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CYBERNETICS

TECH & INNOVATION TODAY

THE DIGITAL FRONTIER



HUMAN + MACHINE

HOW TECHNOLOGY IS RESHAPING THE WAY WE LIVE, LEARN AND CONNECT

ARTIFICIAL INTELLIGENCE

EXPLORING INTELLIGENT SYSTEMS AND THE FUTURE OF COMPUTING

Where human curiosity meets machine intelligence.

THE COMPUTING REVOLUTION

SMARTER SYSTEMS, BRIGHTER FUTURES.

COMPUTER SCIENCE MAGAZINE | 2026–27

SCIENCE / DESIGN / SOCIETY

MEET THE TEAM

THE STUDENT EDITORS



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FROM THE EDITOR'S DESK

Welcome to the World of Innovation, Intelligence & Imagination!

Curiosity sparks innovation, creativity brings ideas to life, and technology transforms the world!

Welcome to the latest edition of our Computer Science Newsletter, where the fascinating world of technology meets imagination, discovery, and endless possibilities. In an era where Artificial Intelligence is revolutionising healthcare, coding is powering innovation, and digital technologies are reshaping the way we live, learn, and connect, Computer Science has become much more than a subject—it is the language of the future!

At G.D. Goenka Public School, Dwarka, we encourage our students to think beyond the ordinary, explore emerging technologies, and transform their creative ideas into meaningful innovations. This edition takes you on an exciting journey through the world of AI, coding, digital advancements, and technological creativity, showcasing how young minds can become tomorrow's innovators and problem-solvers.

So, get ready to explore, discover, question, and imagine! Turn the pages, spark your curiosity, and step into a world where every idea has the potential to create an impact and every innovation begins with a question.

Happy Reading! Let the journey of discovery begin!



Ms Leena Malhotra
HoD, Computer Science

INDEX

CYBERNETICS · TECH & INNOVATION TODAY

STORY	PAGE
Who Controls Whom? Cybernetics and AI	8
How Can a Machine Feel What You Feel?	9
DNA Data Storage	10-11
Cybernetics: The Science of Self-Correction	13-14
Robotics: Shaping the Future One Innovation at a Time	16
Tokenization Quirks	17-18
Beyond the Silicon Census	19-20
Post-Quantum Cryptography	21

INDEX

CYBERNETICS · TECH & INNOVATION TODAY

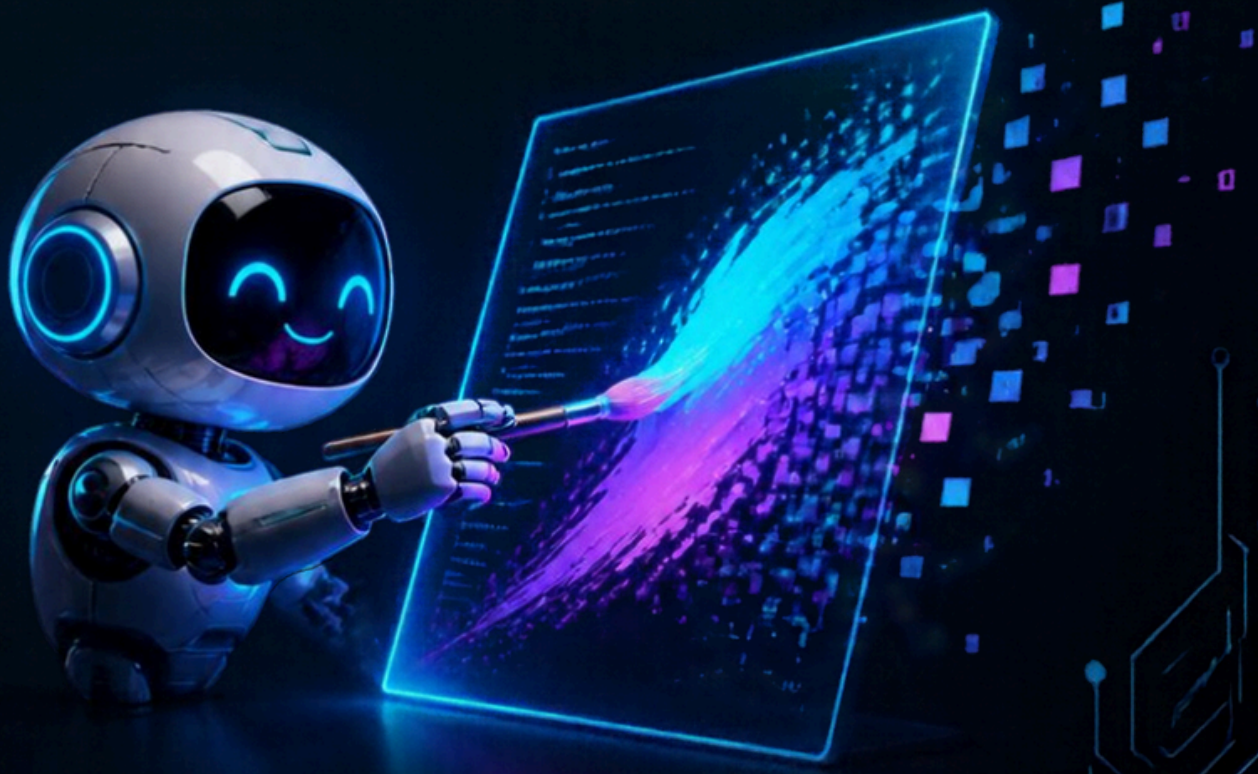
STORY	PAGE
Quantum Computing	22-23
Beyond Chatbots	24
How AI Is Helping Save Our Oceans	25
Smart Airports	27
The Green Price of Artificial Intelligence	28
The Right Way to Use AI	29-30
What Happens in the Chatbot Doesn't Stay in It	32
From Generative AI to Agentic Era	33

INDEX

CYBERNETICS · TECH & INNOVATION TODAY

STORY	PAGE
The Ghost in Your Pocket	34
Problems Your Computer Can Never Solve	35
Role of AI in the Life of a Student	36
AI Grind	38
Robotics	39
Achievements	40-42
Inter-House Competitions	43

A computer is like a canvas. Code gives you the colours; imagination shows you what to paint.



WHO CONTROLS WHOM?

Cybernetics and AI

By Jigya Walia • Class XII A2

If machines can learn, adapt and correct their mistakes, why is human control still important?

Machines are not just tools that do what they are told to do anymore. Now, they can think through information and respond to new situations. Many technologies, from navigation apps to smart traffic lights, are based on feedback and control.

Cybernetics is the science of control and communication in the animal and the machine.

Cybernetics uses observation, comparison, action and feedback to adapt to change. Smart traffic lights adjust timings, while AI-powered navigation apps suggest alternative routes. However, incomplete or outdated data can lead to errors.

Machines analyse information quickly, but biased data can produce unfair outcomes. Human oversight remains essential to ensure safety, fairness and privacy.



Technology can assist human decisions, but human judgement must guide its use.

HOW CAN A MACHINE FEEL WHAT YOU FEEL?

The Fascinating Science of Artificial Touch

By Yashika Gogna, XII A2

Imagine picking up a fragile glass with an artificial hand and knowing exactly how tightly to grip it. Advances in cybernetics, robotics and neuroscience are bringing this possibility closer to reality.

Our skin contains receptors that detect pressure and vibration. They send signals through nerves to the brain, helping us sense objects and adjust our grip. Artificial hands use sensors and feedback systems to measure force and regulate movement—a central principle of cybernetics.

But detecting pressure is different from feeling it. Researchers are exploring vibrations and electrical stimulation of nerves to communicate sensory information to prosthetic users, potentially improving their control and confidence.

Artificial touch could support everyday tasks, robotic surgery and the handling of delicate objects. Yet recreating the richness of human touch, including texture and temperature, remains challenging.

By connecting machines, information and living systems, cybernetics brings technology closer to the experience of touch—and helps us understand what makes us human.



A delicate grip. A remarkable possibility.

DNA DATA STORAGE

Could the Future of Computers Be Hidden Inside Biology?

By: Priyanshi Chaudhary | Class XII-A1

Every second, humanity creates an unimaginable amount of digital information—from photographs and videos to scientific discoveries and artificial intelligence models. As this digital universe continues to expand, one question becomes increasingly important: Where will we store all this information in the future? Our current storage technologies, including hard drives, solid-state drives (SSDs), and cloud servers, have limitations. They require physical space, consume energy, and eventually wear out. As the demand for data storage grows, scientists are exploring an extraordinary alternative—one that has existed in nature for billions of years. Surprisingly, the solution may not lie in a more advanced computer chip, but in the very molecule that carries the blueprint of life: DNA.

From the Language of Life to the Language of Computers

DNA, or deoxyribonucleic acid, stores the genetic instructions that guide the development and functioning of living organisms. Its information is encoded using four chemical bases: Adenine (A), Thymine (T), Cytosine (C), and Guanine (G). But what if these four letters could do more than carry biological instructions? What if they could also preserve our digital world? This is precisely what researchers are exploring through DNA data storage. Computers represent information using binary digits—0s and 1s. To store this information in DNA, specialised algorithms translate binary data into sequences of the four DNA bases. These sequences are then chemically synthesized in a laboratory and preserved for future use. When the information is needed, scientists sequence the stored DNA, and computer software translates the resulting genetic code back into binary data, reconstructing the original digital files. In essence, the same molecule that stores the instructions for life can also be used to store the knowledge created by humanity.



DNA DATA STORAGE

A Tiny Molecule with Enormous Potential

What makes DNA particularly fascinating as a storage medium is its extraordinary information density. Under certain theoretical assumptions, one gram of DNA could store around 215 petabytes of data, equivalent to approximately 215 million gigabytes. That is an astonishing amount of information packed into a quantity of material small enough to fit on a fingertip. DNA also offers another remarkable advantage: longevity. Unlike conventional storage devices, which can become unreliable over time, DNA can preserve information for exceptionally long periods when stored under suitable conditions. Research on ancient DNA has demonstrated that genetic material can survive for thousands of years, and in some cases much longer, under favourable environmental conditions.

Imagine preserving scientific discoveries, historical records, libraries, and humanity's collective knowledge in a material that occupies remarkably little space and can remain readable for generations. DNA storage could one day offer a new way to build long-lasting archives without requiring enormous data centres filled with conventional storage devices.

But if DNA Is So Powerful, Why Aren’t We Using It Already?

Despite its remarkable potential, DNA data storage is not yet ready to replace our everyday storage devices. The biggest challenge is speed. Writing information into DNA requires synthesising specific sequences of chemical bases, a process that remains relatively slow and expensive compared with saving a file to an SSD. Reading the information also requires specialised sequencing equipment and computational processing. As a result, retrieving a file from DNA is currently far less convenient than opening one from a conventional storage device. Accuracy presents another challenge. Errors can occur when DNA is synthesised or sequenced, potentially altering the stored information. This is where computer science becomes crucial. Error-correction algorithms can detect and compensate for errors, helping researchers recover the original data even when some of the DNA sequences contain mistakes. Scientists are also working to reduce synthesis costs, improve reading and writing speeds, and develop more efficient methods of encoding and retrieving information.

CONCLUSION

In conclusion, DNA data storage is a remarkable convergence of computer science, molecular biology, chemistry, and information theory. It demonstrates how concepts such as algorithms, binary encoding, and error correction can be applied to a biological molecule to address a challenge created by our increasingly digital world.



The future begins with a curious mind, a bold question, and the courage to create.



CYBERNETICS • 2026–27

CYBERNETICS

The Science of Self-Correction

By Gurbani Singh Dhiman , XII A2

01 INTRODUCTION

In 1948, the mathematician Norbert Wiener published *Cybernetics: Or Control and Communication in the Animal and the Machine*, introducing a field that would reshape modern science. He drew the name from the Greek *kybernetes*, meaning "steersman," and the choice was deliberate. A steersman never sets a course once and walks away. He observes, compares, and corrects continuously. Cybernetics is the study of this principle across every kind of system.

02 THE CORE IDEA: FEEDBACK

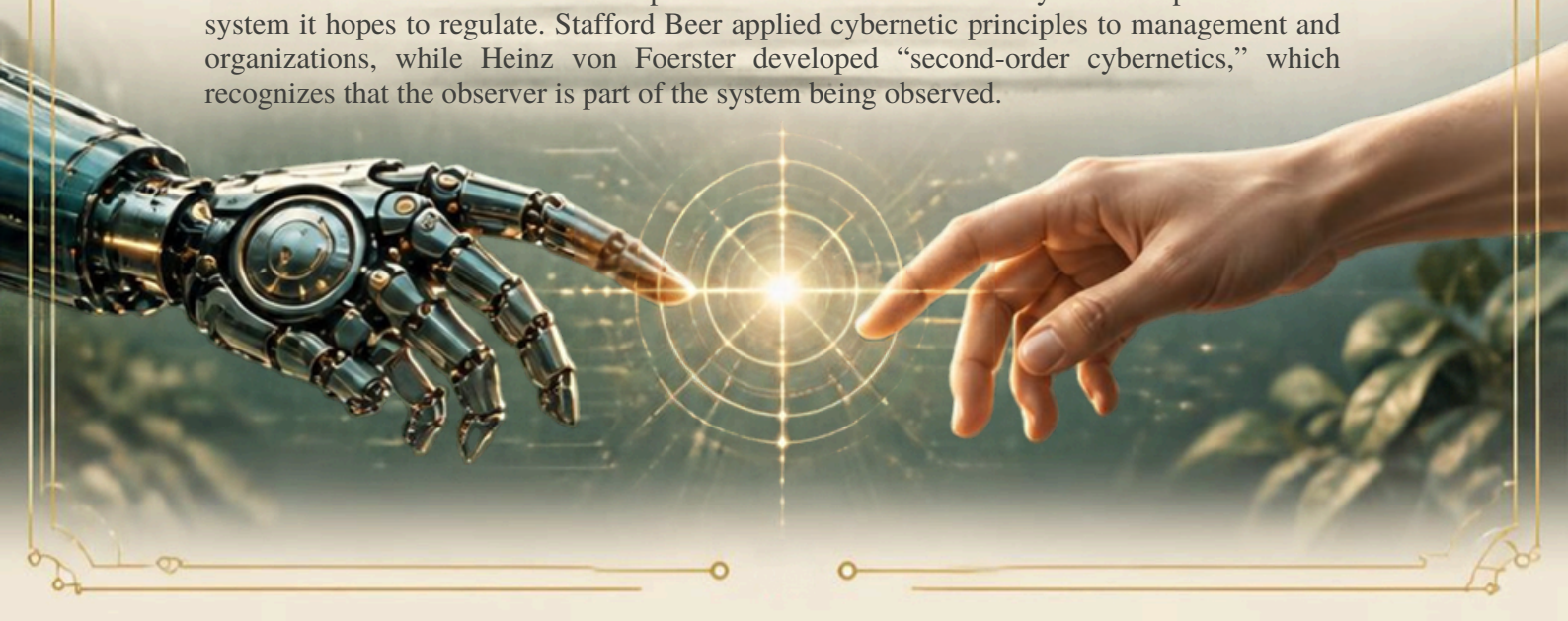
At the center of cybernetics lies the feedback loop: a system measures its current state, compares it with a desired goal, and adjusts its behavior to reduce the difference. Two forms are central. Negative feedback counteracts deviation and produces stability, as in a thermostat that switches off a heater once a target temperature is reached. Positive feedback amplifies change, as in the screen of a microphone placed near its own speaker.

Biology offers the clearest examples. The human body maintains a core temperature near 37°C through sweating, shivering, and changes in blood flow. The physiologist Walter Cannon called this stability homeostasis, and cybernetics gave scientists a mathematical language to describe it.

03 AN INTERDISCIPLINARY ORIGIN

Cybernetics emerged from a remarkable convergence of fields. During the Second World War, Wiener worked on anti-aircraft fire control, where a system had to predict a moving target's position and correct its aim continuously. Around the same period, Warren McCulloch and Walter Pitts proposed a mathematical model of the neuron, and Claude Shannon formalized information theory. The Macy Conferences (1946–1953) brought together mathematicians, neurologists, anthropologists, and psychologists to examine a shared question: how do systems, living or built, use information to regulate themselves?

Later thinkers extended the field. W. Ross Ashby introduced the Law of Requisite Variety, which states that a controller must possess at least as much variety in its responses as the system it hopes to regulate. Stafford Beer applied cybernetic principles to management and organizations, while Heinz von Foerster developed "second-order cybernetics," which recognizes that the observer is part of the system being observed.



INFORMATION. ADAPTATION. PURPOSE.

04 INFLUENCE ON MODERN TECHNOLOGY

The legacy of cybersecurity is visible throughout contemporary technology. **Robotics** depends on sensor feedback to balance, grasp, and navigate. **Industrial automation** relies on control loops that keep manufacturing precise. **Autonomous vehicles** continuously compare sensor data against intended trajectories. **Machine learning** itself echoes cybernetic logic: a model makes predictions, measures its error, and adjusts its parameters to improve. The field also helped inspire early **artificial intelligence** research, neural networks, and the study of complex adaptive systems.

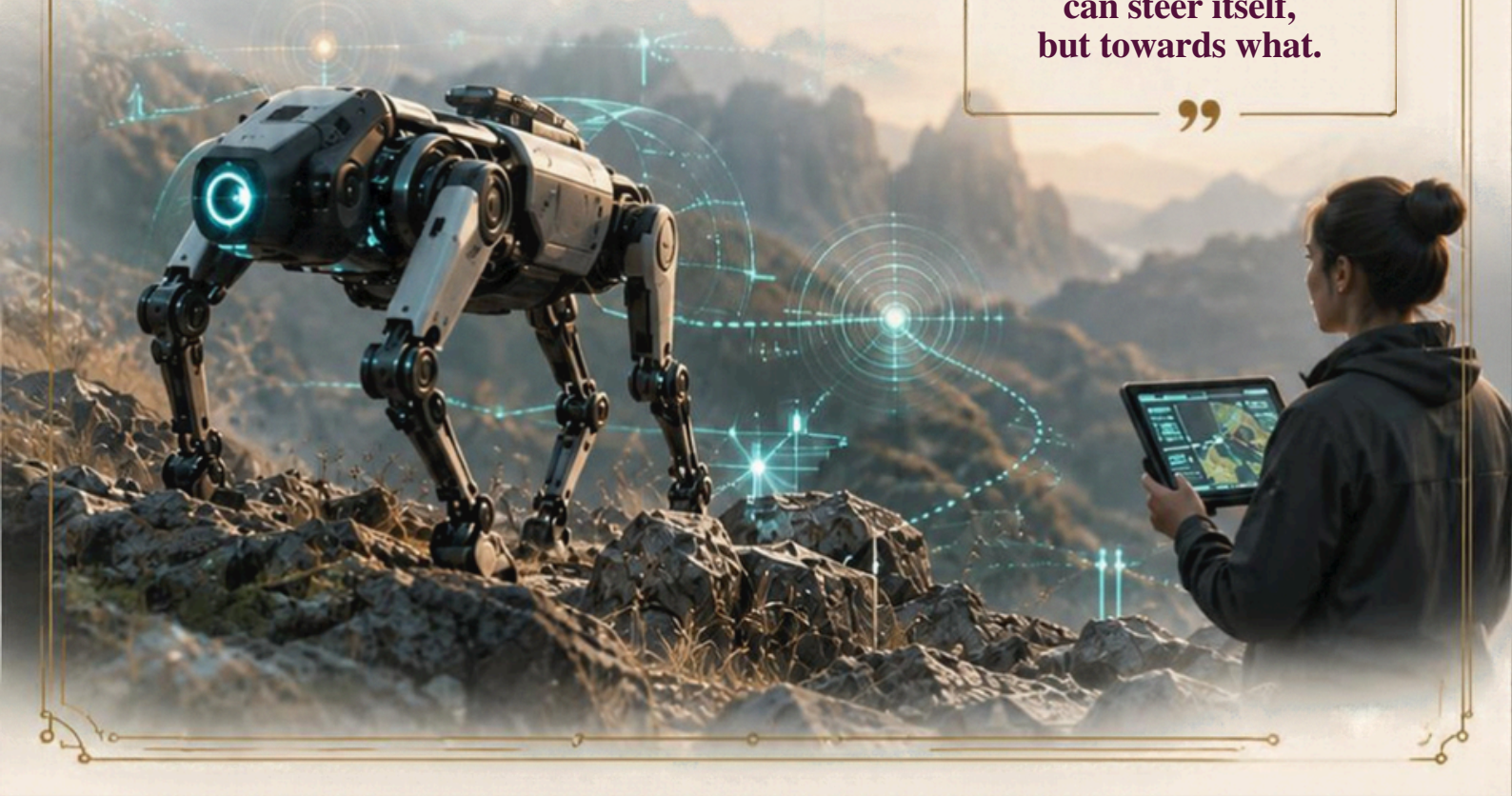
05 ETHICAL DIMENSIONS

Wiener was among the first scientists to consider the social consequences of automation. In The Human Use of Human Beings (1950), he cautioned that machines pursuing goals without human judgment could produce harmful outcomes, and that the purposes built into a system deserve as much scrutiny as its engineering. This concern has grown more relevant with the rise of algorithmic decision-making, where the design of a feedback loop determines whose interests it serves.

06 CONCLUSION

Cybernetics endures because it offers a single framework for understanding organisms, machines, and societies. Its central insight is that stability and adaptation arise from information, not from rigid control. As automated systems grow more capable, the field's founding question remains essential: not only how a system can steer itself, but toward what.

> **Not only how a system can steer itself, but towards what.**



TECHNOLOGY & HUMANITY

Beyond every screen is a **human story.**

Build technology that **respects it.**



CYBERNETICS · 2026-27

ROBOTICS

Shaping the Future One Innovation at a Time

By Dhriti Pandey | Class XII-A1

BEYOND THE FACTORY

Robots are moving into hospitals, farms, classrooms and homes. Combining science, technology, engineering and mathematics, robotics is changing how we live and work.

Robotic tools can assist surgeons with precise movements, help farmers plant and harvest crops, and explore places that are dangerous for people.

PROGRESS WITH PURPOSE

Automation can affect jobs and workers. Human judgement, creativity and empathy remain essential. Robotics should develop with safety, fairness and people in mind.

A FUTURE WE CAN SHAPE

For students, robotics encourages creativity, teamwork and problem-solving. It opens pathways into engineering and computer science.

The goal is to use robots as tools that help people achieve more—and ensure that progress benefits everyone.



Built with imagination. Guided by humanity.

TOKENIZATION QUIRKS

Words in pieces. Meaning in patterns.

By Aarush Sonker | X-
A

WHAT IS A TOKEN?

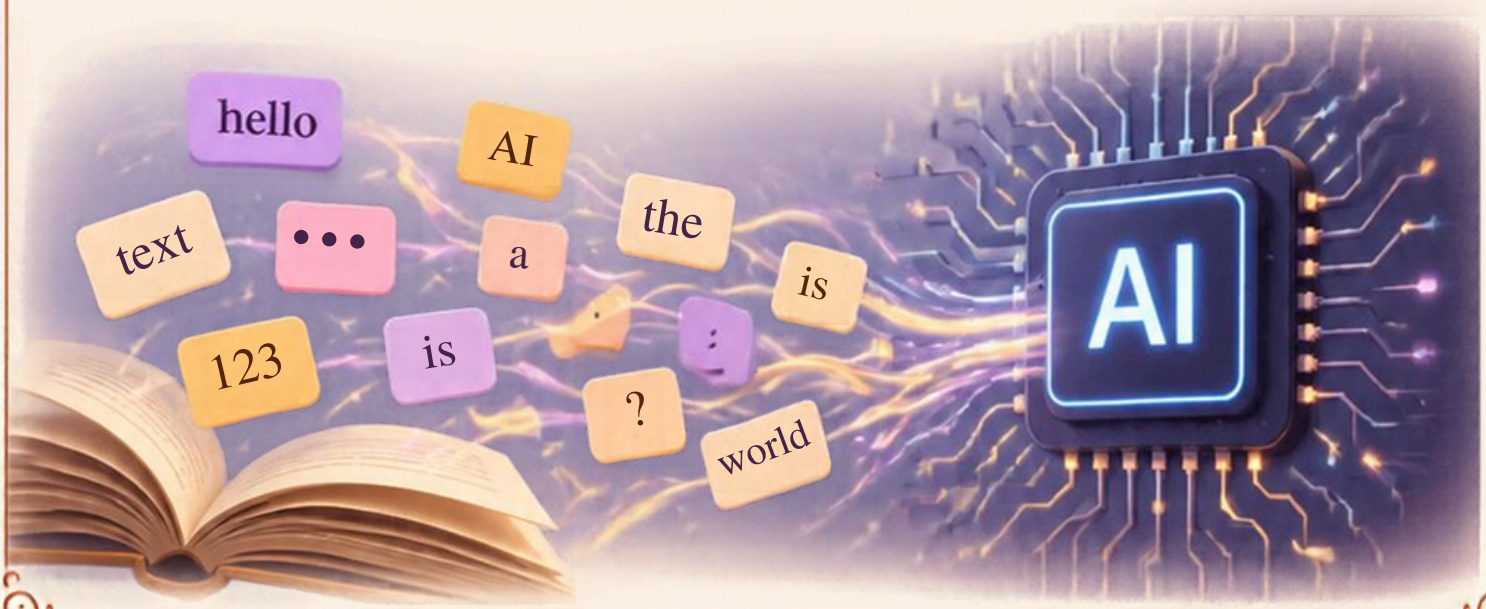
AI can write poetry, but it can't always count letters. The reason is tokenization quirk. First of all, let's really understand what a token really is. When you type a sentence to an AI, it doesn't see letters or even whole words. A program called a tokenizer first chops your text into chunks, and each chunk gets replaced by a number.

A DIFFERENT VIEW OF TEXT

"Strawberry" might become three chunks like 'str', 'aw', and 'berry', and the AI only ever sees three numbers, never the individual letters. Now, this is the reason why "Tokenization Quirks" really occur, due to this chopping! But just because of this, we can't really call the AI "stupid", instead, it's just working with a different view of text than we are.

str + **aw** + **berry**

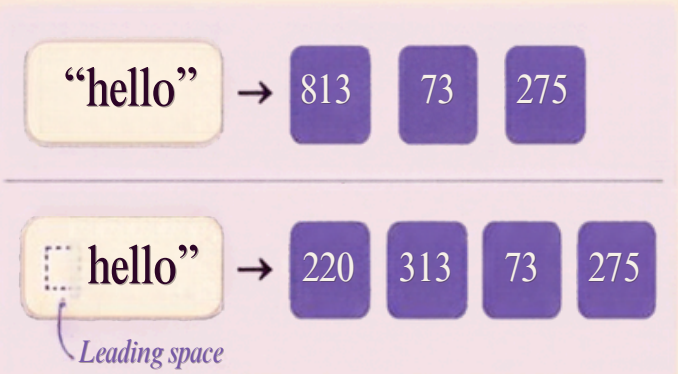
Illustrative split—actual tokens depend on the tokenizer.



WHY THE CUTS MATTER

WHO DECIDES THE SPLIT?

So who decides where the cuts go? The vocabulary is the model's fixed list of chunks. GPT-4's has roughly 100,000. And the chunks are picky about small details. A space merges with the word after it, so “hello” and “hello” produce different tokens.



“hello” produces different tokens.

LANGUAGE CHANGES THE COUNT

Also! Spaces aren't the only thing that changes the cut. Language does too. The same texts in different languages can differ in token count as well! It can be up to 15 times, across 17 tokenizers that were tested, even those built for multilingual use. The study that concludes this: Petrov et al., NeurIPS 2023.



THE STRAWBERRY PUZZLE

So when an AI miscounts the r's in the word strawberry, it isn't being careless; it is instead seeing words in pieces, the way we would see a barcode or the digits!



strawberry

Answer: 3.



BEYOND THE SILICON SENSES

How AIoT is Giving the Physical World a Mind of Its Own

By Rachit Singh XII A1

We once built machines that followed instructions. Then we connected them so they could exchange information. Today, Artificial Intelligence of Things (AIoT) combines connected sensors with AI to help systems interpret data and respond to their surroundings.

THE EDGE REVOLUTION

Traditionally, sensors sent data to distant computers for processing. AIoT can bring some of that intelligence closer to the source. Lightweight machine learning models running on chips and local devices analyse vibrations, temperature changes and acoustic signals.

Local processing can reduce network traffic and response times. It also allows some functions to continue when connectivity is limited. Cloud systems still play an important role, while edge devices handle tasks that benefit from rapid local decisions.

FROM REACTIVE TO PROACTIVE

In manufacturing and logistics, connected equipment can monitor performance continuously. AI models look for unusual patterns that may indicate wear or developing faults.

These signals help maintenance teams investigate problems and plan servicing before a breakdown. Predictive maintenance can reduce unplanned downtime, although reliable results depend on good data, suitable models and human oversight.

UNDERSTANDING HUMAN INTENT

Multimodal AI combines information from sources such as cameras, microphones and sensors. This can help smart environments interpret spoken requests and recognise relevant activity.

Natural-language controls may make some systems easier to use. However, noise, ambiguity and unfamiliar situations remain challenges. Clear controls and human review are important when decisions affect safety.



SUSTAINABILITY AND SMARTER SYSTEMS

AIoT can support more efficient resource use. Smart buildings can adjust heating and cooling to occupancy, while farm sensors can inform irrigation decisions and help reduce water waste.

Energy-efficient hardware and carefully designed local processing can reduce some computing demands. Federated learning allows certain models to learn from distributed data without routinely collecting all raw records in one place, but privacy still requires strong safeguards.

A CONNECTED FUTURE

AIoT brings together sensing, communication and analysis. Its promise is infrastructure that responds more intelligently to people and changing conditions.

That future requires dependable technology, responsible data practices and thoughtful design. As AI and connected devices converge, our surroundings could become more useful partners in human progress.

> **“IoT connects the world. AI helps it respond.”**



POST-QUANTUM CRYPTOGRAPHY

By Jannat Sofi Class VII-E

THE FUTURE LOCK OF THE DIGITAL WORLD!

FUN FACTS ABOUT POST-QUANTUM CRYPTOGRAPHY

DID YOU KNOW

1. Quantum computers could break today's internet security in seconds.
2. Shor's algorithm is the quantum "lockpick" that threatens RSA encryption.
3. Grover's algorithm halves the strength of symmetric keys, making them easier to crack.
4. Lattice-based cryptography is like solving a 3D maze — even quantum computers get lost.
5. Code-based cryptography uses error-correcting codes, the same idea behind CDs and DVDs.
6. PQC runs on normal laptops and servers, not quantum machines.
7. Some PQC algorithms are based on math puzzles so hard they've resisted attacks for 40+ years.
8. Hash-based cryptography builds security from digital fingerprints.
9. PQC is part of the global race to secure secrets before quantum computers arrive.
10. NIST finalized PQC standards in 2024 — a historic milestone.
11. PQC protects data that must stay safe for decades, like medical records or national archives.
12. PQC is sometimes called "quantum-proof armor" for the internet.
13. Banks and governments are already testing PQC to secure transactions.
14. PQC is not science fiction — it's being deployed today in pilot projects.
15. PQC algorithms often use huge keys, sometimes thousands of bytes long.
16. PQC is essential for space missions, where data must remain secure for years.
17. PQC is a mathematics-powered shield, proving math can save the digital world.
18. PQC ensures your WhatsApp chats could stay private even in a quantum future.
19. PQC is part of the "crypto-agility" movement, meaning systems can swap algorithms quickly.
20. PQC is a reminder that technology evolves, but so must security.



QUANTUM COMPUTING

Unlocking the Future of Technology

By Arham Oswal XII A1



THE QUANTUM JOURNEY

Quantum computing is an advanced field of computer science that uses the principles of quantum mechanics to tackle problems more efficiently than traditional computers.

- **1980** — **Paul Benioff:** proposed a quantum model of computation.
- **1981–1982** — **Richard Feynman:** suggested using quantum systems to simulate quantum phenomena.
- **1985** — **David Deutsch:** described a universal quantum computer.
- **1994** — **Peter Shor:** developed an algorithm for efficiently factoring large numbers, with implications for RSA encryption.
- **2016** — **IBM:** made a programmable quantum processor available through cloud access.

INSIDE A QUANTUM COMPUTER

At the heart of a quantum computer are qubits made from systems like superconducting circuits, trapped ions, or photons. These qubits are extremely delicate and must be cooled to near absolute zero to function. Quantum gates manipulate qubits, while measurement collapses their states to produce answers. The entire process relies on maintaining coherence, the fragile state that enables quantum behavior.

- **Hardware:** Qubits, quantum gates, cryogenic systems, and dilution refrigerators that keep qubits at millikelvin temperatures.
- **Control Systems:** Precision electronics and microwave pulses manipulate qubits and read out results with extreme accuracy.
- **Software:** Quantum programming languages, compilers, and simulators that translate algorithms into instructions for quantum hardware.
- **Research Areas:** Error correction, qubit stability, scalable architectures, and practical applications in cryptography, chemistry, and optimization.



From Qubits to Possibilities

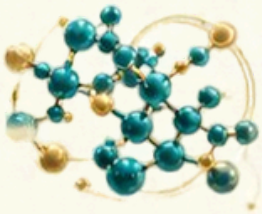
Reliability • Discovery • Security

Making Qubits Reliable

Qubits are highly sensitive to their environment. Tiny disturbances can cause errors through a process called decoherence. Researchers use quantum error correction, isolation, and advanced materials to protect qubits and keep them stable. Building reliable qubits is one of the biggest challenges on the path to practical quantum computers.

Drug Discovery & Pharmaceutical

Quantum computing has the potential to revolutionize many industries. It can speed up drug discovery, optimize logistics, strengthen cybersecurity, and improve financial modeling.



Cybersecurity & Cryptography

As technology advances, quantum computers will become impossible to ignore, unlocking solutions to problems once thought unsolvable.



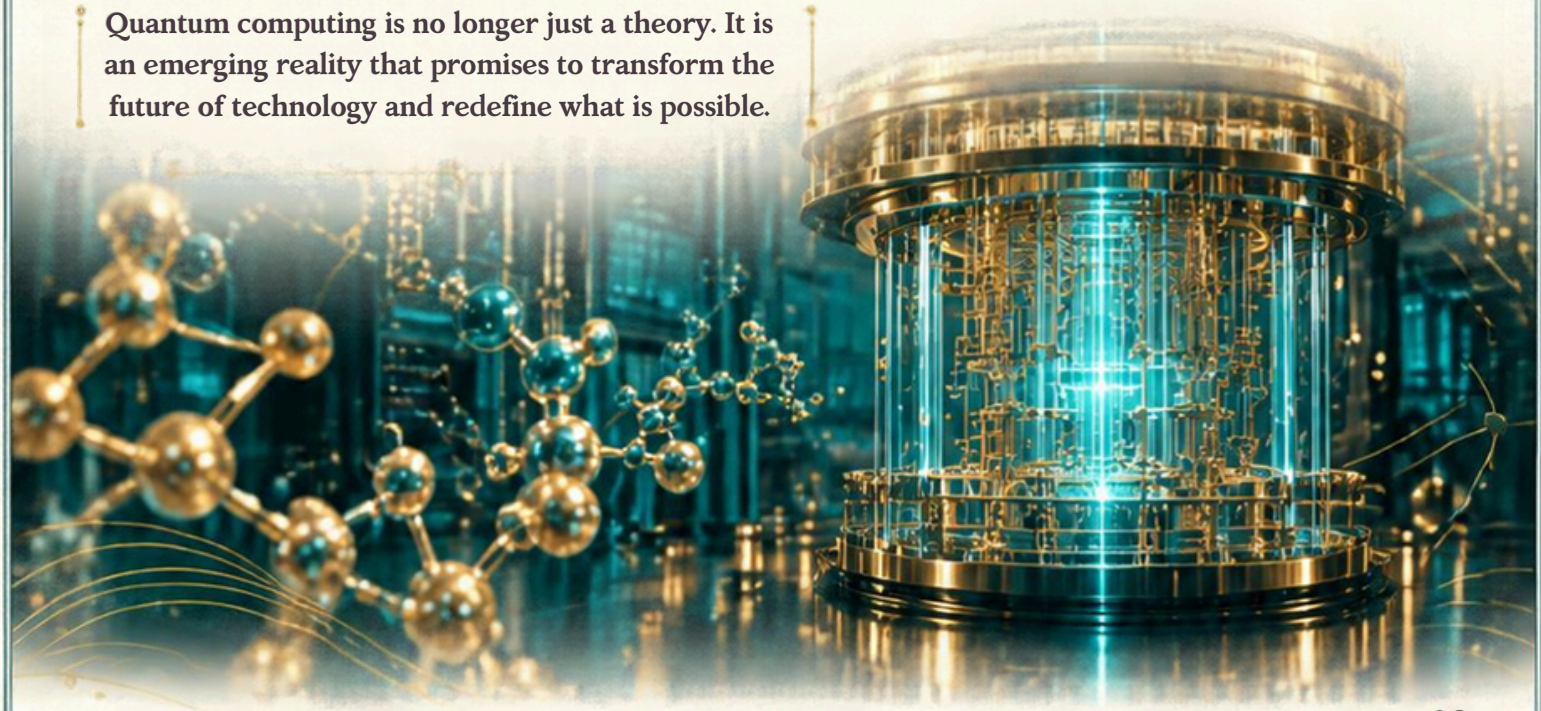
WHAT IS A QUBIT?

A qubit is the basic unit of quantum information.



A qubit can exist in a superposition of the states 0 and 1.

Quantum computing is no longer just a theory. It is an emerging reality that promises to transform the future of technology and redefine what is possible.



BEYOND CHATBOTS

Agentic AI — The Next Leap in Artificial Intelligence

By Doipayan Dey | Class XI-A1

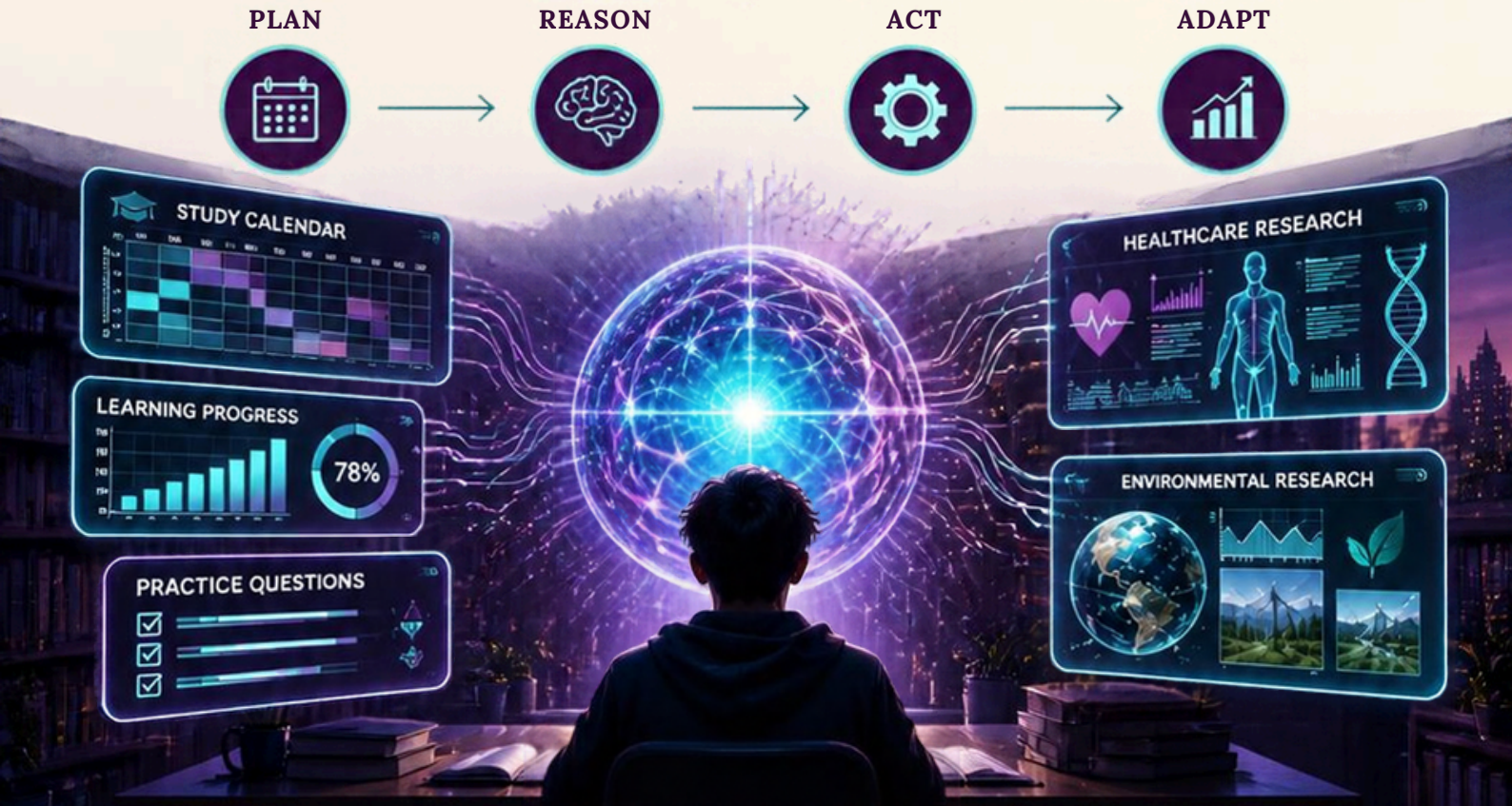
Artificial Intelligence has evolved at an astonishing pace over the last few years. While AI-powered chatbots have transforme the way people search for information, write content, and solve problems, the latest breakthrough is something even more remarkable—Agentic AI. Recognized as one of the most significant technological advancements of recent times, Agentic AI represents a new generation of intelligent systems capable of planning, reasoning, carrying out complex tasks with minimal human intervention.

Unlike conventional AI, which merely responds to instructions, Agentic AI functions more like a proactive assistant. It can analyze objectives, formulate strategies, make informed decisions, and adapt its actions according to changing circumstances. In simpler terms, it does not just answer questions—it actively works towards achieving a goal.

Imagine a student preparing for examinations. Instead of merely explaining a difficult concept, an Agentic AI system could design a personalized study schedule, monitor progress, recommend revision techniques, generate practice questions, and modify the learning plan based on the student's strengths and weaknesses. Similar applications exist in healthcare, business, finance, scientific research, and environmental protection.

Despite its extraordinary capabilities, Agentic AI also presents important ethical considerations. Transparency, fairness, accountability, privacy, and responsible human oversight remain essential. As education increasingly embraces AI technology, students will need creativity, criti thinking, and ethical reasoning alongside technical skills.

The future of artificial intelligence belongs to intelligent agents that can think strategically, act purposefully, and assist humanity in solving complex global challenges. If developed responsibly, Agentic AI has the potential to redefine education, healthcare, and scientific research.



How AI is Helping Save Our Oceans

By Rishaan Virmani | Class VIII-D



A Smarter Way to Protect Our Planet

We often talk about AI helping humans simplify their tasks, giving quick results, and we also talk about how AI disrupts human jobs. But have you ever thought about how AI can help protect our planet, especially our oceans?

More Than Robots and Games

We may particularly picture AI as chatting robots or video games. But in reality, AI can do much bigger things. Every year, millions of tons of plastic waste end up in the sea, threatening sea turtles, fish, and birds. Finding and collecting this trash in vast oceans used to be almost impossible. Now, smart underwater drones powered by AI are changing the game.

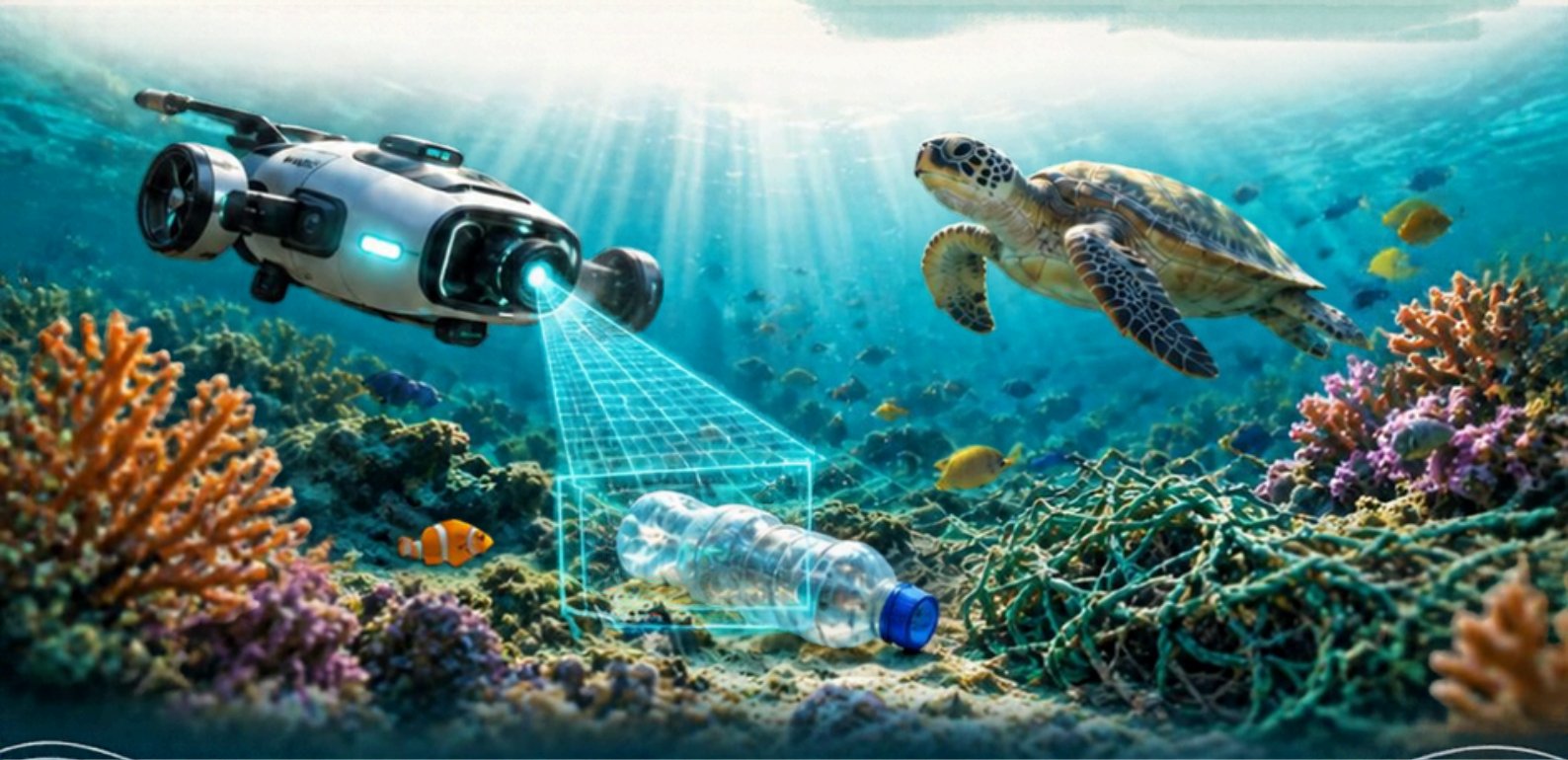
How Underwater Drones Help

These swimming robots use camera vision to scan the water. They can instantly spot plastic bottles and fishing nets while ignoring coral reefs and marine life. By learning from thousands of pictures, AI helps the drones navigate underwater currents, find polluted zones, and guide cleanup boats to the right spot so they can start cleaning the mess.

Technology for a Blue Future

Technology isn't just about screen time; it can be a real-life superhero. Thanks to AI, keeping our oceans blue and healthy for the future is becoming a reality!

"Smarter technology. Cleaner oceans."



Innovation with a purpose.

True innovation makes life better— and leaves the planet better too.



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SMART AIRPORTS

How AI is Transforming Aviation

By Aarav Arya | Class X-G

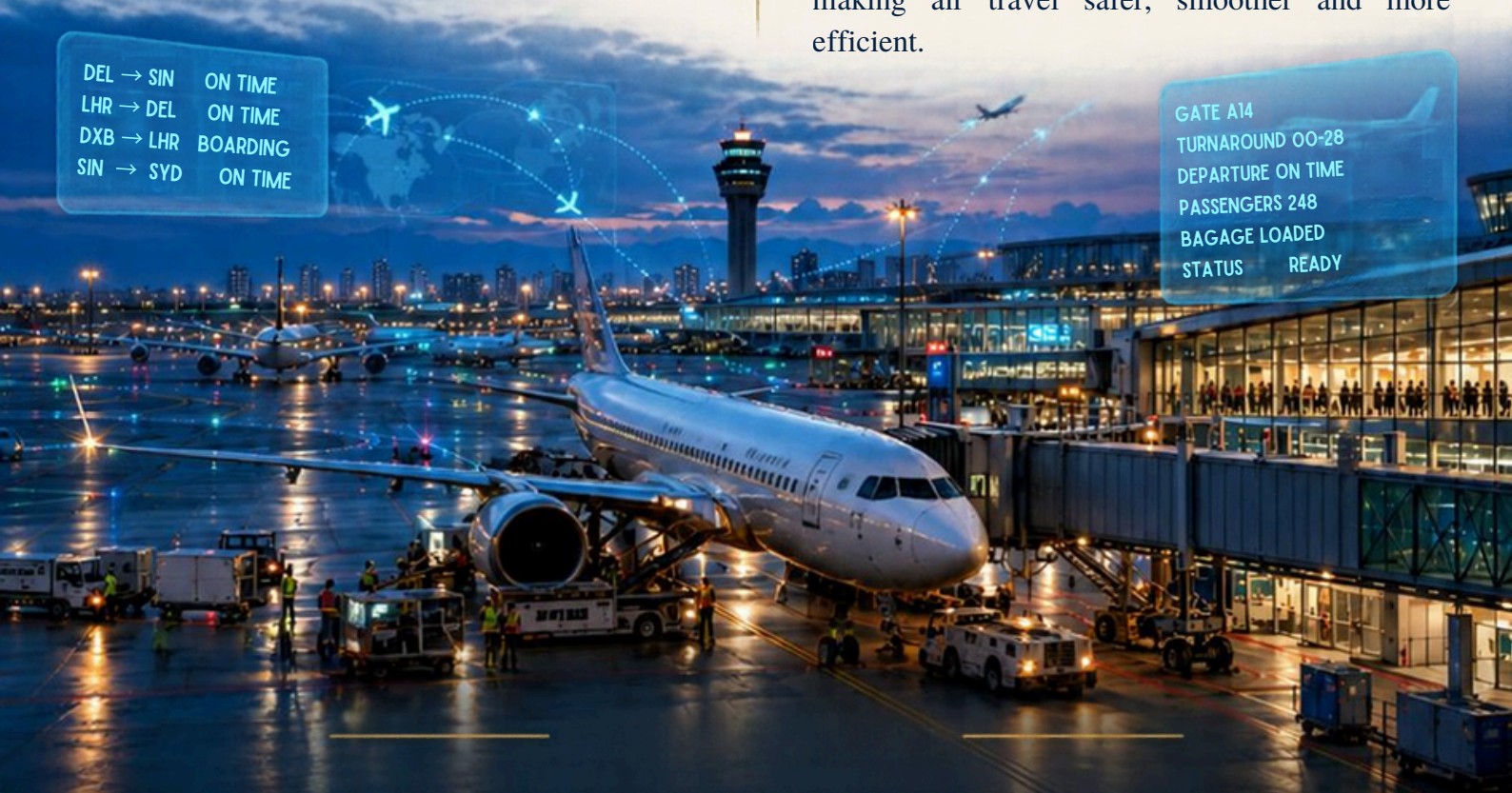
Being the child of parents who are aviation professionals, my connection with aviation has always been natural. Whenever I spot an aircraft in the sky, I wonder about the technology that makes its journey possible. An interesting conversation with my mother one evening introduced me to the growing role of Artificial Intelligence (AI) in airports and inspired me to explore this fascinating subject.

AI is transforming almost every domain, and airports are no exception. From flight planning and passenger management to aircraft operations, AI helps turn data into predictions, enabling airports to prepare for challenges before they occur.

At Delhi Airport, the Xovis passenger tracking system helps monitor passenger movement, queue lengths and waiting times. By analysing passenger-flow data, airports can better anticipate demand and plan staffing and other resources. At Singapore Changi Airport, Aircraft 360 uses AI and computer vision to monitor aircraft departure delays, allowing ground teams to intervene early. At London Heathrow Airport, Project SEEKER used AI to identify illegally trafficked wildlife products in baggage and cargo, demonstrating how technology can support security and wildlife conservation.

These examples show that AI is not just about automation; it is about anticipating problems and making informed decisions. Human expertise and responsible use of technology remain essential.

The airport of the future will not merely react to problems; it will predict and prepare for them, making air travel safer, smoother and more efficient.



THE GREEN PRICE OF ARTIFICIAL INTELLIGENCE

By Gianna Singh | Class X-D

BEHIND THE SCREEN

We often imagine Artificial Intelligence as something that exists only on a screen like a chatbot answering questions, an image generator creating pictures, or an algorithm recommending videos. But behind every AI response are enormous data centres filled with powerful computers.

THE HIDDEN FOOTPRINT

Training and operating advanced AI systems requires large amounts of electricity. These machines also produce considerable heat and need cooling, which can increase both energy and water consumption. The environmental cost does not stop there. Manufacturing specialised AI chips requires When this hardware becomes outdated, it can also contribute to the growing problem of electronic waste.

PART OF THE SOLUTION

Yet AI is not simply an environmental villain. It can help predict extreme weather, improve renewable energy systems, reduce waste and monitor changes in ecosystems.

PROGRESS WITH RESPONSIBILITY

As AI becomes smarter and more widespread, perhaps progress should not be measured only by how powerful our machines become, but by how responsibly we build and use them.



ENERGY • WATER • MATERIALS • E-WASTE

The smartest technology of tomorrow should also be smart enough to protect the planet it depends on."



Intelligence with responsibility.

THE RIGHT WAY TO USE AI

By Aarav Arya, XII - A1

AI knows a lot. But you still make it meaningful.

EVERYTHING IS RECORDED.

From your online searches and chats to photos, videos, purchases, locations and even the things you say out loud — it's all been recorded, indexed and stored. Hundreds, thousands, even millions of times.



- Search history
- Social media
- Photos & videos
- Online purchases
- Location data
- Public data

The data available today is so enormous that modern AI knows more about the world than an average human ever could.

SO, YOU CAN ASK AI ALMOST ANYTHING.

Whether it's a school project, a recipe, a coding problem, a travel plan or a creative idea — you can just call in an LLM and ask for its opinion. It's like having a world's library and experts at your fingertips.

- Study plan?
- Code help?
- Recipe?
- Idea?
- **Explain this?**

BUT AI IS NOT ALWAYS CORRECT.

AI can be wrong, misleading or incomplete. It doesn't "understand" the world — it predicts the next word based on patterns. So, while its answers are often aanazing, they can also be inaccurate, biased or outdated. If you blindly follow them, it can lead to mistakes, confusion or even real-world problems.



- Outdated data
- Wrong info
- Bias
- Incomplete answers

AI is a tool, not a truth machine.

Think. Filter. Build.

You are the Filter.



The best results come when you use AI as a starting point, then think, question, compare and combine. Your judgment, experience and common sense are what turn information into real value.

- Question it
- Check the facts
- Compare options
- Use your judgment
- Add your own ideas

AI CAN HELP, BUT HUMANS FINISH THE MASTERPIECE.

AI can get you 80% of the way. But the final 20% — the creativity, emotion, context and personal touch — that's you. Here's how it works in different areas:

AI Art:

AI can generate beautiful images. But taking inspiration from it helps you create something original and uniquely yours.



AI Code:

AI can write code. But only a human can join two systems, solve real-world edge cases and make it work together.



AI Recipes:

AI can suggest great recipes. But only you can adjust the flavor, use local ingredients and make it taste just right.



THE RIGHT WAY TO USE AI

Use its knowledge, not just its output. Let it give you the raw material. Then, add your curiosity, creativity, experience and effort. That's how you turn information into something truly unique.

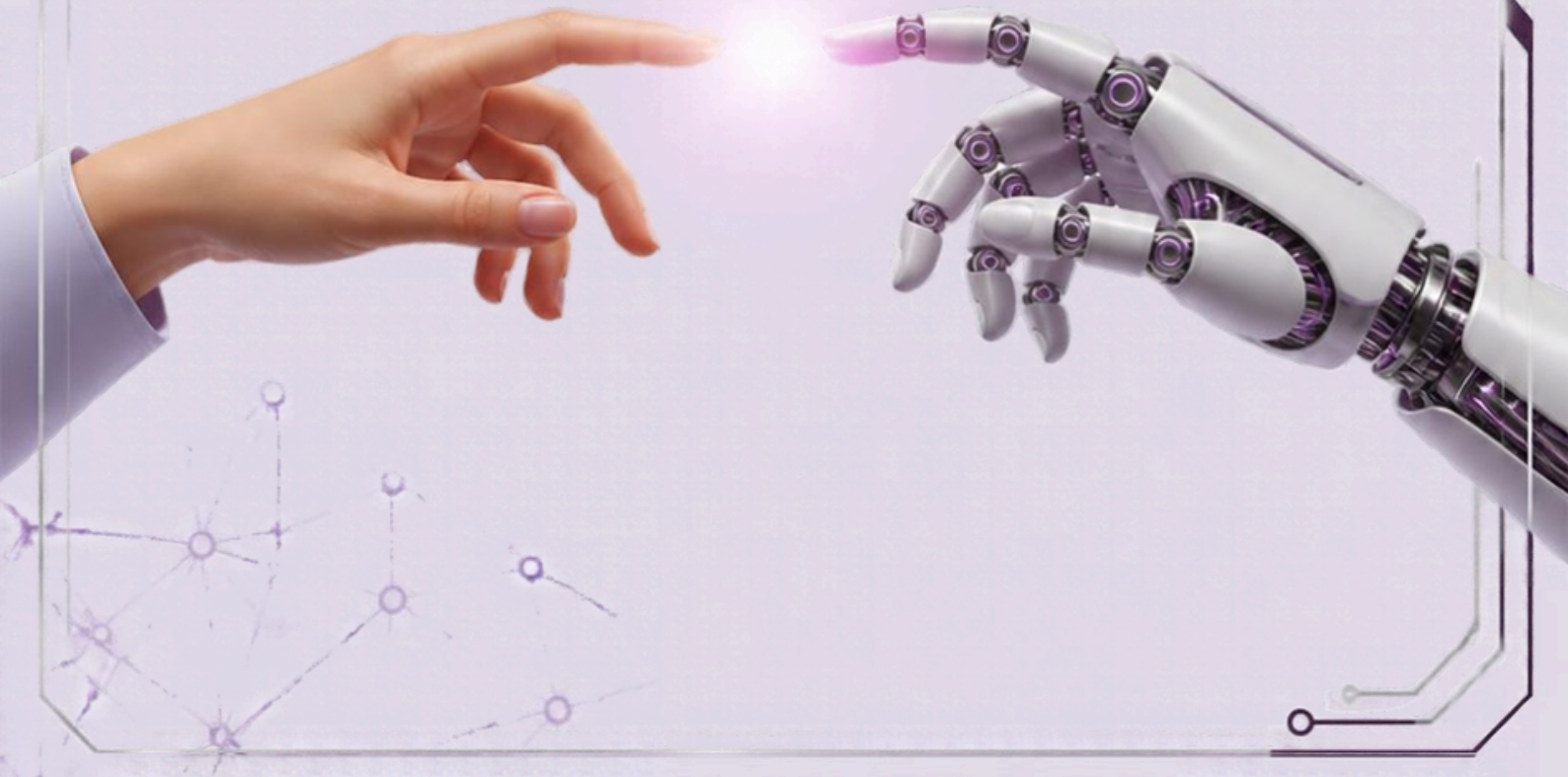
- **AI's knowledge** (the world's data)
- **Your mind** (filter, combine, create)
- **Something unique** (your own creation)

More knowledge. + More thinking. + More you. = A better future.



Let machines
learn from data.

Let
humans lead with wisdom.



What Happens in The Chatbot Doesn't Stay in It



By Aanahita Nagpal | Class IX-F

In 2023, a few Samsung engineers did something many of us do daily, they turned to a chatbot for assistance. However, the twist was that they shared confidential chip designs, the most valuable assets of a tech giant. Within weeks, Samsung had to ban the tool. Those secrets had already been absorbed by a model beyond the company's control.

You can't undo what a machine has learned, so companies now protect AI like a fortress. They only allowwhitelisted tools, strictly prohibit sensitive data in public models, use private systems for critical tasks, and maintain audit trails to log every query. Some even hire hackers to test their AI before malicious actors do.

But students don't have such guidelines: the same risk lurks in every pocket. Every photo, essay, and concern we share with a chatbot becomes someone else's training data. Samsung learned this lesson the hard way , now the question is what it remembers about you.



Technology is better when it understands you.

From Generative AI to Agentic Era

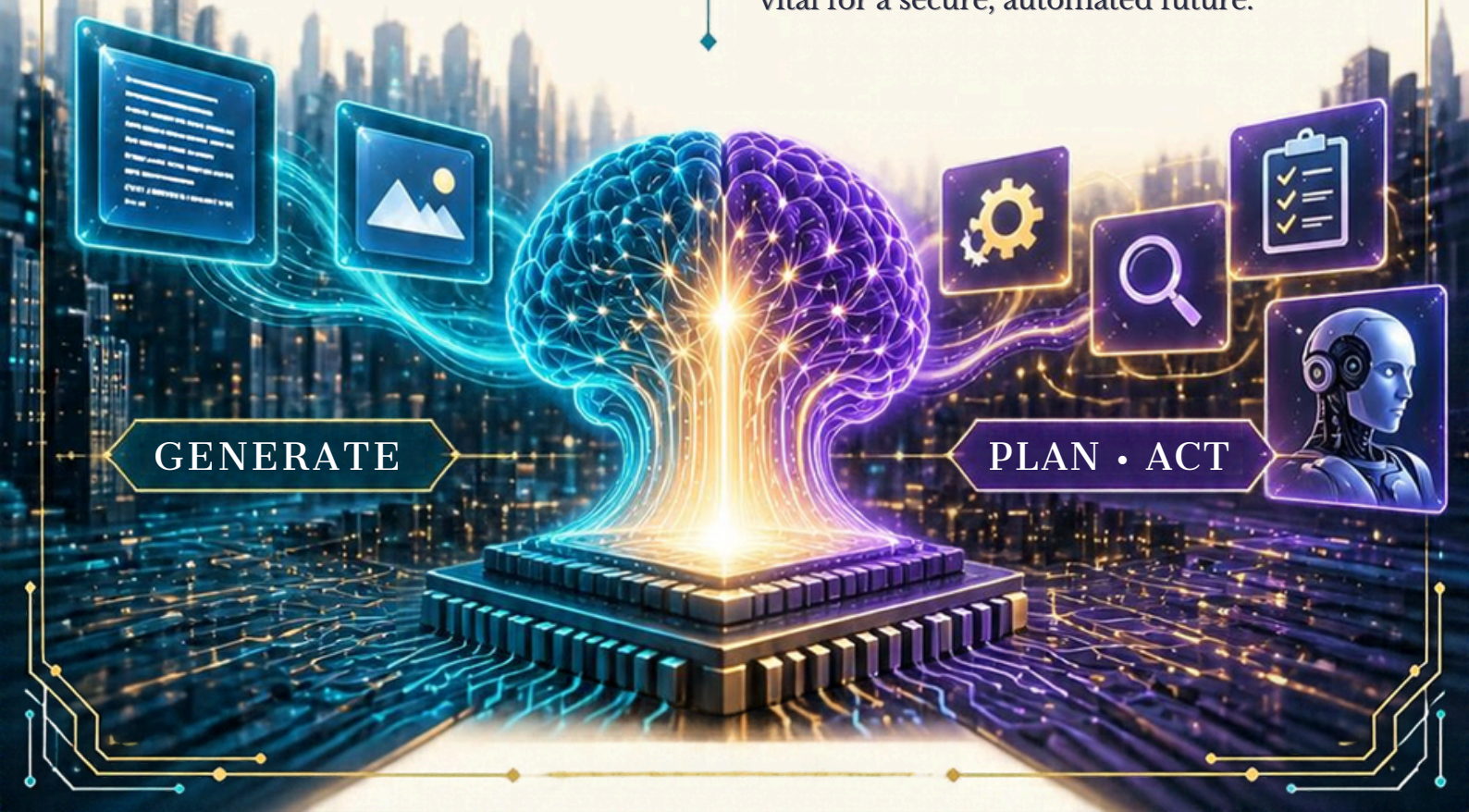
The Evolution of AI

By Ayaan Matta | Class VIII-B

We are living through a massive shift from Generative AI—systems that simply create text or images—to **Agentic AI, which are smart assistants** that can actively act on our behalf. This transition brings us closer to Artificial General Intelligence (AGI), integrating AI deeply into everyday lives. Instead of just answering questions, agentic systems use frameworks like tools, Retrieval-Augmented Generation (RAG), and Skills to research, plan, and execute multi-step tasks.

Building and running these systems has become highly accessible. Platforms like Hugging Face, alongside frameworks like llama.cpp and Python, allow developers to build AI easily. Thanks to quantization (a technique that shrinks model sizes) and hardware like Neural (NPUs) and Language Processing Units Processing Units (LPUs), we can now rpowerful models locally on everyday devices via edge computing.

However, this power requires strong data protection. These autonomous systems are vulnerable to deliberate digital attacks, where hackers exploit software flaws (CVEs) and use MITRE ATT&CK tactics—like using malicious prompts to hijack the AI's tools. As we progress to next-generation model architectures like Jey and Cactus Needle, this technology is vital for a secure, automated future.



THE GHOST IN YOUR POCKET

Is Your Phone Actually Listening?

By Kushagra Srivastava | Class 9F

You mention a random brand out loud to a friend. Ten minutes later, an ad for that exact product pops up on your Instagram feed. It feels creepy. It feels personal. You look at your phone and wonder: Is this thing actually listening to me?

The short answer is no. Tech giants like Meta and Google repeatedly deny using your microphone for ads, and cybersecurity experts haven't found data logs proving otherwise.

The future isn't a guess—the answer is **predictive AI**. Predictive Artificial Intelligence involves using statistical analysis and Machine Learning to identify patterns, anticipate behaviours, and forecast upcoming events. Organisations use predictive AI to predict potential future outcomes, causation, risk exposure and more. The accuracy and performance of predictive AI models largely depend on the quality and quantity of the training data. Rigorous data governance practices, data cleaning, validation and consistent updates to the data sets guarantee that the data used is reliable, which in turn enhances the accuracy of the predictive models.

In short, it is **predictive AI, not surveillance**. By analysing extensive data footprints, these sophisticated machine learning models forecast consumer behaviours and anticipate needs with uncanny precision.



PROBLEMS YOUR COMPUTER CAN NEVER SOLVE

By Meisha Singh | Class XII-A2

Imagine you have a program running on your computer. You don't know what it does. All you know is that it takes input, processes something, and either finishes or keeps running forever. You want to write an instruction that can look at the first one and tell you this: will it finish, or will it loop forever?

Sounds reasonable? You should be able to figure out that out, right? You're just asking if a program halts or not.

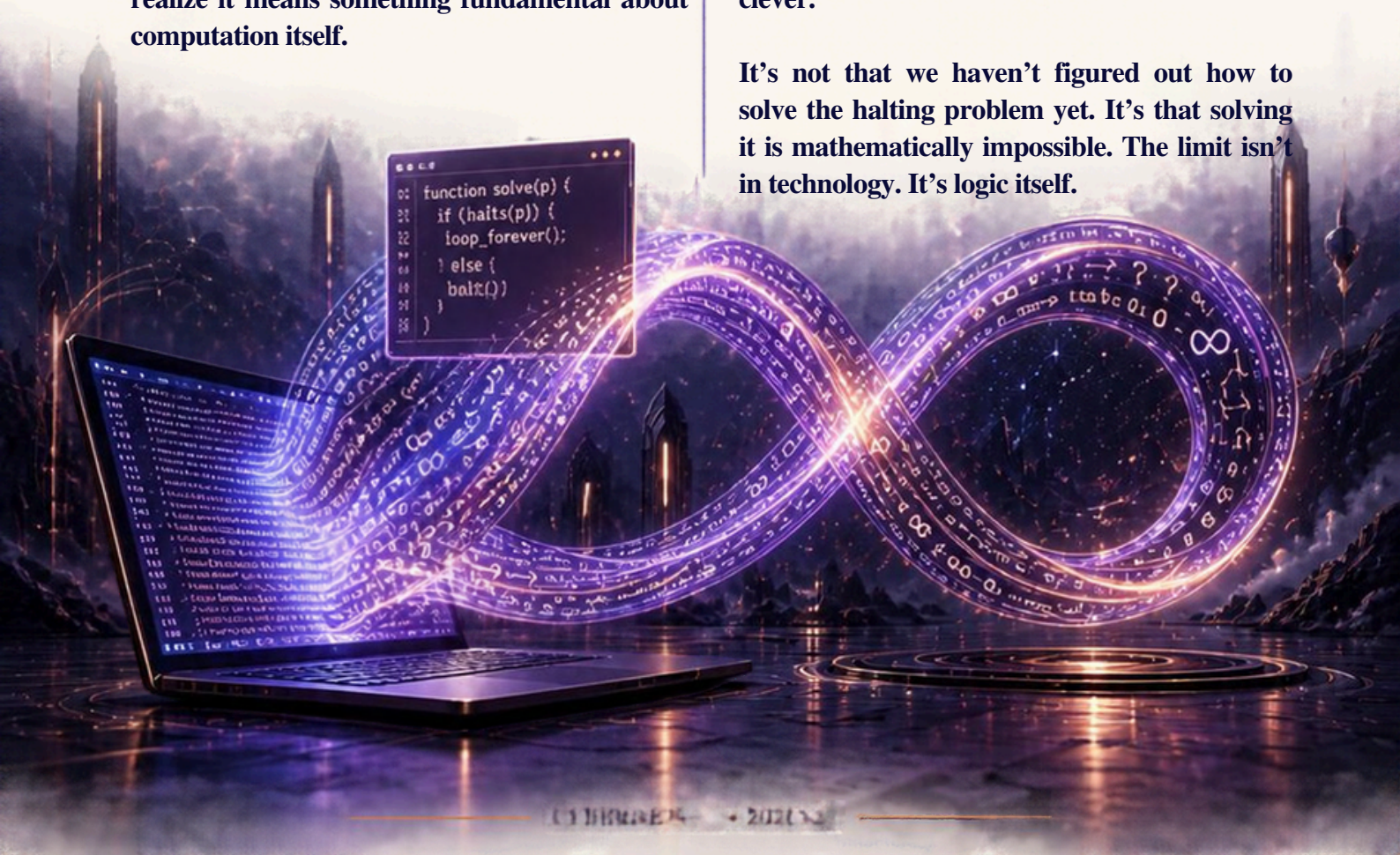
You can't. Not really. It's mathematically impossible.

This is the halting problem. And it's one of things that shouldn't matter until you un realize it means something fundamental about computation itself.

The proof is elegant. Suppose you write a program that can solve the halting problem. You feed it any program, and it tells you whether it halts or loops forever. Now you use your halting solver to create a program that asks the solver itself if it halts, and if the solver says the program halts, you make it loop forever instead. If the solver says it loops forever, you make it halt. What does your program do? The halting solver can't answer. It breaks.

This isn't a weakness in your programming skills or your computer. It's a fundamental property of computation. Some things are uncomputable. Some questions are unanswerable by any program, no matter how clever.

It's not that we haven't figured out how to solve the halting problem yet. It's that solving it is mathematically impossible. The limit isn't in technology. It's logic itself.



Role of AI in the Life of a Student

By: Vinamra Gupta | Class: 9 F

Artificial Intelligence, also known as AI, has become an important part in the student's life. With the advent of technology, AI can now be used by students as a medium of studying, getting information, and deal with difficult topics. Even though AI cannot really replace a teacher, it can always act as a tool for understanding core concepts.

AI has applications in multiple fields, such as academics itself. Students can understand difficult problems as AI helps them explain these in simpler ways. AI also helps students practice questions and correct their mistakes. AI helps students make study plans and get ideas for their assignments and projects.
It helps save time and makes studying more easy.

Despite its advantages, AI also comes with its downside. If students become become dependent on it too much, they will stop thinking and solving problems on their own and hand them to AI. AI may also provide incorrect information, and can lead to confusion. That's why students must check the information given by AI instead of trusting it completely.

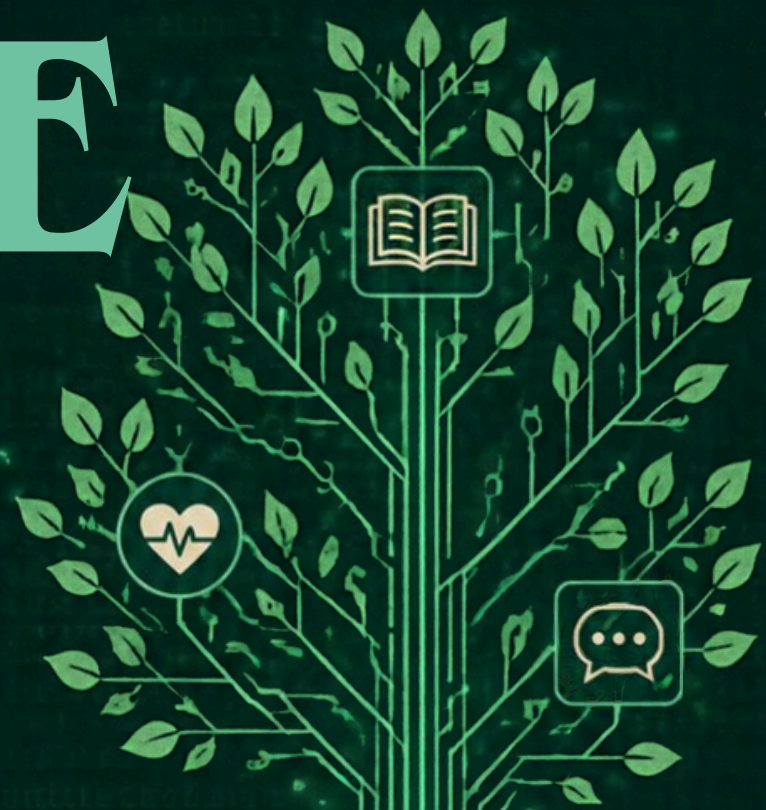
Therefore, AI can play an important role in a student's life when used responsibly. It should be used as a tool to improve learning rather than as a replacement for a student's own thinking and effort.

Key Takeaway:

AI is a powerful enhancer of learning, but responsible usage and critical thinking remain the foundation of true academic growth.



THE POWER OF CODE



Every line of code is a small idea waiting to make a **big difference.**

CYBERNETICS · 2026–27

AI GRIND

BEYOND THE CLASSROOM

G.D. Goenka Public School, Dwarka successfully organized the Delhi AI Grind program on 23 January 2026 for students of classes VI onwards, witnessing enthusiastic participation from over thousand students.

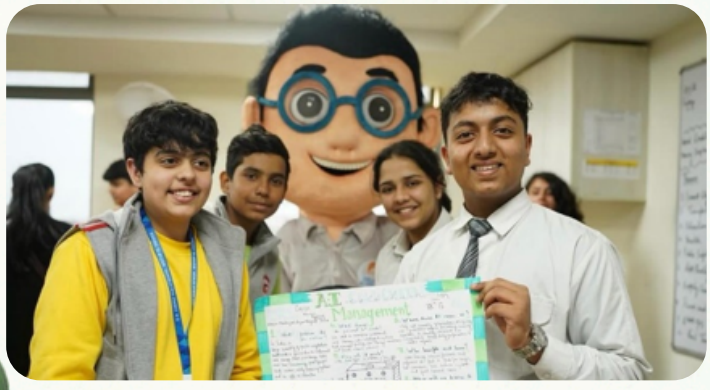
The initiative aimed to enhance digital literacy, computational thinking, and technological awareness, with a special focus on the emerging domain of artificial intelligence.

The AI Grind team visited the school along with their mascot, whose presence brought great excitement and joy among the students. Learners enthusiastically showcased their prototypes, AI-driven exhibits, and visual presentations to the team.









OUR AI JOURNEY

The AI Grind team appreciated the innovative ideas and creativity demonstrated by the students and expressed their admiration for the quality of work presented.

The program created an inspiring learning environment in which students explored artificial intelligence through hands-on learning experiences. It encouraged innovative thinking, creative expression, and the development of strong critical-thinking skills, empowering students to engage confidently with future-ready technologies.

Today's curiosity can become tomorrow's innovation.

ROBOTICS

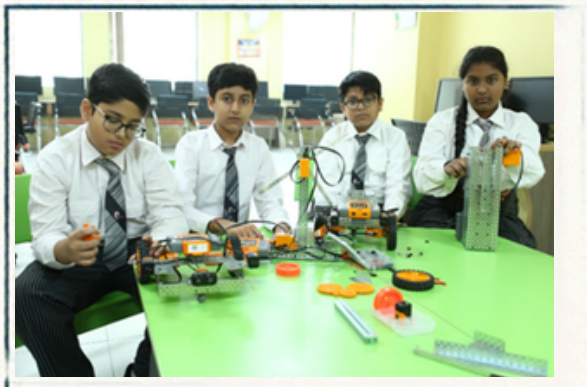
Ideas in Motion. Innovation in Action.



- THINK
- DESIGN
- BUILD
- PROGRAM
- SOLVE
- INNOVATE

Learning Through Robotics

Robotics classes for students of Classes IV to VIII foster innovation, creativity, and problem-solving. Through design thinking and hands-on experimentation, students develop solutions to real-life problems. The programme strengthens analytical abilities and critical thinking, makes coding engaging and practical, and builds skills for future careers in technology, AI, and automation.



Exploring Intelligent Machines

During these sessions, students are introduced to the mechanical and electronic components of the Avishkaar Robotics Kit and are encouraged to explore endless possibilities in transforming their innovative ideas intoh.



Designing and Building

Students work collaboratively in teams to design, build, and program robots, thereby strengthening their communication, teamwork, and leadership skills. Some of the exciting projects undertaken by our students include Robot Cars, Pulley Cranes, Calculators, Automatic Door Openers, Automated Dumper Trucks, and many more.



From Concepts to Creation

Students explore motion, linear motion, and circular motion, converting circular motion into linear motion using a four-wheel base. They also transform it into a three-wheel base to study friction. They build a robot car with a caster wheel for smooth turns and a soccer arm, exploring applications such as floor cleaning, wall painting, material handling, and automation.





CYBERNETICS

ACHIEVEMENTS

Celebrating Our Young Tech Achievers



FIRST POSITION

ELECTROSPRINT

VEDANT ARORA XG
TANISHQ RAJ IX A

Organised by
M.L. Khanna D.A.V. Public School, Dwarka

FIRST POSITION

PROTOSCAPE

AARUSH SONKER
ISHAN ASATI

Organised by
M.L. Khanna D.A.V. Public School, Dwarka





THIRD POSITION

SCRATCH STORM

SHIVANSH SARKAR-8D
KABIR LAKHINA-8D

Organised by
M.L. Khanna D.A.V. Public School, Dwarka

CYBERNETICS

ACHIEVEMENTS

Celebrating Our Young Tech Achievers



FIRST POSITION

FRONT END FRENZY

Ayaan Matta (VIII-B)
Shivansh Sarkar (VIII-B)

Organised by
Army Public School, Dhaula Kuan



SECOND POSITION

APPION-2026

Ayaan Matta (VIII-B)
Ishita Rana (VII-A)

Organised by
Indraprastha International School, Dwarka

INTER-HOUSE COMPETITIONS

Cyber Month

CLASSES VI-VIII

01 Digital Comic Story-Developing Competition

The Inter-House Digital Comic Story-Developing Competition for Classes VI-VIII encourages students to showcase their creativity by designing engaging digital comic stories. The event fosters imaginative thinking, storytelling skills, and effective use of digital tools while promoting healthy inter-house competition.





02 Cyber Quiz

The Cyber Quiz for Classes VI-VIII aims to enhance students' awareness of cybersecurity, digital citizenship, and safe online practices. The competition encourages critical thinking while testing their knowledge of the digital world in an engaging and interactive manner.

03 E-Poster Making Competition

The Inter-House E-Poster Making Competition inspires young minds to transform ideas into compelling digital artwork. By combining creativity, technology, and thoughtful messaging, students showcase their artistic talent and digital literacy in a vibrant competitive environment.







INTER-HOUSE COMPETTIIONS

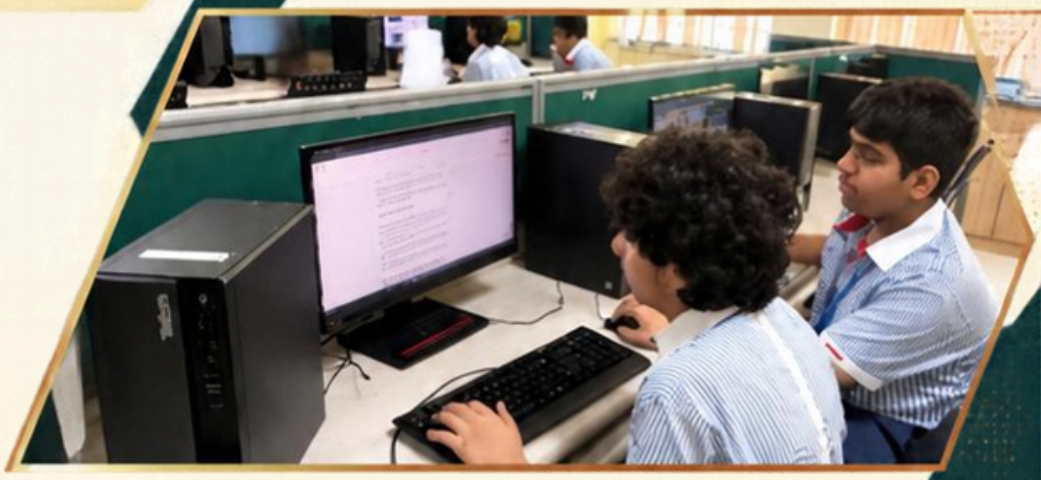
Cyber Month

CLASSES IX-XII



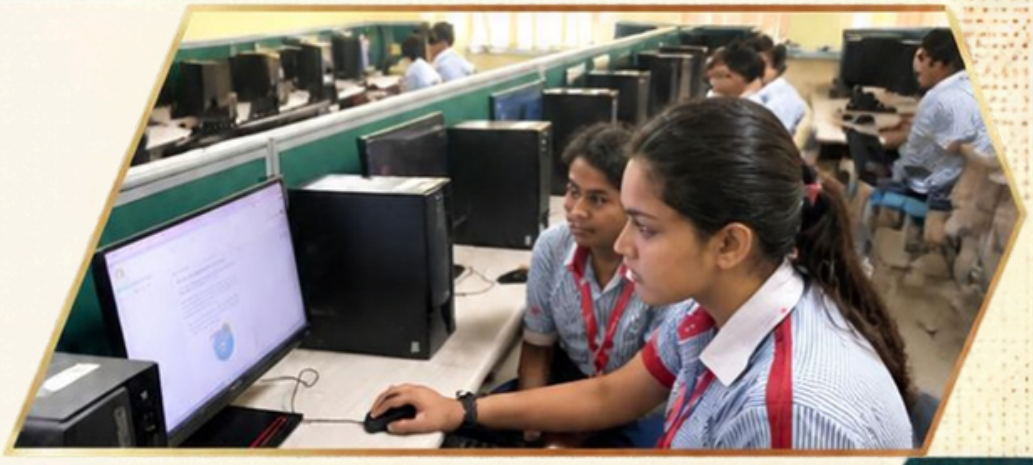
01 Blog Writing
Classes IX and X

The Blog Writing competition encouraged students to express their thoughts and ideas through creative and well-structured writing. It aimed to enhance students' research, critical thinking, and communication skills.



02 Tech Quiz
Classes IX-XII

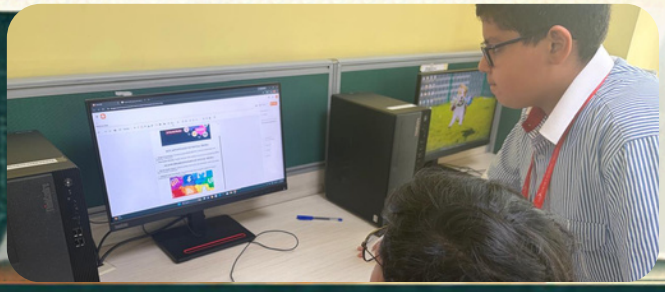
The Tech Quiz organized to encourage curiosity and innovation by testing students' knowledge of computers, AI, cyber safety, programming, and emerging technologies in a fun and competitive environment.

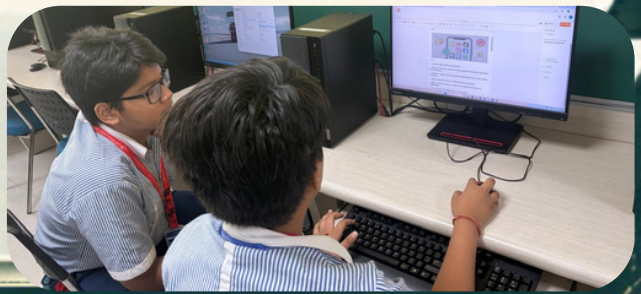


03 AI Idea Pitch
Classes IX-XII

The AI Idea Pitch provided students with a platform to present innovative ideas that leverage Artificial Intelligence to solve real-world challenges. Participants showcased their creativity, problem-solving abilities, and communication skills by proposing practical AI-based solutions for real life problems.







THANK YOU

