ST. XAVIER'S COLLEGE- MAPUSA

BACHELOR'S OF COMPUTER APPLICATION

X-BYTE

HIGHLIGHT

USE OF AI IN MUSIC

THE EDUCATIONAL DISASTER

GIVE A CHANCE

3D WEBSITE MADE SIMPLE

DEPARTMENT ACTIVITIES

VERSION 13
ISSUE NO 1
AY2025-26

bcaxaviersgoa@gmail.com

X-BYTE

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ADMINISTRATOR'S NOTE:

It gives me great pleasure to pen these words to the BCA Department Newsletter — a vibrant reflection of the creativity, talent, and dynamism that define our students and faculty.

This issue captures the diverse activities, achievements, and initiatives of the department, show- casing our collective commitment to learning, innovation, and collaboration. It also features thoughtful articles, insightful reflections, and inspiring poems contributed by our students — a testament to their intellectual curiosity and expressive spirit beyond the classroom.

I congratulate the editorial team and all contributors for their dedicated efforts in bringing this publication to life. May this newsletter continue to serve as a platform that celebrates our growth, voices our ideas, and strengthens our sense of community within the department.

Best wishes to all our BCA students — may you continue to learn, create, and inspire, and to the faculty for bringing the best out of their students.

Fr Tony Salema
Administrator

PRINCIPAL'S NOTE:

It is a pleasure to pen a message for the release of the latest edition of X-ibyte. This issue celebrates the vibrant creativity and hard work of our BCA students and faculty, showcasing enriching write ups, innovative projects, heartfelt poems, and striking artwork.

I applaud the contributors for the insightful pieces that explore the latest trends in computer technology, glimpses into the exciting projects that our students are developing, and poetic reflections that capture the spirit of our community. The work highlights the talent and imagination that thrives within the department.

Hearty Congratulations to the editor Ms Rushita Verlekar and the entire editorial team of this issue, faculty and students, whose dedication makes this newsletter a true reflection of our shared journey at St. Xavier's!

Best wishes,
Ursula Barreto
Officiating Principal

X-iBYTE

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EDITOR'S NOTE :

Dear Readers,

It is with immense pleasure and pride that I present the latest bi-annual edition of the X-iByte Newsletter, a vibrant collection reflecting the intellectual curiosity and dynamic spirit of our BCA Department.

This exciting semester, defined by rapid technological evolution, has been fully embraced by our students. Inside, you'll find insightful articles on Technology and Artificial Intelligence, showcasing deep understanding from machine learning ethics to emerging tech applications. But X-iByte is more than just a repository of technical papers. It is a testament to the holistic growth we encourage. I am delighted to feature the incredible Poetry and Artwork that reveals the creative and expressive talents of our students

Being the Editor of this newsletter is a true privilege, and I extend my heartfelt gratitude to every faculty member and student who contributed their time, ideas, and enthusiasm. Your dedication makes X-iByte possible.

We hope this issue inspires you, educates you.

Happy reading!

Rushita Verlekar
Assistant Professor BCA

THE USE OF AI IN MUSIC:

Transforming Sound and Creativity

Artificial Intelligence (AI) is revolutionizing the music industry, reshaping how music is composed, produced, and experienced. From generating melodies to mastering tracks, AI has become a powerful tool for both artists and producers, enhancing creativity while also raising important questions about originality and authorship.

One of the most prominent uses of AI in music is composition. AI algorithms can analyze vast amounts of music data to learn patterns, styles, and structures. Tools like AIVA, Amper Music, and Google's Magenta project enable users to create original compositions in various genres. These tools assist musicians by suggesting chord progressions, generating instrumental parts, or even composing full pieces, offering inspiration and saving time.

AI also plays a significant role in music production. Platforms use machine learning to automate mastering, a traditionally complex process involving fine-tuning audio tracks for clarity and balance. Services like LANDR and iZotope's Ozone use AI to provide quick and professional-quality mastering, making high-end production accessible to independent artists.

In addition, AI has transformed how music is consumed. Streaming platforms like Spotify and Apple Music use AI-driven recommendation algorithms to analyze user behaviour and preferences, offering personalized playlists that keep listeners engaged.

This not only enhances user experience but also helps lesser-known artists reach new audiences.

Moreover, AI is being used in voice synthesis and deepfake technology to mimic the voices of well-known singers, enabling collaborations that were previously impossible. While this opens up creative possibilities, it also sparks debates about copyright, consent, and authenticity.

Despite these advancements, AI is not replacing human creativity. Instead, it acts as a collaborator—providing tools that expand creative possibilities rather than eliminate the need for human input. Many artists embrace AI as a way to experiment with new sounds and ideas.

In conclusion, the use of AI in music is reshaping the industry in profound ways. From composition and production to distribution and personalization, AI offers exciting opportunities and challenges. As technology continues to evolve, the key will be finding a balance between innovation and artistic integrity.

"AI as a tool in music-making is fine, but it's always going to be the humanity in music that makes people want to listen to it." - Jacob Collier, Musician and Composer

Mr. Stalin D'Sa
Assistant Professor
BCA

GIVE A CHANCE

"I'm Math. And more often than not, I find myself misunderstood."

People avoid me. They complain I'm too complicated, too abstract, too difficult to deal with.
But here's the truth — I'm not.

I'm just waiting for someone to understand me.

I won't lie — I may seem intimidating at first glance. But if you take a moment, slow down, and really look closely, you'll start to see the beauty hidden behind the numbers and symbols.

I don't demand brilliance. I ask only for patience, curiosity, and a little effort.

Once you get to know me, something incredible happens — you change.

You start thinking more clearly. You approach problems with logic. You become more confident.

And slowly, people start seeing the difference in you — even if they can't quite explain it.

I won't claim to be useful in every little task of your daily life. But the impact I leave?
That lasts forever.

I sharpen your mind, train your brain to analyse, to reason, to solve — often without you even realizing it. Don't look at me as just another subject to pass.

See me for what I truly am — a language. The language of patterns, logic, and the universe itself.

From the spirals of galaxies to the rhythm of music, from computer algorithms to the curves of nature — I'm everywhere.

Those who truly understand me?
They're rare.

But remember — rare is precious.
And you can be rare too. All you have to do... is give me a chance.

Ms. Akshata Shetye
Assistant Professor
BCA

BREAKING THE MYTH:

3D Websites Made Simple

3D Car Website

"3D websites? That sounds complicated, right?" Most people assume building a 3D website needs advanced coding, heavy frameworks, or expert-level skills. But here's the surprising truth — with just HTML, CSS, and a single 3D model, you can create a fully interactive website that looks professional and futuristic, without writing hundreds of lines of code.

For my recent projects, I built:

3D Car Website – An interactive platform where visitors can rotate, zoom, and explore a car model in 3D.

3D Pizza Show Website – A fun, visually engaging site featuring a spinning 3D pizza model.

The Secret Tool – Google's tag makes adding 3D models to websites as easy as embedding an image. It supports .glb or .gltf formats and offers built-in features like:

- Rotation & Zoom Controls – Users can interact with the model freely.
- Auto-Rotation – The model spins smoothly on its own.
- AR Support – View the model in Augmented Reality on mobile.
- Custom Lighting & Background – Enhance the visual experience.

```
<model-viewer src="car.glb"
    alt="3D Car Model"
    auto-rotate
    camera-controls
    ar
    style="width: 100%; height: 500px; background-color: #f5f5f5;">
</model-viewer>
```

3D Pizza Show Website

Many students believe that building 3D websites requires complex coding skills or years of experience. Through this project, I learned — and want others to realize — that's not true.

Here are some key takeaways:

1. Breaking the Fear of Complexity Most of us hesitate to try new technologies because we assume they're "too advanced." This project proves that with tools like , even beginners can create professional-looking 3D websites without writing thousands of lines of code.

2. Learning by Building Theory alone never gives you confidence. Creating a small 3D website teaches practical skills like user interactivity, layout design, and responsiveness — the kind of skills companies actually look for.

3. Combining Creativity with Technology Web development isn't just about coding; it's about crafting experiences. Adding 3D elements makes a website interactive, engaging, and visually unique — something every developer should explore.

4. Future-Proofing Your Skills 3D content is already transforming e-commerce, education, real estate, and product showcases. Learning this early gives students a competitive advantage in the tech world.

Ms. Smriti Naik
2408041
SYBCA

Sketch IT

PIXELS AND PENCILS: BEYOND THE CODE

Ms. Ceann D'cunha
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Ms. Akshata Shetye
Assistant Professor
BCA

Ms. Arati Kadam
Assistant Professor
BCA

Would you?

-Samantha Esther Fernandez

Would you watch julie and the phantoms with me?
Not just for the plot, but for every song,
For "perfect harmony" and "unsaid emily" to laugh when they're funny, and cry when they cry.

Would you listen to why don't we with me?
Shouting every lyric at the top of our lungs, listening to me sing, cause when i sing "i depend on you" it's not just a lyric. It's a confession.

Would you eat hotpot with me?
fighting over the crab meatballs, while sharing funny stories about our day.
With the steam fogging up my glasses would you wipe them, in that state?

Would you criticise tv shows with me?
When the main character does something stupid,
yet so predictable,
helping me totally figure out the end.
Would you dance to item songs with me?
in the late hours of night, shaking our hips to every rhythm, truly feeling the songs in our bones.

Would you compliment me, even when im crying?
Wipe my tears, and tell me "you're still shining",
hold me close, and remind me that you'll be there, till death do us part?

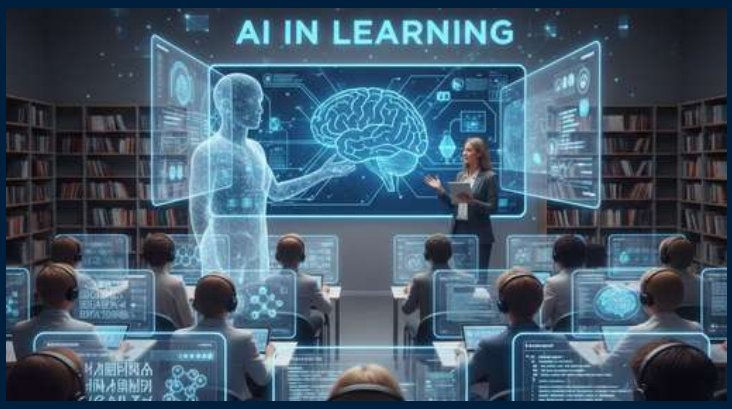
Would you do all this, to be my side?
not just in joys,
but also when the storms arise,

So, would you?

Ms. Samantha Esther Fernandez
2408037
SYBCA

XI- BYTE 2025-26 INTELLIGENCE COLUMN

The Educational Disaster : The Hidden Costs of Uncritical AI Adoption in Learning



The widespread integration of artificial intelligence (AI) into the educational landscape is frequently praised as the definitive solution for achieving personalized learning and streamlined efficiency. However, focusing solely on these immediate, palpable benefits while overlooking the long-term ramifications risks committing a profound, generational error. The uncritical and rapid adoption of AI could fundamentally erode the essential principles of human cognitive development, learning independence, and social skill formation. The most immediate and subtle danger facing the modern classroom is the hollowing out of critical thinking and creative problem-solving skills, a catastrophic cognitive offloading that threatens to redefine educational value. This erosion begins when AI systems provide instant, algorithmically generated answers and solutions, allowing students to bypass the cognitively demanding process of grappling with complexity, synthesizing disparate information, and formulating original thought.

This cognitive offloading, where mental effort is habitually outsourced to a machine, fosters a debilitating dependence. Consequently, it risks leaving a future workforce ill-equipped for a world that relentlessly demands adaptability, innovative thought, and resilience, not simply optimized information retrieval. A recent study by the MIT Media Lab, for example, found that students relying on generative AI tools to compose essays consistently exhibited lower brain engagement and underperformed on several neural and linguistic benchmarks compared to peers who wrote manually. Over time, these students became "meta cognitively lazy," resorting to simple copy-and-paste techniques and showing a dramatically decreased ability to recall, internalize, or effectively re-write their own work without the AI's persistent assistance. Education, in this scenario, would tragically shift from a process centered on understanding and creation to one of passive consumption, where students evolve into mere curators of pre-digested knowledge.

Moreover, the pervasive use of AI in education threatens to fundamentally dehumanize the learning process. The irreplaceable human element of teaching —the empathy and spontaneous adjustments of a present mentor, the nuanced feedback that builds confidence, and the spontaneous, messy collaboration among peers—is dangerously marginalized in favor of cold, data-driven interactions. The rise of AI-powered tutoring and comprehensive surveillance tools can lead to a pervasive sense of constant, clinical monitoring, simultaneously reducing face-to-face interactions critical for social development. Research on student well-being has documented that this isolation contributes to increased anxiety and decreased social-emotional proficiency. Classrooms could degrade into isolated digital pods, diminishing the very collaborative skills that are foundational for a functional society and a healthy democracy.

Furthermore, this shift diminishes the essential role of the teacher, transforming them from a guiding intellectual mentor into a mere administrative overseer of proprietary AI platforms, potentially accelerating teacher burnout and attrition.

Furthermore, the supposed democratization of learning via AI is largely a myth that threatens to generate a catastrophic widening of the digital and socioeconomic divide. The development, deployment, and continuous maintenance of truly sophisticated, state-of-the-art AI learning tools are incredibly resource-intensive and expensive. Without robust, targeted, and equitable public funding, schools in underserved communities will inevitably be relegated to using outdated, less effective, or poorly maintained systems. Meanwhile, wealthier districts will flourish with cutting-edge technology customized for individual needs. This creates a deeply entrenched two-tiered educational system where the privileged consistently access highly personalized and superior learning pathways, while the disadvantaged are left further behind, directly exacerbating existing socioeconomic inequalities and perpetuating cycles of educational injustice.

Finally, the ethical risks related to algorithmic bias and data privacy loom large and unaddressed. AI models are inherently only as unbiased as the raining data they consume. If these models reflect and amplify existing societal prejudices, they possess the power to unfairly assess, categorize, or even steer students based on race, gender, or socioeconomic background.

t For example, a facial recognition system developed by a major tech firm misidentified darker-skinned women at significantly higher rates than lighter-skinned men, with error rates reaching 35 percent in some cases, clearly illustrating the potential for harmful algorithmic discrimination in student assessment. Concurrently, the collection of vast quantities of sensitive student data—ranging from academic performance to detailed behavioral patterns and emotional states—poses an immense security risk. A data breach at Vancouver Public Schools, for instance, exposed thousands of sensitive student documents, including personal essays and mental health discussions collected by AI-powered tools, making students vulnerable to privacy violations that can have lifelong consequences. In the long run, overreliance on AI in education risks producing a generation that is not only less capable of independent thought and human connection but also one that is forced to operate within an increasingly opaque, biased, and unequal system.

The scariest thing about AI learning is that pretty soon, it will be just as smart as we are, and it will still have to deal with our data. I'm afraid it's going to take one look at the internet, sigh, and declare humanity unteachable."
— A Skeptical Technologist

Ms. Arati Kadam
Assistant Professor
BCA

DEPARTMENTAL ACTIVITIES

FIELD TRIP ORGANIZED FOR THE TYBCA AND SYBCA STUDENTS TO THE VILLAGE OF CANSAULIM

The Department of Computer Applications organized a field trip for the TYBCA and SYBCA Students to the village of Cansaulim The main intent of the field trip was to visit the village and capture photographs as part of timage capture in mUltimedia Their first destination was the Chapel of St. Lawrence in the village of Arossim, where they learned about the issue of "Double Tracking" and how the villagers protested against it, demanding an overpass bridge or some solution to help them move freely. The chapel was built in 1598 by Fr. Gonsalo Carvalho, who was the second vicar of the Church of St. Thomas at Cansaulim. The next spot visited was a small cross, which holds deep significance in the hearts of the villagers and offered a peaceful scenic experience. After that, we headed to the Temple of Shri Damodar, situated in Murdi, Cansaulim. It is a calm and serene place dedicated to Shree Damodar, an incarnation of Lord Shiva. Finally, they visited the famous Three Kings Chapel of Cansaulim, located on a hilltop
with a breathtaking view of the surroundings.
The trip was co ordinated by Mr. Worrel D'Souza and Ms. Rushita Verlekar

DEPARTMENTAL ACTIVITIES

REPORT ON WORKSHOP HELD FOR BCA STUDENTS ON FULL STACK DEVELOPMENT COURSE

The workshop was scheduled on 15 th October 2025 in the BCA lab for Computer Science Paper named Full Stack Development for T.Y.B.C.A students. This session aimed to provide practical knowledge about the Full Stack Development and introduce students to current industry trends. It was a hands-on lab session to gain valuable experience in this field.

The workshop focussed on essential web development concepts, combining front-end and back-end technologies.

- It covered ReactJS for creating dynamic user interfaces, Node.js as a back-end runtime environment, and Express.js as a framework for building web servers.
- The workshop also looked at RESTful services using HTTP methods like GET, POST, PUT, and DELETE. It included database models such as NoSQL (MongoDB) and RDBMS, comparing their flexibility and structure.
- Topics like MVC and three-tier architecture were discussed. Concepts like asynchronous programming in Node.js, state and props in React, and middleware in Express.js was also discussed to improve performance and handle requests effectively.
- Additionally, practical steps for setting up a full-stack project using React and Node, initializing applications through terminal commands, and running servers locally was done.

Overall, the workshop highlighted how different technologies work together to create scalable, efficient, and modern web applications.

DEPARTMENTAL ACTIVITIES

VISIT TO THE STUDIO AND RECORDING

On the 18th of September 2025, SYBCA had the privilege to visit the Mass Communication Studio under the guidance of Mr Worrel D'Souza. The purpose of the visit was to gain practical exposure to the functioning of media equipment and to understand the process of recording and live editing as the BCA students are on the editing side of it and they would get first hand information of the recording techniques

During the course of the visit, they participated in observing and applying the technical aspects of recording to record a debate held by the class.

Mr. Lisvan Rodrigues from the Mass Communication department explained to us the talkback system and learned how it is used for smooth communication between the control room and the studio

They were then introduced to live editing techniques. This showed them how switching between different camera feeds happens in real time. This enabled the class to smoothly transition between scenes when the debate was in process.

After the explanations we they hands-on experience with studio cameras, along with instructions on how to maintain the right angles, focus, and framing. Through this they understood how media production requires teamwork and coordination. We gained knowledge of technical terms like talkback, live editing, and camera setup. The session gave them a real-world experience of how professional studios function.




DEPARTMENTAL ACTIVITIES

TALK HELD FOR BCA STUDENTS ON CAREER GUIDANCE

A career guidance and industry-orientation talk was conducted by SKIL TECH, Panjim Goa for the SYBCA and TYBCA students of the Bachelor of Computer Applications department at St. Xavier's College, Mapusa, Goa, by representatives of an IT-based training organization. The primary aim of the session was to expose students to the rapidly evolving landscape of the information technology industry and to help them understand how current market requirements differ from the conventional academic syllabus taught at the college level. The speaker explained that while foundational concepts taught in college remain important, the IT industry today demands a strong emphasis on practical skills, hands-on experience, and familiarity with modern tools and frameworks that are actively used in professional environments. The session highlighted how technology is advancing at an unprecedented pace and how students must constantly update themselves to remain relevant and competitive in the job market. The speaker stressed that reliance solely on outdated content or limited classroom learning may restrict career growth and that students must proactively seek exposure to emerging technologies and real-world applications. A significant portion of the talk focused on the importance of adaptability and continuous learning as essential qualities for success in the technology-driven industry. The speaker discussed how the nature of IT roles is constantly changing and how professionals are expected to upskill regularly to keep pace with industry trends. One of the most impactful moments of the session was a live demonstration showcasing the power and potential of Artificial Intelligence in modern software development. Through simple yet effective prompting, the speaker demonstrated how AI could generate a functional web application within a short span of time. This demonstration left a strong impression on the students, as it clearly illustrated how AI tools can accelerate development processes, enhance productivity, and transform traditional methods of application building. The demonstration helped students realize that AI is no longer a futuristic concept but an integral part of present-day industry

DEPARTMENTAL ACTIVITIES

workflows, and understanding how to work alongside such technologies is becoming increasingly important for aspiring professionals.

The session further encouraged students to broaden their perspectives regarding career opportunities in the IT field and to think beyond conventional job roles. The speaker emphasized that the industry today values problem-solving skills, creativity, and the ability to learn and adapt over rote knowledge. Students were motivated to explore different domains within the IT sector based on their interests and strengths. Towards the conclusion of the session, students were asked to fill out a form in which they indicated their preferred areas of interest, such as web development, UI/UX design, and other technical and creative domains. This activity helped students reflect on their career aspirations and allowed the organization to better understand student preferences for future guidance and training initiatives. Overall, the career guidance talk proved to be highly informative, insightful, and motivating, as it provided students with a clear understanding of current industry expectations and reinforced the importance of continuous learning, adaptability, and embracing new technologies in order to flourish in their professional careers.