meaning of the same in the days to come.

It is my pleasure to congratulate the entire team 'iArtefacts' who have made untiring efforts to make this magazine possible. I extend my warm wishes towards the success of this edition of the magazine.



Dibyendu Chowdhury

Assistant Professor (ECE)
Haldia Institute of Technology, Haldia,
Purba Medinipur

EDITOR'S NOTE

We are going to publish a printed Magazine after the pandemic covid-19. I Dibyendu Chowdhury, Assistant Professor Dept. of ECE at Haldia Institute of Technology and I feel grateful to be an editor of this Magazine from faculty side since 2017. I have a challenge to give the time to publish this Magazine due to other activities of the department and institute. I along with my editorial team members have spent a lot of time to make this Magazine stand out.

So here you have “iARTEFACTS”, the long-awaited magazine of the ECE department for the “AN OBJECT MADE BY HUMAN HAND”. This magazine gives an insight into the different hobbies of students, their creativity and activities. This magazine is a platform that exhibits the literary skills and innovative ideas of teachers and students. “iARTEFACTS” presents the hard work and dedication of students and the contributions of teachers.

I would like to thank all my editorial team members for helping me to this through. I express my considerable appreciation to all the authors of the articles in this magazine. These contributions have required a generous amount of time and effort. It is this willingness to share knowledge, concerns, and special insights with fellow beings that have made this magazine possible.

Thank you all!!

Oisik Das 4th year B. Tech ,ECE
Aditya Prakash 3rd year B. Tech, ECE
Manish Kumar 2nd year B. Tech, ECE
Shubham Chatterjee 1st year B.Tech,ECE

STUDENT EDITORS NOTE

Storytelling is an art of sharing ideas that humans have mastered over the course of time, the impact it brings in the formation of culture and societies can be seen through the extraordinary narratives of great minds. It involves constant observation and lots of creativity to make the process interesting and informative at the same time. Making a subtle balance over the use of technical jargons and the ideas we attempt to share with our audience, we embark on making this magazine interactive and easy to comprehend. In this digital version we have put dynamic content to provide the best reading experience. Believing in the best and maintaining the highest standards is what has been our legacy. We have given our best to uphold this.

As a reader you will feel a dopamine rush while going through the recent advances in communications, electronics, automation, robotics and future end technologies. And while diving into the literature section you will embrace the remarkable efforts of our peers at HIT expressing their heart through beautiful words and pictures. We have thoroughly put visual illustrations and the emotions we share with our readers. And this endeavor would not have been complete without a rewind through the achievements of ECE department and the glimpses of some memorable moments we have lived together. The entire process of publication has been a great learning experience for us. Building from scratch gave us the flexibility to work and improve our content at each step and share ideas throughout.

This bottom-up approach of ours to complete this project made us deliver every bit of this magazine as original ideas of our team members. Our strength lies in the size of our team contributing with a common goal to build something great, whose efforts have made this journey an easy ride. We invite our readers to share their views and remarks on our social media instances and make this endeavor an ongoing journey until we are back again with another version of your favourite “iArtefact”.

TECH TRENDS 2023

In this concise tech brief, we bring you the latest
pulse of innovation



Stay informed as we unravel these tech narratives,
providing you with a glimpse into the cutting-edge
developments shaping our digital tomorrow.

QUANTUM COMPUTING

-Archisman Kundu
22/ECE/51

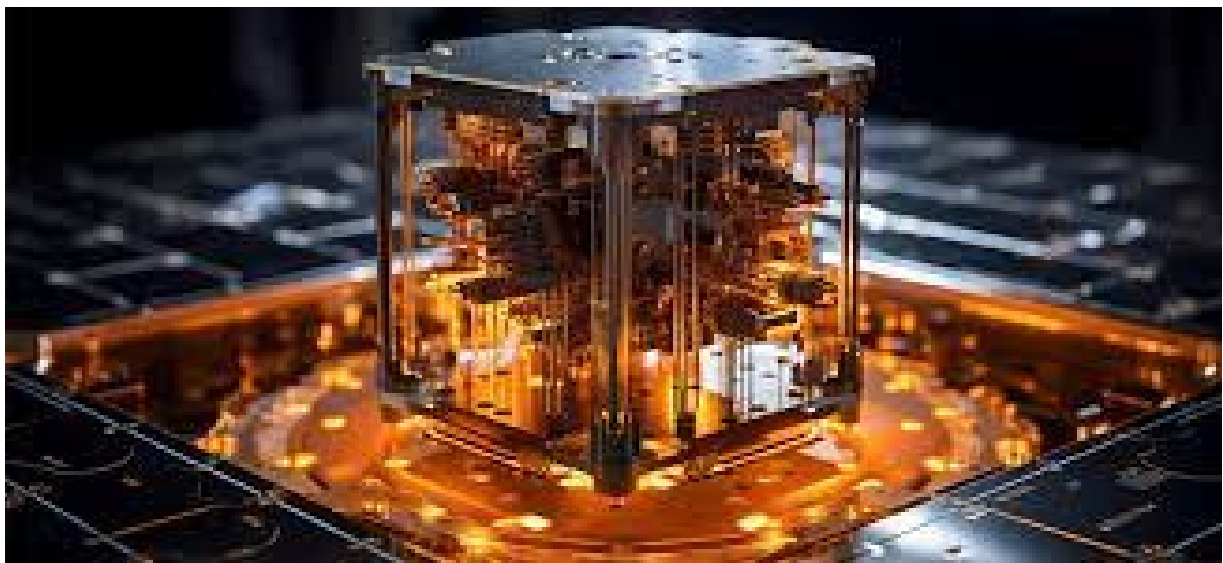
Welcome to the frontier of computing, where the ordinary gives way to the extraordinary, and the impossible becomes possible. Quantum computing, with its promise of unparalleled power and capability, stands poised to revolutionize the way we process information and solve complex problems

Imagine a world where computers operate not just in ones and zeros, but in a mind-bending realm of quantum states, where bits can exist in multiple states simultaneously. This phenomenon, known as quantum superposition, allows quantum computers to explore countless possibilities in parallel, performing calculations at speeds that boggle the mind. But the magic doesn't stop there. Quantum entanglement, another hallmark of quantum mechanics, enables qubits to communicate instantaneously across vast distances, defying the constraints of classical communication. This opens the door to secure communication networks and unprecedented levels of data encryption, ushering in a new era of cybersecurity.

Yet, the journey to harnessing the full potential of quantum computing is not without its challenges. Scientists and researchers are racing against the clock to overcome obstacles such as qubit instability and environmental interference, striving to create stable and scalable quantum systems that can tackle real-world problems with



As we stand at the threshold of a quantum revolution, our hearts beat with the rhythm of boundless potential. From reshaping the landscape of medicine and refining the intricate mechanisms of financial markets to peering into the very fabric of existence, quantum computing illuminates the path to a future unbounded by conventional limits. So, let us embrace this moment with a sense of wonder and anticipation, as we prepare to embark on a voyage into the depths of the quantum realm—a journey that promises to ignite the soul and spark the imagination like never before.



Quantum cryptography enables new ways to transmit data securely; for example, quantum key distribution uses entangled quantum states to establish secure cryptographic keys. When a sender and receiver exchange quantum states, they can guarantee that an adversary does not intercept the message, as any unauthorized eavesdropper would disturb the delicate quantum system and introduce a detectable change.[59] With appropriate cryptographic protocols, the sender and receiver can thus establish shared private information resistant to eavesdropping.

Modern fiber-optic cables can transmit quantum information over relatively short distances. Ongoing experimental research aims to develop more reliable hardware (such as quantum repeaters), hoping to scale this technology to long-distance quantum networks with end-to-end entanglement. Theoretically, this could enable novel technological applications, such as distributed quantum computing and enhanced quantum sensing.



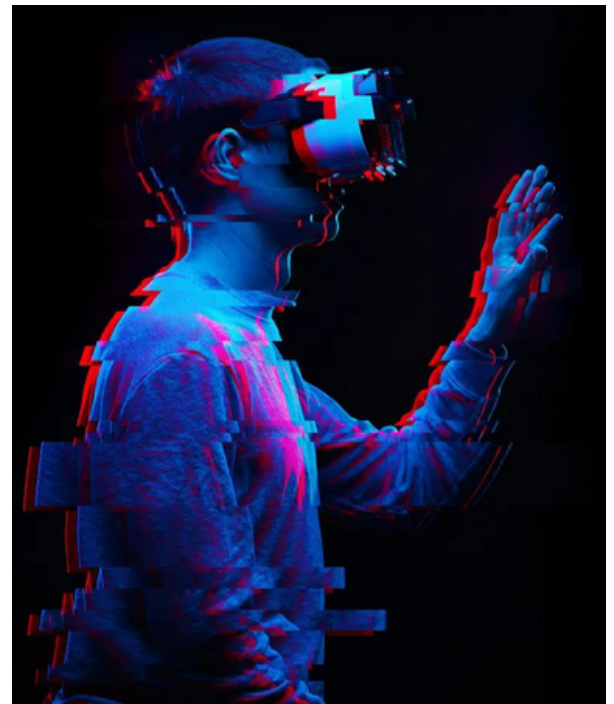
Your office becomes a jungle gym, your cat transforms into a lovely unicorn, and your boss... well, let's not go there.

So here it is... Welcome to Extended Reality.

Imagine the moment you put on a headset, you are not just you. Nope, you are a mad scientist creating virtual mixtures, a pirate exploring the digital seas, or just an average person trying to figure out why your virtual horse pet keeps eating all your pizza. This is what saying going beyond physical.

So what is going beyond physical?

Lets speak about Extended reality or XR. It is a broad category of immersive technologies that connect the real and virtual worlds. Virtual reality (VR), Augmented reality (AR), and Mixed reality (MR) are its three primary subfields. In comparison to augmented reality, which puts digital pieces on the real world, virtual reality creates completely virtual experiences. Mixed Reality combines the two in a smooth way, enabling simultaneous interaction with virtual and actual objects. By presenting fresh opportunities in the fields of entertainment, education, healthcare and other fields, these technologies aim to extend our understanding of reality.



Yes, the possibilities are endless. With XR we can do everything from exploring distant galaxies to battling virtual zombies in our own living room. Let me be serious In case of education, Extended Reality can provide engaging learning experiences for example for practicing surgery, for learning historical events, for exploring different ecosystems. In case of Health Care, Surgeons can use it to practice procedures and visualize in 3D. Also it can guide patients through exercises and track their progress. In case of Design and Manufacture, it creates 3D model, testing them virtually saving time and resources. In case of Entertainment, we can explore virtual worlds, battle with enemies and experience even the stories virtually. Also we can experience tours to foreign places which I had in my dreams only. Also attending concerts sitting in the front row or sitting in the best place watching IPL match.

So Extended Reality has an exciting future ahead of it. One thing is very clear as we set out on this exciting journey into a world where the lines separating the digital and the physical are blurred: XR has the potential to completely transform every aspect of our lives, from the way we work and play to the way we connect and learn. The only thing stopping us from exploring the fantasy border of Extended Reality is our imagination, so hold on tight, and get ready for an exciting journey. The future is arrived and it's even more thrilling than we could have ever imagined.



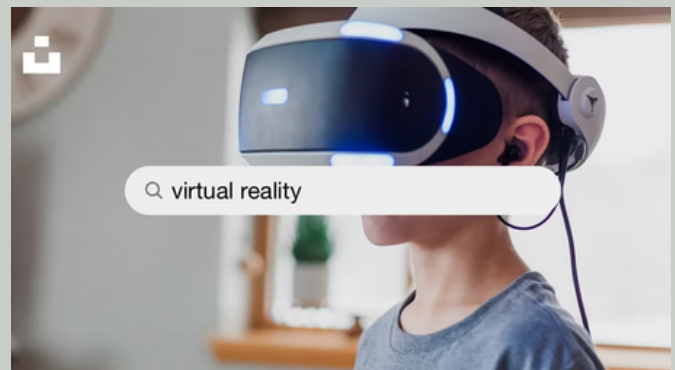


AR enhances the real-world environment by superimposing digital information or objects onto it. It is typically experienced through smartphone or tablet apps, AR glasses, or heads-up displays. AR can be used in various fields like gaming, education, healthcare, and industrial training.



AR supplements the real world, making it useful for tasks where you need access to both digital and physical information simultaneously. It has practical applications in fields like remote assistance, navigation, and maintenance.

VR creates a completely immersive, computer-generated environment where the user feels like they are in a different place or world. It is experienced through VR headsets or goggles that block out the real world and replace it with a virtual one. Popular VR platforms include Oculus Rift, HTC Vive, and PlayStation VR.



VR provides complete immersion, making it ideal for applications where the user needs to be transported to a different environment, like gaming, virtual tours, or therapy.



What Is Artificial General Intelligence?

Artificial general intelligence (AGI) is a hypothetical form of artificial intelligence in which a machine can learn and think like a human. For this to be possible, AGI would need self-awareness and consciousness, so it could solve problems, adapt to its surroundings and perform a broader range of tasks.

If artificial general intelligence (sometimes called strong AI) sounds like sci-fi, that's because it still is. Existing forms of AI haven't quite reached the level of AGI but developers are still working to make it a reality



1. AGI vs. AI: What is the Difference ?

Artificial intelligence is often trained on data to perform specific tasks or a range of tasks limited to a single context. Many forms of AI rely on algorithms or pre-programmed rules to guide their actions and learn how to operate in a certain environment.

Artificial general intelligence, on the other hand, is able to reason and adapt to new environments and different types of data. So instead of depending on predetermined rules to function, AGI embraces a problem-solving and learning approach – similar to humans. Because of its flexibility, AGI is capable of handling more tasks in different industries and sectors.

Weak AI vs Weak AI vs General AI – An Epic Battle of Intelligence !!!

WEAK AI, THE SPECIALIST

In the blue corner, we have Weak AI, the specialist extraordinaire! It's like a champion in specific tasks—think of it as the unbeatable chess player or the wizard of image recognition. It's got its game face on, excelling in its domain like a master artist with a favorite brush. But, uh-oh, it's confined to its specialty and can't venture beyond its comfort zone.

GENERAL AI, THE ALL-ROUNDER

And in the red corner, here comes General AI, the all-rounder powerhouse! Picture it as the superhero of artificial intelligence, tackling multiple tasks with finesse. From painting a masterpiece to cracking complex codes, it's the jack-of-all-trades, ready to take on any challenge. But, can it handle the heat in the ring?



THE EPIC SHOWDOWN

The bell rings, and it's not just a clash; it's an epic showdown! Weak AI is throwing its best moves, nailing specific tasks left and right. But wait, General AI is not one to back down; it adapts, learns, and starts dominating the ring with its all-encompassing intelligence. The crowd goes wild as these titans of AI exchange blows in the quest for supremacy.

But plot twist! Instead of a knockout, these contenders decide to team up. Weak AI, with its specialized brilliance, combines forces with General AI's versatility. It's like watching a dynamic duo emerge, each playing to its strengths. Together, they create a force to be reckoned with, showing that collaboration might be the real winner in the AI arena.

In a surprising turn of events, the referee raises both their hands as the winners. It's not about one AI beating the other; it's about recognizing the strengths in each and forming an unbeatable team. The real victory is the collaboration between Weak AI and General AI, creating a harmonious blend of specialized expertise and universal intelligence that leaves the audience in awe.

Risks of Artificial General Intelligence !!

For all its potential benefits, artificial general intelligence doesn't come without risks. Already, AI is challenging our perception of the world and what makes us human. The development of an AI that can mimic and surpass our own abilities may trigger fears of job losses due to automation and other potential dangers.



Though AI has machine precision, it isn't immune to human error. Within weak AI, issues have already arisen where embedded systems have been built with biased data. This can result in AI making erroneous or, at worst, discriminatory decisions.

Artificial general intelligence does come with its dangers. But as long as the humans at the wheel have good intentions.

“AI is a tool; The risk is only as great as the intent people have when using these tools.”

Artificial General Intelligence Examples

AI that learns, thinks and behaves just like a person still doesn't exist. However, weak AI tools incorporating some elements of artificial general intelligence, or that push the boundaries of limited memory, do exist.

Some forms of weak artificial intelligence in use might seem advanced enough to reach artificial general intelligence status — think Sophia the robot. The field of generative AI, in particular, has made giant strides with tools like ChatGPT, suggesting that AGI isn't far away.



India's Ghatak UCAV: A Silent Predator Takes Flight

India's Ghatak UCAV (Unmanned Combat Aerial Vehicle) is a revolution in aerial warfare. Nicknamed "Deadly" in Hindi, this high-tech, autonomous hunter-killer soars unseen. Its flying wing design makes it a ghost to enemy radars, allowing it to strike with pinpoint accuracy. Imagine a long-range drone carrying a deadly arsenal of missiles and bombs, eliminating targets without endangering pilots.

The Ghatak isn't just a weapon; it's a symbol of India's ambition for self-reliance. While under development, successful tests of its scaled-down version, the SWiFT, show promise. The Ghatak will be a force multiplier, undertaking high-risk missions deep into enemy territory and reshaping the modern battlefield. Packed with advanced avionics and carrying a sophisticated electronic warfare suite, it's a predator unlike any other. With an expected arrival around 2024-2025, the Ghatak UCAV promises to be a game-changer, making India a force to be reckoned with in the skies.

Stealth Design:

At the heart of the Ghatak's prowess lies its revolutionary flying wing design. This tailless configuration is meticulously crafted to minimize radar signatures, rendering the Ghatak virtually invisible to enemy detection systems. Picture a predator prowling through the skies, unseen and undetected until it strikes—such is the potential of the Ghatak's stealth capabilities.

Powering the Predator:

While specific details regarding its powerplant remain shrouded in secrecy, initial plans envisioned the Ghatak being propelled by the formidable Kaveri engine—a domestically developed turbofan engine renowned for its power and efficiency. However, recent reports suggest that the final engine selection is still underway, highlighting the meticulous attention to detail being paid to every aspect of the Ghatak's development.

Testing and Development:

The journey towards the realization of the Ghatak hasn't been without its challenges. From ensuring seamless autonomous operation to finalizing the optimal engine configuration, every step of the development process has been meticulously scrutinized. However, encouraging milestones such as the

successful trials of the SWiFT (Stealth Wing Flying Testbed) have bolstered confidence in the Ghatak's capabilities. Notably, the SWiFT's December 2023 flight in a flying wing configuration showcased the technological prowess underlying the Ghatak's design.



Reshaping the Battlefield

With its imminent arrival, the Ghatak promises to redefine the dynamics of aerial warfare. Its ability to undertake long-range, high-risk missions autonomously represents a paradigm shift in strategic warfare. No longer constrained by the limitations of crewed aircraft, the Ghatak symbolizes India's ambition for self-reliance in modern warfare—a potent fusion of indigenous innovation and cutting-edge technology.

Key Development Aspects

The evolution of the Ghatak UCAV can be delineated into several pivotal facets. From its inception as the AURA (Autonomous Unmanned Research Aircraft) to the groundbreaking strides made with the SWiFT, each phase of development has been marked by relentless innovation and unwavering determination.

Moreover, the ongoing deliberations regarding engine selection underscore the meticulous attention to detail being paid to every aspect of the Ghatak's design.

Capabilities of the Ghatak

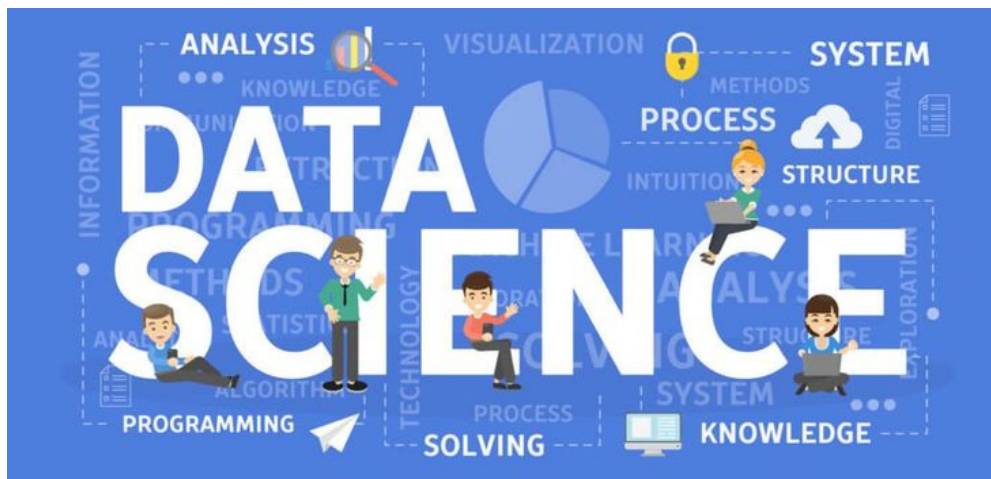
As per projections, the Ghatak boasts a formidable array of capabilities designed to augment its lethality on the battlefield. From its seamless integration with networked warfare systems to its internal weapons bay capable of housing a diverse array of munitions, the Ghatak represents the epitome of next-generation aerial warfare technology. Moreover, its advanced avionics suite, coupled with state-of-the-art stealth technology, ensures that the Ghatak remains a potent adversary capable of operating with impunity in contested airspace.

The Future of Ghatak:

While the Ghatak UCAV project is still in its nascent stages, the future appears exceedingly promising. With the first full-scale prototype flight expected around 2024-2025, anticipation is running high for the unveiling of this formidable aerial predator.

Armed with an unparalleled suite of capabilities and underpinned by the indomitable spirit of Indian innovation, the Ghatak promises to redefine the contours of modern warfare, solidifying India's position as a preeminent player on the global stage.

-Aditya Prakash
20/ECE/12



Data Science Revolution: Navigating the Future Landscape

-Suman Saurav

20/ECE/176

In the era of unprecedented technological advancements, data has emerged as the lifeblood of industries, shaping the way businesses operate, governments make decisions, and academia conducts research. The rise of big data and the unparalleled ability to collect, analyze, and utilize vast amounts of information have transformed industries ranging from finance and healthcare to retail, logistics, and publishing. One domain where this transformation is particularly prominent is data science, a field that has evolved to become the linchpin for innovation and progress.

Traditionally, publishers have engaged with data in various forms, but the recent surge in data analytics has elevated this practice to an indispensable component across diverse industries. No longer confined to demographic data on readers, insights today extend to intricate details of group preferences and consumer behaviors.



As we stand on the cusp of a new technological era, the future of data science appears both promising and challenging. The proliferation of data science reflects the increasing significance of data in shaping the trajectory of industries and society as a whole. Here are key aspects to consider when contemplating the future of data science:

Continued Technological Advancements:

The pace of technological advancements shows no signs of slowing down. Innovations in machine learning, artificial intelligence, and data

processing technologies will continue to redefine the capabilities of data science. As hardware and software evolve, data scientists must stay attuned to emerging tools and methodologies.

Interdisciplinary Collaboration:

The boundaries between traditional disciplines will blur even further. Data science will increasingly rely on interdisciplinary collaboration, bringing together experts from diverse fields such as computer science, statistics, business, and domain-specific industries. The ability to bridge these gaps and communicate effectively will be crucial for success in the field.

Ethical Considerations:

As the use of data becomes more pervasive, ethical considerations will take center stage. Data scientists will need to navigate complex ethical dilemmas related to privacy, bias, and the responsible use of data. The industry must establish robust ethical framework and guidelines to ensure the responsible deployment of data science applications.

Integration of Real-time Analytics:

The demand for real-time analytics will intensify as businesses seek instantaneous insights for decision-making. Data science will evolve to accommodate the challenges of processing and analyzing data in real-time, enabling quicker response to dynamic market conditions and emerging opportunities.

Augmented Analytics and Automation:

Augmented analytics, combining artificial intelligence and machine learning with human intuition, will become more prevalent. Automation of routine tasks in data preparation, analysis, and interpretation will free up data scientists to focus on higher-level problem-solving and strategic decision-making.



Increased Emphasis on Data Governance:

With the growing volume and importance of data, organizations will place a heightened emphasis on data governance. Ensuring data quality, security, and compliance with regulatory standards will be paramount. Data scientists will play a crucial role in establishing and maintaining robust data governance frameworks.

Ubiquity of Edge Computing:

The rise of edge computing, where data processing occurs closer to the source of data generation, will influence the practice of data science. Edge analytics will become integral, allowing organizations to extract valuable insights in real-time without relying solely on centralized cloud-based systems.

Continuous Learning and Upskilling:

The dynamic nature of data science requires professionals to engage in continuous learning and upskilling. Staying abreast of the latest technologies, methodologies, and industry trends will be essential for data scientists to remain effective in their roles.

Collaboration with AI:

As artificial intelligence becomes more sophisticated, data scientists will increasingly collaborate with AI models. Human-AI partnerships will drive innovation, with data scientists guiding AI systems and leveraging their capabilities to solve complex problems.

Global Impact and Societal Responsibility:

Data science will play an instrumental role in addressing global challenges, from healthcare and climate change to social inequality. Data scientists will be at the forefront of leveraging data for positive societal impact, requiring a heightened sense of responsibility and a commitment to addressing pressing global issues.

In conclusion, the future of data science holds immense potential for shaping the way we understand and interact with the world. The continued evolution of technology, coupled with ethical considerations and a commitment to responsible data practices, will define the trajectory of this dynamic field. As data science evolves, documenting the latest advancements and trends, professionals in the field must cultivate a mindset of continuous learning and adaptability to successfully navigate the ever-changing landscape of data science. The journey ahead promises innovation, collaboration, and a transformative impact on the way we harness the power of data for the betterment of society.

Nanotechnology in Engineering: Applications, Challenges and Future Directions

Nanotechnology, the manipulation of matter on an atomic and molecular scale, has emerged as a transformative force across various engineering disciplines. At the nanoscale, materials exhibit unique properties and behaviors that differ from their macroscopic counterparts, enabling novel applications in fields such as electronics, medicine, energy, and environmental science.

In electronics, nanotechnology helps make our devices smaller, faster, and more efficient. Imagine fitting all the power of a computer into a tiny chip – nanotechnology makes that possible.

In medicine, nanotechnology offers unprecedented opportunities for targeted drug delivery, imaging, and diagnostics. Nanoparticles can be engineered to deliver drugs directly to diseased cells. In the energy sector, nanotechnology holds

promise for enhancing the efficiency and sustainability of energy production and storage.

Nanomaterials such as quantum dots and carbon nanotubes are being explored for applications in solar cells, fuel cells, and batteries, with the potential to revolutionize renewable energy technologies.



Despite its vast potential, nanotechnology also presents several challenges and concerns. These include issues related to environmental health and safety, ethical considerations surrounding the use of nanomaterials, and the societal implications of nanotechnology-driven innovations.

Looking ahead, scientists are excited about what nanotechnology can do. By working together and being careful, we can keep discovering amazing things and use nanotechnology to make our world better.

-SATYAM SINGH
20-ECE-140



-Utkarsh Vivek (20/ECE/189)

Introduction:

In 2013, Google sparked excitement in the tech world with the unveiling of a groundbreaking concept: Google Glass. This wearable device promised to revolutionize daily life by overlaying digital information onto the physical world. Fast forward to the present day, and Apple is poised to redefine computing once again with its latest innovation: the Apple Vision Pro.

Unveiling the Apple Vision Pro:

The Apple Vision Pro represents a significant leap forward in mixed reality technology. Priced at a premium and equipped with an array of sophisticated sensors and cameras, this headset aims to seamlessly blend virtual elements with the real world. Boasting features like real-time passthrough video, high-resolution micro-OLED screens, and advanced spatial computing capabilities, the Vision Pro offers users a glimpse into a future where computing transcends traditional boundaries.

Exploring the Uses of the Vision Pro:

From immersive entertainment experiences to productivity-enhancing applications, the potential uses of the Apple Vision Pro are vast. Users can transform their living rooms into interactive digital environments, collaborate with colleagues in virtual workspaces, or explore virtual art galleries from the comfort of their homes. The device's ability to combine virtual and real-world elements opens up endless possibilities for creativity, learning, and communication.

Impact on Human Perception and Behavior:

While the Vision Pro holds promise as a transformative technology, its introduction raises important questions about its impact on human perception and behavior. Studies conducted by researchers at Stanford's Virtual Human Interaction Lab shed light on the psychological effects of living life through a headset. Issues such as distortion in passthrough video, .

simulator sickness, and social disconnection underscore the need for careful consideration of how we integrate mixed reality devices into our daily lives

Challenges and Considerations:

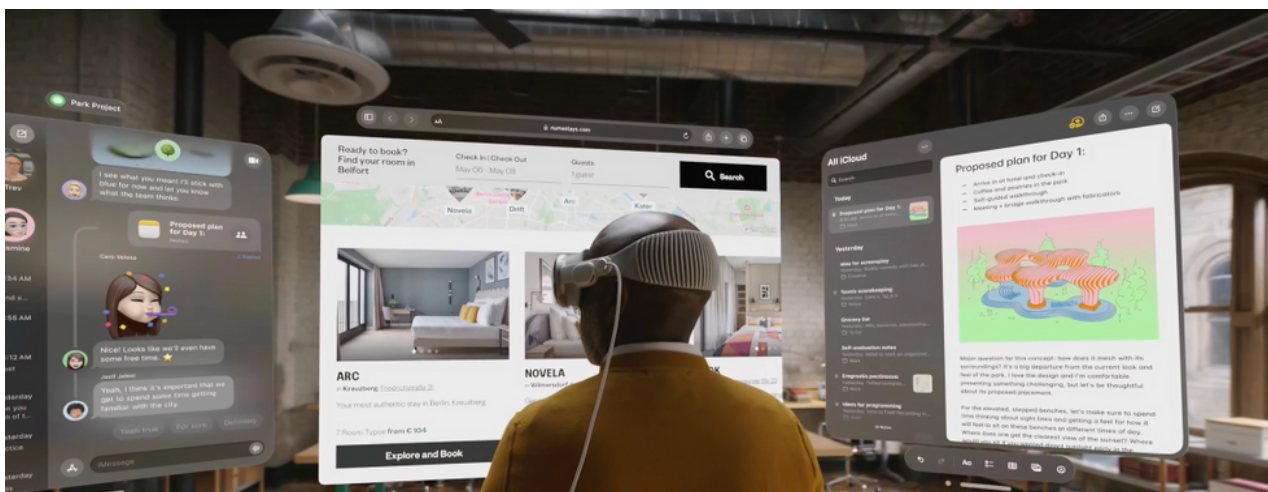
Despite its potential, the Apple Vision Pro is not without its challenges. Concerns about social acceptance, usability, and the long-term effects on human cognition highlight the need for thoughtful development and responsible usage. As we navigate this new frontier of spatial computing, it is essential to prioritize user experience, privacy, and ethical considerations

Looking Towards the Future:

While the Vision Pro represents a significant step forward in the evolution of computing, it is just the beginning of a larger journey towards a more immersive digital future. As technology continues to advance, we must approach innovation with a critical eye, recognizing both its potential and its pitfalls. Ultimately, the true impact of devices like the Apple Vision Pro will depend on how we choose to integrate them into our lives and society as a whole.

Conclusion:

The Apple Vision Pro stands at the forefront of a new era of computing, promising to reshape the way we interact with technology and the world around us. As we embark on this journey of exploration and discovery, let us strive to harness the power of innovation responsibly, mindful of the profound impact it may have on our lives and the future of humanity.





NON-TECH TRENDS

JOIN US ON A JOURNEY THROUGH THE KALEIDOSCOPE OF HUMAN EXPRESSION,
WHERE TRADITIONS, ARTS, AND STORIES INTERTWINE,

LIFE OF AN ENGINEERING STUDENT !!

-Aman Roy

Engineers are People Who Solve Problems and focus on making things work more efficiently and effectively. They apply the theories and principles of science and mathematics to research and developed economical Solutions to technical problems. That is the definition of an Engineer. Agreed. But who are the engineering. Students? They are are often the ones who are over burdened with their assignments, deprived of sleep, low on Social (Maybe) and busy in their own world of sci-fi movies, and series. In this article, we have tried to compile, in Story, What all engineering students go through.

This is the most annoying part. In engineering colleges, everyone is competing in the race of securing the highest grade points and even a percent matters. Hence, they have no option to do those long assignments worth just that one percent.

I'm majoring in Self-Pity with a double minor in Procrastination and Crying.

We do sympathize with them. The are burdened with those laws on gravity and forces, Physics, Maths, Chemistry theories. Resultant? It is they Cribbing and living a life of self-Pity.

You know you're in the Wrong Class when more than 3 Students are female, and they're all hot.

The Problem with every 'male engineering Student, from IIT to NIT to HIT, each one of them.

"ENGINEERING"

"If You're Not Tired, You're Not Doing It Right."

Those dark Circles, sleepless night are what defines their lives.

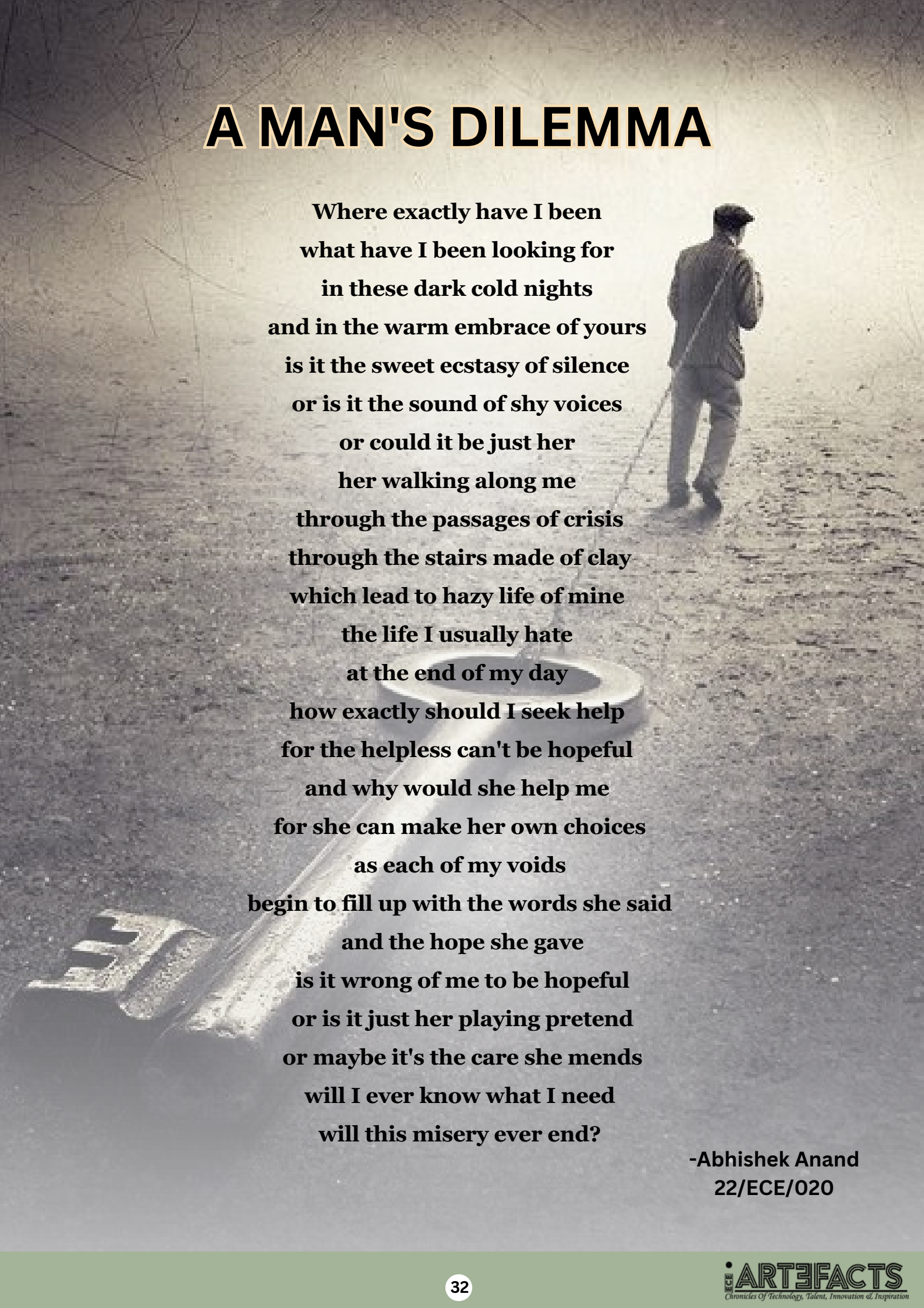
Finally Class is over Now I can go Home And Study.

There are always those super-brainly 'nerds' who Would not even waste a minute. They would study and study and study study study.

Fresher's: I have no idea what I'm doing.
Graduate:- I still have no idea what I'm doing

All life is an experiment. At no point of time will you have any idea of the results of the experiment.

A MAN'S DILEMMA



Where exactly have I been
what have I been looking for
in these dark cold nights
and in the warm embrace of yours
is it the sweet ecstasy of silence
or is it the sound of shy voices
or could it be just her
her walking along me
through the passages of crisis
through the stairs made of clay
which lead to hazy life of mine
the life I usually hate
at the end of my day
how exactly should I seek help
for the helpless can't be hopeful
and why would she help me
for she can make her own choices
as each of my voids
begin to fill up with the words she said
and the hope she gave
is it wrong of me to be hopeful
or is it just her playing pretend
or maybe it's the care she mends
will I ever know what I need
will this misery ever end?

-Abhishek Anand
22/ECE/020

YOUTH CENTRAL

Youth Central is the epicenter of fresh ideas and unbridled enthusiasm.



Youth Central

Next Gen Leaders

Future Trailblazers

IN THE VIBRANT REALM OF YOUTH CENTRAL, THE HEARTBEAT OF THE FUTURE RESONATES.

ZANJEER

Kab tak rok lagao gey apni betiyon pey.
Kab tak rok lagao gey apni betiyon pey.
Kab tak chaar diwari m kaid karogey apni betiyon ko.
Kab tak paro m zanjeer laga kar rok lagao gey apni betiyon pey. Kab tak school
janey se rok lagao gey apni betiyon pey.
Kab tab bhari mehmil m janey se rok lagao gey apni betiyon pey. Kab tak rok
lagao gey apni betiyon pey...
Kab tak rok lagao gev apni betiyon pey...

Nanhi si umar m kitchen ka bojh dekar
Kya kamyab kar pao gey apni betiyon ko?
Q uss ko kam maan kar uske nazar m giratey ho apney betiyon ko?
Ye dono hath or ye dono per khol kar v Q kaid rakhey ho apni betiyon ko.
Q jamne k dar se Riwazo ka haar pehna rakhe ho apni betiyon ko...
Kab tak rok lagao gey apni betiyon pey...
Kab tak rok lagao gey apni betiyon pey...

Unchi uraan laganey se pehle Q kaat dete ho pankh apni betiyon ka ?
Q Uuun ucha awaj Laga kar daba dete ho awaj apni betion ka.....
Q itna jaldi hath pila kar dete ho apni betiyon ka....
Kaid karna h to kar do uss wahiyad paramparaon ko...
Jine do jine do khul k jine do apni betio ko....

-Shadab Alam
B21/ECE/335

सफलता

पा लेगा अपनी मंजिल
तू खुद पर विश्वास तो रख ।
मिलेगी तुझे अनचाही खुशियां
तू थोड़ा सब्र तो कर ।
सोचता ही रहता है हर बख्त,
अरे उठ कुछ काम तो कर
पूरे हो जाएंगे तेरे हर सपने,
ठहर थोड़ा इंतजार तो कर ।
बिना कुछ किए ही परिणाम सोच लेता
ह...
अरे कुछ काम तो कर ।
परिणाम भी और होंगे तेरी अनुसार ।
सफलता भी चूमेगी कदम तेर
तू खुद पर विश्वास तेरी रख ॥

-Nitesh Kumar
22/ECE/118



दहेज

खामोश क्यों है लोग सारे,
क्या सो रहा सारा जहां?

क्यों रिश्ते जुड़ने को समझौते हैं ऐसे,
क्या साथ चलने को बस समझौते थे पैसे ?
क्या दिल ने बांधी ऐसी डोर? या हम खोए हैं इन शोरों
में..
वक्त लगे हैं उठने को, फिर हम बिक रहे किस की जोरों
में?
क्या बाहुबल से कमजोर तु, या पैरें तेरी बंधी है?
वो साथ तेरे खड़ी है, फिर किस चीज की कमी है?

खामोश क्यों है लोग सारे,
क्या सो रहा सारा जहां?



-Satyam Kumar
22/ECE/159



भक्ति की पहली अनुभूति

स्तब्ध मुख और नेत्र सजल, हृदय बारम्बार दहल जाये ,
उम्मीद भरी वो आत्मा कहती, शाम न ये कहीं ढल जाये ।
न ज्ञान भरी न तप धारी बस मासूमी की चादर है,
न श्लोक, कथा न विधि -विधान बस प्रेम की बढ़ता सागर है।

आज नन्हीं आँखे बड़ी हुई, कुछ और देख अचंभित है,
मुकुट विशाल , माँ काली रूप , को देख देख मनोरंजित है ।
न ज़िद है आज खिलौनों की न घर की भागादौड़ी है,
इक ओर माँ अम्बे सजी हुई इक और श्री माता गौरी हैं।
उस अद्भुत दृश्य की व्याख्या क्या एक आम मनुष्य कर पाए,

जय माता के नारो से जब वायु मुग्ध हो जाये ।
दुखी मन से घर लौटी सारे दर्द समेटकर ,
जी करता था लिपट जाऊँ माँ की मूरत को देखकर ।
आज विदा हुई सब माता आंसू रोक रोक गिर जाये,
सो गया सारा संसार नन्हीं आँखे न सो पाए।
समक्ष माँ की तस्वीरें जो सजी हुई थी फूलों मे,
रखे हुए कितने फल-फूल महक रहे हर कोने मे।
सुबह मंगला आरती और वो पाठ मधुर उच्चारण ,
रोए नहीं तो करे क्या वो ? यही तो थे सब कारण।
कठोर बनो न इतनी माँ ना अगले वर्ष रलाना ,
सिसक-सिसक कर कहती वो , माँ थोड़ा और ठहर कर जाना

-Sneha Singh
22/ECE/171



मेहरबानियां

कभी उसकी थकी निगाहें तो देखो,
समझोगे तब परवरिश की तुम्हारी परेशानियां
कितनी है!!

एक दफ़ा झांक के उसके आँचल में देखना,
बाद जाने के पट वहां वीरानियाँ कितनी है!!
बैठ के फुर्सत से यादों का सिलसिला साथ
उसके शुरू करना,

फिर देखना बचपन की तुम्हारी कहानियाँ
कितनी है!!

देखना कभी बिन बताये अगर लौट कर उसको,
फिर जानोगे रास्ते पर उसकी निगहबानियाँ
कितनी है!!

कभी अकेले में सोचना बीता हर लम्हां तुम,
समझ आएगी तुम पर उसकी मेहरबानियां
कितनी है!!

-Akshat Thakur
22/ECE/032

जलियाँवाला बाग

खुशियों के इस आंगन में कब मौत के कहर उठ जाए,
कोई न जाने ये जीवन कहां किसी से रूठ जाए।
यह बात पुरानी सदियों की पर ज़ख्म अभी भी गहरे हैं,
मानो चिल्लाती ज्वाला सी, समक्ष खड़े वो चेहरे हैं।

मेहनत की खुशी कोई रोके क्या,
हम सह परिवार ही जाएंगे !

धूमधाम से इस वर्ष भी बैसाखी मनाएंगे।
डर की सीमा लांघ-लांघ कर देश निवासी निकल पड़े,
"ऊपरवाला रक्षक गर तो काल से भी हम क्यों डरे?"
मंजूर नहीं थी बाजी ये, कुछ अनहोनी ही होनी थी,
रक्त धार से भरा शहर, लाशों की सैयां सोनी थी।

अंग्रेजों के वो पत्थर दिल,
गोली से सीना चीर गए,
दहशत के वो भीड़ भाड़ में लाखों ऐसे वीर गए।

एकाएक मैदान में गजब हुआ सन्नाटा था,
न कंपीत आंखें देख रही,
ना अब कोई चिल्लाता था।

क्रूरता के लक्षण के आज सारे बंधन पार हुए, टूट गई कितनी गलियां, कितने
बच्चे लाचार हुए।

कहानी नहीं कुर्बानी है हर वर्ष याद दिलाएंगे, शहादत के इस दिन को हम
कभी भूल ना पाएंगे।।

-SNEHA SINGH
22/ECE/171

ক্ষমাপ্রার্থীপ্রেমিক

মুখোমুখি দাঁড়িয়ে সাহস করে

চাইতে পারিনি ক্ষমা

তাইতো আজ চিঠি লিখে

করছি ক্ষমা প্রার্থনা।

ক্ষমা করে দাও তুমি আমায়

দাও যত খুশি গালি

তাই তোমায় ছাড়া আমার ক্যানভাস

সত্যি বড়ই খালি।

মানছি আমি; হযেছে ভুল

ক্ষমা করে দাও 'প্রিয়'

তুমিই আমার জীবনজুড়ে

সর্বকালের সর্বশ্রেয়।

তুমি থাকতে জীবন জুড়ে

দরকার আর কার?

তুমি হবে সুচিত্রা আর

আমি উত্তম কুমার।

তোমার চুলের ছোঁয়ায় যেদিন

হবো আমি স্নাত

:

সেদিন আমার জীবন হবে

আরও আরও তৃষ্ণার্ত।

তোমার আঙুল ধরে হেঁটে যেতে

ইচ্ছে করে খুব;

হারিয়ে যেতে ইচ্ছে করে

তোমার মায়াবী চোখে দিয়ে ডুব।

ভালোবাসার এই ডুবসাগরে

কত জন দিল পাড়ি;

মাত্র কজন তীরে পৌঁছল

বাকিরা ফিরলো বাড়ি।

আমিও সেই প্রেমপিপাসু

পথেরই এক যাত্রী

তোমায় নিয়েই ভাবতে গিয়েই

কাটছে দিবা রাত্রি।

তাইতো তোমায় আগলে

রাখছি আমার হৃদয়েতে,

সারাটা জীবন এক থাকবো

তোমায় আমায় দুজনাতে।।

-Aayan Rakesh

22/ECE/062

ভালোবাসার যন্ত্রণা

গ্রীষ্মের দিনে সন্ধ্যার বাতাস
এবং তোমার মুখ
দুটোই আমার মনকে দেয়
চরমতম সুখ।
তোমার চুলের ছোঁয়ায় যেদিন
হবো আমি স্নাত
সেদিন আমার মন হবে
'আরো, আরো তৃষ্ণার্ত'।

তোমার চোখের এক দৃষ্টিতে
আনন্দ পায় মন
খুশিতে মন বলে ওঠে
'ধন্য এই জীবন'।

আমিও কেবল পাগলের মত
বলছি তোমায় যা - তা
তোমার কাছে সময় কোথায়
শোনার এত কথা।

ভালোবাসার এই ডুবসাগারে
কত জন দিল পাড়ি
মাত্র কজন তীরে পৌঁছল
বাকিরা ফিরলো বাড়ি।
আমিও সেই প্রেম পিপাসু
পথেরই এক যাত্রী
তোমায় নিয়ে ভাবতে বসে
বিফল দিবা - রাত্রি।

ভালোবাসার এই অধ্যায়ের সূচনাতেই
পেয়েছি শিক্ষা বহু
সারাটা জীবন মনে রাখবো
এসব কথা ভুবহু।
প্রথম প্রেম যে ব্যর্থ হয়
একথাটা প্রমাণিত
প্রকৃত ভালোবাসার কাছে
প্রথম প্রেম পরাজিত।

নতুন প্রেম খোঁজার আসায়
নতুন জীবন শুরু
আমানবিক এই পৃথিবীতে
ভালোবাসাই আমার গুরু।।

-Ayan Rakesh
22/ECE/062

এক বেকারত্বের যন্ত্রণা

জীবন বীনার তারে;
বড়োই দুঃখ জ্বলে।
নেভেনা তা নীরে;
হাজার শ্রমিক দ্বয়ে।

"কখনও বা মানব, কখনও বা দানব!"
জ্বালায় তারে বারে বারে।

দগ্ধ সে নয় তবু,
ভস্ম সে নয় কভু।
উঠেছে সে বারে বারে,
হাজার প্রহারের পরে।।

জানিনা যে সে জিতবে কবে?
এই কঠিন জীবন যুদ্ধে।

দিন যায় ,রাত যায়,
যায় কতো যুগ।

বারে বারে মনে বেজে ওঠে;
বেঁচে থাকার সুর ।।

-Subha Bera
(22/ECE/188)

বিশ্ব পরিবেশ দিবস

-Souvik Das

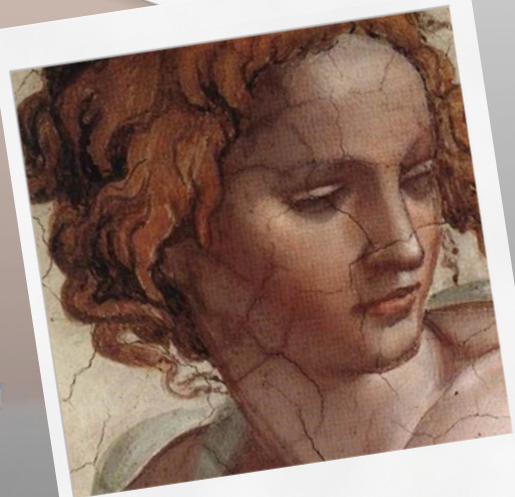
22/ECE/184

আকাশ জুড়ে মেঘ করেছে, বৃষ্টি নেমে আসে,
বৃষ্টি থেমে যেতে দেখি রাস্তা জলে ভাসছে।
পাশেই আছে নিকাসি - নালা, জল যাবার তরে,
তাও কেন রাস্তায় জল জমল এমন করে?
হঠাৎ দেখি নিকাশি -নালায় আবর্জনা জমে,
প্লাস্টিক বোতল, প্যাকেটে জলের যাওয়া গিয়েছে থেমে।
“আয়রে মোরা সবাই মিলে প্লাস্টিক বর্জন করি,
প্লাস্টিকমুক্ত সুন্দর পৃথিবী হাত মিলিয়ে পড়ি।”

হঠাৎসেদিন শুনতে পেলাম ২০৫০ সালে,
পৃথিবীটা সাগরজলে তলায় যাবে চলে।
এর জন্য দায়ী হলবিশ্ব উষ্ণায়ন,
যাহার তরে গলেছে বরফ, জল বাড়ছে এখন।
মোদের বসুন্ধরা ডুবেযাবে তাহার তরে,
গাছ ও পশুপাখিদের সঙ্গে আমরাও যাবো মরে।
“আয়রে সাথে মোরাওযাব সফিপসুদের মিলে করি বৃক্ষরোপন
নইলে কি করে ভ্রমতেপারব বিশ্ব উষ্ণায়ন।”

কারখানা ও মোটর থেকেবেরোয় কালো ধোঁয়া
সেই ধোঁয়া- মেসা বাতাসেস্বাস যায় না নেওয়া।
পৃথিবীতে ফুসফুসেররোগে ১০ সেকেন্ডে একজন
মারা যে যায় তার জন্য দায়ী বায়ু-দূষণ,
বায়ু-দূষণ কমাতে পারে গাছের ঘনবন,
তাই মোদের লাগাতে হবে প্রচুর গাছএখন।
আমরা পুজোর সময় বাজি ফাটাই, মাইক বাজাই জোরে,
তার জন্যও বধিরতা বাড়ছে ঘরে ঘরে।
চাষেরক্ষেতে প্রচুর বিষ ও সারদেবার তরে,
কীটপতঙ্গ, মৌমাছি ওফড়িং যাচ্ছে মরে।
“আয়রে মোরা সবাইমিলে এসব বন্ধ করি।
সুস্থ-সুন্দর-নির্মল পৃথিবী হাত মিলিয়ে গড়ি।

আয়রে মোরা মপথ নিই বিশ্বপরিবেশ দিবসে,
পৃথিবীকে দেবনা যেতে দূষণের করাল গ্রাসে।
বন্ধ করি ব্যবহার করা বেশি বিষ ও সার,
পশুপাখিদেরও দিই বাঁচার অধিকার
দু-হাত ভোরে গাছ লাগাই, থামাই বৃক্ষচ্ছেদন,
রুখি সকলদূষণ ও প্লাস্টিক করি বর্জন।
সুজলা সুফলা শস্য শ্যামলা পৃথিবী গড়ি এখন,
থাকবে না যেথা কোনদূষণ, বিশ্ব-উষ্ণায়ন।।



DRAWING & ARTS

The purpose of art is washing the dust of daily life off our souls

-Pablo Picasso



Bikram Paul
22/ECE/068



Arijit Dutta
22/ECE/054



Milan Pramanik
22/ECE/159



Rishabh Kumar
22/ECE/144



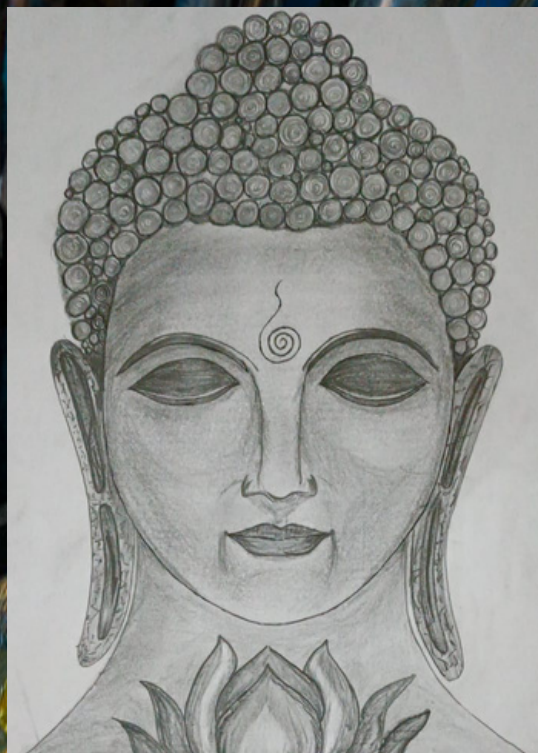
Bishakha Sharma
22/ECE/069



Rishabh Kumar
22/ECE/144



Kanika Maity
22/ECE/095



Satyam kumar
22/ECE/159



Bishakha Sharma
22/ECE/069



Rishabh kumar
22/ECE/144



Subha Bera
22/ECE/188



Arijit Dutta
22/ECE/054



DIGITAL ARTS

Digital Art: Soulful expression through technology



Diptanshu Laha
22/ECE/076



Diptanshu Laha
22/ECE/076



Diptanshu Laha
22/ECE/076



Milan Pramanik
22/ECE/106



Picture Perfect



PHOTOGRAPHY IS A WAY OF FEELING, TOUCHING, LOVING.
WHAT YOU HAVE CAUGHT ON FILM IS CAPTURED FOREVER...
IT REMEMBERS LITTLE THINGS. LONG AFTER
YOU HAVE FORGOTTEN EVERYTHING.



Akshat Thakur
22/ECE/032



Rakesh Jana
22/ECE/139



Arijit Dutta
22/ECE/054



Ravi Prakash
22/ECE/141



Shubham Chatterjee
22/ECE/165



Nitesh Kumar
22/ECE/118



Ravi Prakash
22/ECE/141



Ashish Kumar Rawani
22/ECE/56



Farhan Alam
22/ECE/079



WALL MAGAZINE



iARTEFACTS

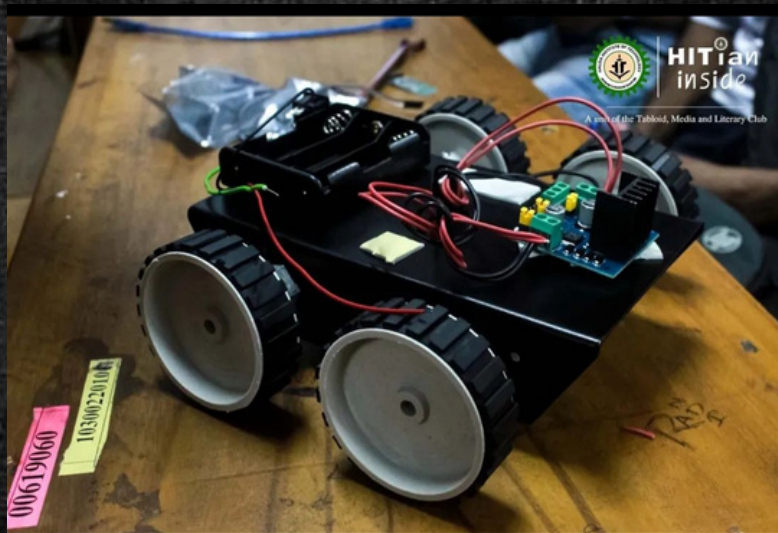
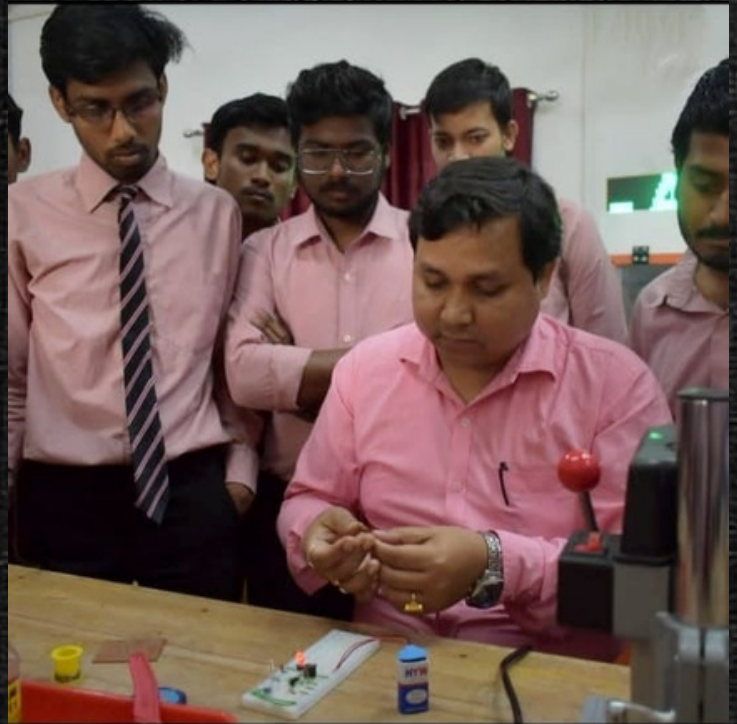
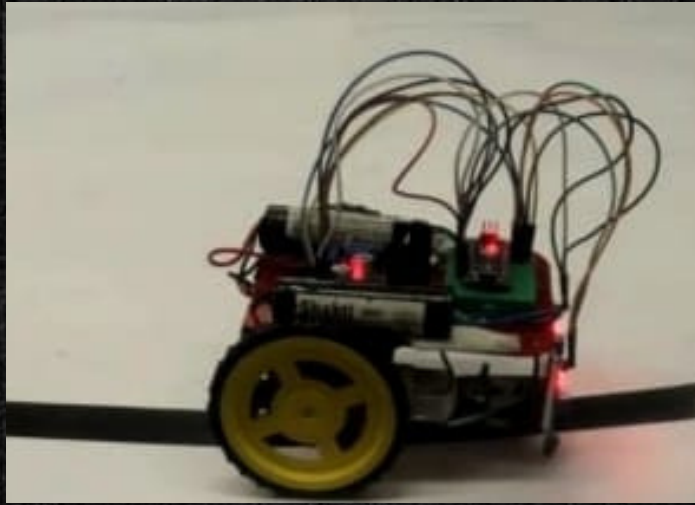


IETE

TEACHER'S DAY



WORKSHOPS



SPORTS



TECH FEST



CULTURAL FEST



TEAM iARTEFACTS



Oisik Das



Ayush Roy



Sneha Rani



Sejal Gupta



Nitin Kaushik



Aman Sarthak



Priya Singh



Rashika Rajeev



Nafisa Sadaf



Rakshat Kashyap



Debalina
Chakaraborty



Rohit Kumar



Anupama Mondal



Satyam Singh
Rajput



Shristi Raj



Nupur Raj



Aditya Prakash



Ankit Kumar



Alka Tiwary

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Aryajeet
Ghosh



Aditi Anand



Sandhya Rani



Shweta Kumari



Durgesh Kumar
Roy



Suman Saurav



Sanjeev Kumbhakar



Ankrit
Samanta



Dibakar Bera



Priya Shaw



Anish Raj



Nitish Kumar



Raj Deepak



Manish Kumar



Deepak Kumar
Pandey



Sampriti Dhal



Priya Das



Pratyush Das

TEAM iARTEFACTS



Shanu Kumar



Gaurav Srivastva



Bhashkar Kumar



Anshu Kumar



Shubham Chatterjee



Arijit Dutta



Nitesh Kumar



Ravi Prakash



Nasir Hussain



Ayan Rakesh



Rishabh Kumar



Satyam Kumar



Farhan Alam



Milan Pramanik

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- Professor Malay Kumar Pandit
- Professor Kisalaya Chakrabarti
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- Assoc. Professor Dr. Jagannath Samanta
- Assoc. Professor Dr. Avisankar Roy
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- Asst. Professor Atanu Pradhan
- Asst. Professor Tapan Maity
- Asst. Professor Pulak Maithy
- Demonstrator Shubhendu Barman
- Demonstrator Ira Samanta
- Demonstrator Asim kuila
- Demonstrator Sunetra Maity
- Demonstrator Parswati Banerjee Instructor

STUDENT'S ACHIEVEMENTS:

FOURTH YEAR :

1. **ARKABHA MUKHERJEE (19/ECE/33)** : Achieved second division from Arians club (state level from school), district level from Sangram samiti football club
2. **ALYONA ROY (19/ECE/16)** : Achieved first position in ICARE debate competition, first position in Extempore in HIT Annual Cultural meet
3. **ANIKET CHATTERJEE (19/ECE/22)** : Achieved second position in ICARE solo dance competition
4. **SACHIN KUMAR (19/ECE/128)** : Achieved second position in Musical Instrument playing competition
5. **SHUBHAM KUMAR (19/ECE/150)** : Achieved first position in Quizzit event conducted by ME CLUB
6. **SEJAL GUPTA (19/ECE/143)** : Achieved first position in Armageddon (Auto Bot)
7. **SNEHA RANI (19/ECE/154)** : Achieved first position in Armageddon (Auto Bot)
8. **PRIYA SINGH (19/ECE/102)** : Achieved first position in Armageddon (Auto Bot)
9. **RASHIKA RAJEEV (19/ECE/115)** : Achieved first position in Armageddon (AutoBot)
10. **SUMANA DAS (19/ECE/168)** : Achieved first position in Armageddon (Auto Bot)
11. **ROHAN KUMAR NONIA (19/ECE/122)** : Achieved third position in video making organized by ME CLUB
12. **PIYUSH KUMAR SINGH (19/ECE/94)** : Achieved third position in video making organized by ME CLUB
13. **PRASHANT KUMAR (19/ECE/96)** : Achieved third position in video making organized by ME CLUB
14. **MANISHA KUMARI (19/ECE/70)** : Achieved third position in video making organized by ME CLUB
15. **Md. AMINUL HAQUE (19/ECE/73)** : Achieved third position in video making organized by ME CLUB

16. **GAUTAM KUMAR (19/ECE/51)** : Achieved third position in video making organized by ME CLUB

17. **SAMEER KUMAR (19/ECE/131)**: Achieved second position in video making organized by ME CLUB

18. **SHREYAN GAUTAM (19/ECE/149)** : Achieved third position in Painting competition organized by Art and Craft club

19. **AKSHAY KUMAR (19/ECE/15)** : Achieved first position in Armageddon (Robo Rush)

20. **TASNEEM AHMAD ANSARI (19/ECE/178)** : Achieved third position in circuitrix event organized by IEEE

21. **ARYAN KUMAR (19/ECE/38)** : Achieved first position in Armageddon (Robo Rush), second position in circuitrix event organized by IEEE

22. **JYOTIRMOYEE SANTRA (19/ECE/61)** : Achieved first position in Armageddon (Robo Rush)

23. **AVINASH KUMAR JHA (19/ECE/41)** : Achieved first position in Armageddon (Robo Rush)

24. **ARTHA BISWAS (19/ECE/36)** : Achieved third position in Chess competition (Shatranj)

25. **PARTHIB SEN (19/ECE/93)** : Achieved second position in Mechnovate 2K20 (Meaningful assembly)

26. **AMAN SNEHI (19/ECE/20)** : Achieved third position in Armageddon (Robo Rush)

27. **DAYEETA ADHIKARY (19/ECE/47)** : Achieved third position in Armageddon (Robo Rush)

28. **AMAN SARTHAK (19/ECE/19)** : Achieved third position in Armageddon (Robo Rush)

SECOND YEAR :

1. **PRIYA DAS (21/ECE/104)** : Achieved third position in long jump (sports day)

2. **BISHNU CHATTERJEE (21/ECE/043)** : Finallist in NEC challenge organised by E-CELL IITBOMBAY

FIRST YEAR :

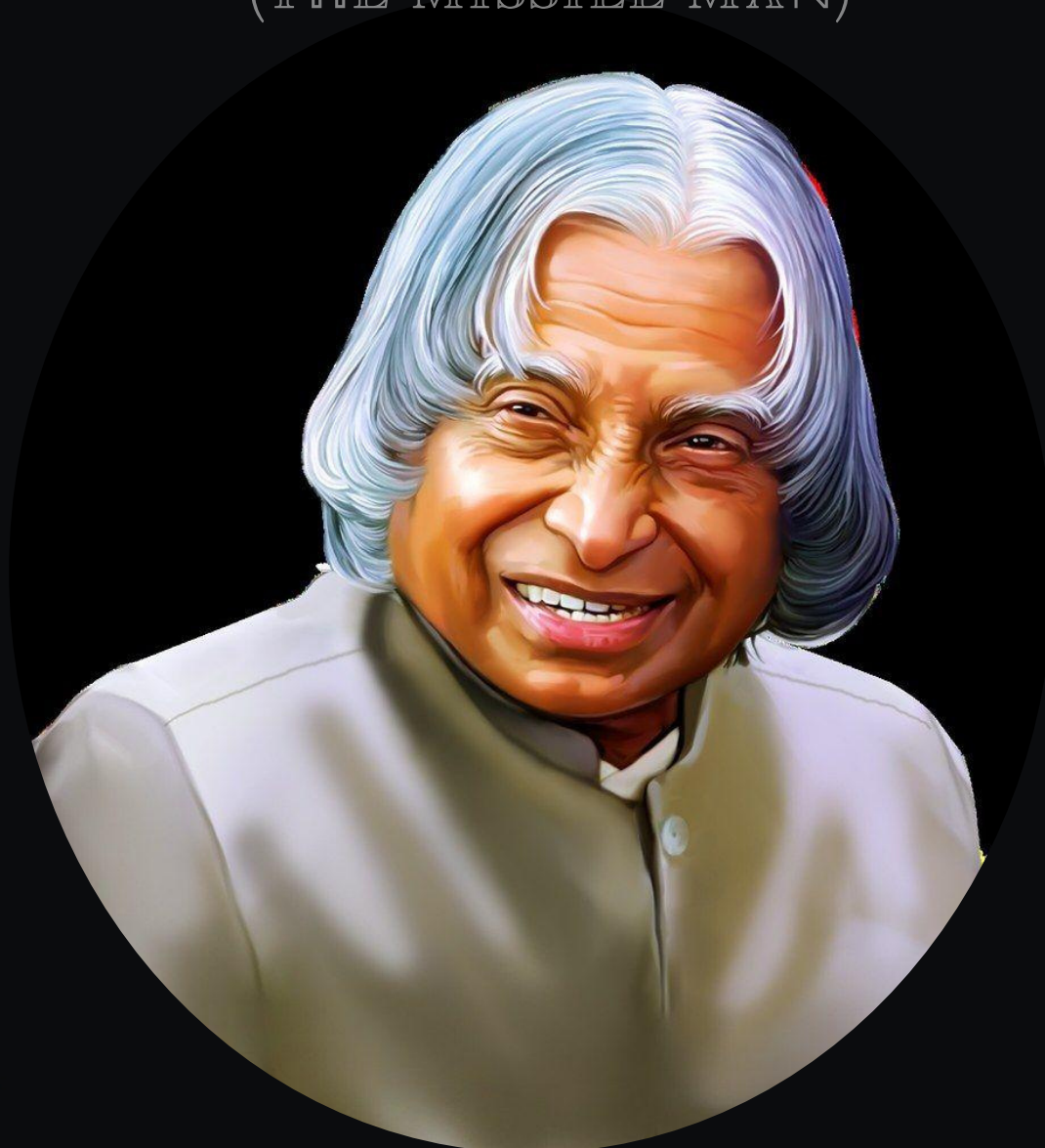
1. **UJJAWAL KUMAR (21/ECE/104)** : Achieved third position in high jump (sports day)

2. **SOHAM CHOWDHURY (22/ECE/172)** : Achieved third position in naturegenix (Prayukti)

“Dream is not that which you see while sleeping it is something that does not let you sleep.”

— A.P.J. Abdul Kalam

(THE MISSILE MAN)



DEPARTMENT OF ELECTRONICS AND COMMUNICATION

HALDIA INSTITUTE OF TECHNOLOGY

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lArtefacts



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