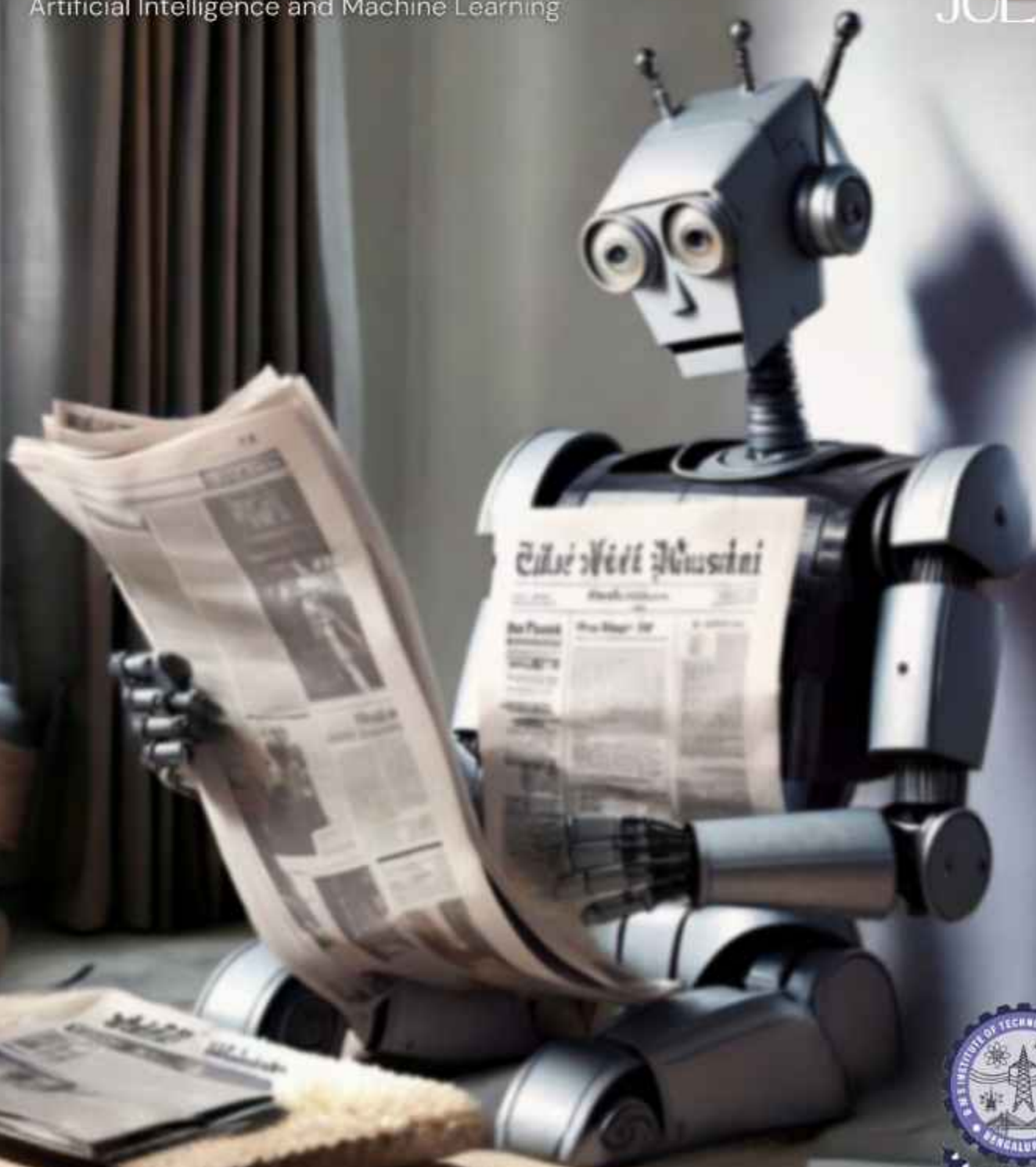


ISSUE 8

CIRCARDIAN

The official magazine of the department of
Artificial Intelligence and Machine Learning

JULY





The Official magazine of
the Department of
Artificial Intelligence
and
Machine Learning

The magazine committee extends its deepest appreciation to **Dr Rajesh I S**, faculty coordinator, for the successful completion of the magazine

Apart from BMS College of Engineering, he had also established other institutions that promoted higher education which includes BMS College of Law, BMS College of Women, and BMS Evening College of Engineering. He was extremely supportive in the initiation of several collaborative programs such as training foreign students under the International Co-operative Division, cross-cultural programs with Melton Foundation U.S.A, etc.

BMS Institute of Technology (BMSIT), established in the year 2002 is one of the six institutions under BMS Educational Trust, is managed by a council of trustees appointed by Dr. B.S. Ragini Narayan, the successor of Late Sri B.S Narayan and the donor trustee and Member Secretary of BMS Educational Trust and it is one of the best engineering college in Bangalore. BMS School of Architecture is the latest addition to the BMS group of institutions



SHRI B. S. NARAYAN
FOUNDER & DONOR TRUSTEE

The Founders



SHRI B. M SREENIVASAI AH
FOUNDER, BMS INSTITUTIONS

The history of BMS institutions rewinds back to the year 1946 with the establishment of the first private engineering college in the country, BMS College of Engineering (BMSCE), by late Sri B.M Sreenivasaiah. He was a philanthropist and a great visionary who realized the necessity of technical education even before the country got independence. He was honored by the Maharaja of Mysore with the title "Dharma Prakasha Raja Karya Prasaktha" for his extraordinary service in the field of education.

The legacy he once began is being upheld with the same zeal by his inheritors and they continue to cherish his vision and ideals. After the sad demise of Sri B.M Sreenivasaiah, his renowned son, Sri B.S Narayan, a vibrant and ingenious personality, molded BMS College of Engineering into one of the finest engineering colleges.

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VISION

To develop professionals equipped to build sustainable and intelligent solutions that effectively interact with the natural intelligence towards creating a digitally empowered environment for future generations, safeguarding social ethics



— *and* —



MISSION

To enable students with the spirit and power of interdisciplinary acumen by integrating a world of knowledge into a world of intelligent systems and subsystems, boost academic outcomes through place-based education and collaborations with establishment research labs and industries. Encourage entrepreneurship efforts among students and develop them into great leaders.

A MESSAGE FROM THE HOD'S DESK



It gives me immense pleasure to present another issue of "Circadian" from the department of Artificial Intelligence and Machine Learning. This is a half yearly newsletter where all the departmental activities which includes both students and teachers are brought under one folder. The Department of Artificial Intelligence and Machine Learning is showing consistent improvement in its academics, research and placement performance. This Magazine showcases the talents of the students and the achievements of the faculties in the department. I congratulate the editorial team for their effort and hard work for covering the information. Wishing best of luck to all of them.....

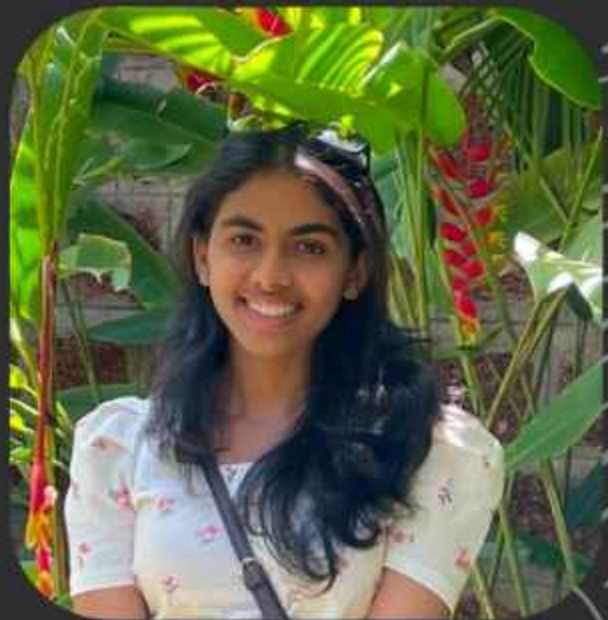
Dr Anupama H S
Professor and HoD

Department of Artificial Intelligence and Machine Learning

COMMITTEE INTRODUCTION



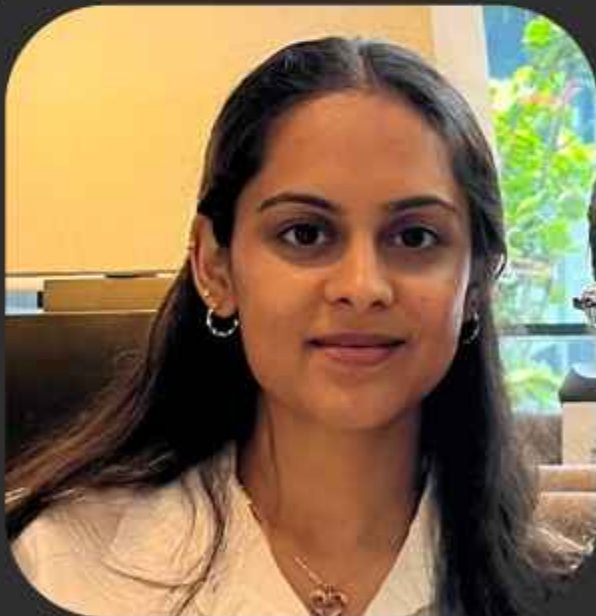
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Design Head

BRAINIUM



The technical forum of the department of Artificial intelligence and machine learning has evolved over the last one year. The main aim of this forum is to help students develop skills and knowledge, which can be applied into their projects and future careers. The forum hosts a plethora of events such as workshops, webinars, cultural and technical fests, and expert talks, helping the students connect with the best of the industry.

AAAI

Members throughout the world benefit from AAAI's efforts in research. Major AAAI activities include organizing and sponsoring conferences, symposia and workshops; publishing a quarterly magazine for all members; publishing a series of books, proceedings, and technical reports; compiling a host of online resources and publications; and awarding grants and scholarships.

It brings us immense exuberance to share that Brainium is now a member of the AAAI (ASSOCIATION FOR THE ADVANCEMENT OF ARTIFICIAL INTELLIGENCE) organization, a rightful place for the students of our institution to be exposed to the plethora of opportunities that lie ahead.

Founded in 1979, the Association for the Advancement of Artificial Intelligence (AAAI) is a nonprofit scientific society devoted to advancing the scientific understanding of the mechanisms underlying thought and intelligent behavior and their embodiment in machines. AAAI aims to promote research in, and responsible use of, artificial intelligence. AAAI also aims to increase public understanding of artificial intelligence, improve the teaching and training of AI practitioners, and provide guidance for research planners and funders concerning the importance and potential of current AI developments and future directions.

AAAI is committed to fostering student interest and development in the field of artificial intelligence. Student members are eligible for conference grants and fellowships, and receive publishing opportunities through AAAI conferences, workshops, and symposia

Special networking and mentoring events are offered at the annual AAAI conference, as well as other AAAI meetings. AAAI promotes student career advancement through its annual job fair program and through recognition of exceptional work with special student research awards



AI & ML

Gemini

GEMINI ASTROLOGY

"Gemini is racist?", "Gemini too 'woke'?" headlines flash on the TV screens. Newspapers and social media are flooded with burning questions.

*By Neha Myageri
IBY23AI093,
2F,AIML*

Certainly! Here is a portrait of a Founding Father of America:



Sure, here is an image of a Viking:



Sure, here is an image of a pope:



Pichai's AI revolution had a flying start but unfortunately hit a bit of turbulence. Gemini patrons opine they have faced a "generation gap" with it. Gemini has been accused of showing American forefathers as black which has welcomed the headline of "Gemini is racist". Besides, it has also committed one more massacre by showing the Pope as a black woman, which has invited the wrath of the people of orthodox beliefs. It refuses to generate the images of white-skinned people, in spite of being specifically prompted to. German World War 2 soldiers, Vikings are black according to Google's AI assistant.

Google has shown concerns over Gemini's omissions and has temporarily taken down its powers to generate images. Pichai has given shoulders to his patrons and has promised a speedy recovery in services but this incident is slightly pointing towards the CEO's firing.

Gemini has been a bad move for Google but it does not mean it is an omen to AI's progress. Samsung, another leading tech giant has collaborated with Google Cloud to bring in generative AI to the Samsung Galaxy S24 series. Galaxy AI, which owes its roots to Gemini, is going to be Samsung's own AI assistant. With Gemini, Samsung's developers can leverage Google Cloud's world-class infrastructure, cutting-edge performance and flexibility to deliver safe, reliable and engaging generative AI-powered applications on Samsung's smartphone devices.

Gemini might have hit a rough road. But at some point, Chat GPT and Devin have also recorded errors in computations. This is just the beginning of an era and considering the present status and predictions, these tools do promise a secure future. A little more work in the R&D department will pave the way to more flawless AI systems.

"Now, we're taking the next step on our journey with Gemini, our most capable and general model yet, with state-of-the-art performance across many leading benchmarks. This new era of models represents one of the biggest science and engineering efforts we've undertaken as a company. I'm genuinely excited for what's ahead, and for the opportunities Gemini will unlock for people everywhere." – Sundar Pichai, Google blog.

3RD SEMESTER *AI&ML* PARENT-TEACHER MEETING



The Department of AI&ML conducted a parent-teacher meeting on 20th January 2024 at 09:30 am in the BSN Block, 5th Floor, John McCarthy Laboratory, CR-506, for the parents of 3rd semester students. The session was initiated by Dr. Anupama H S, the Head of the Department of AI&ML. Dr. Anupama warmly welcomed all the parents and staff members to the meeting. Approximately six parents attended the session, showing their interest in their children's academic progress. The parents inquired about various aspects of the students' academics, including the marks of the 1st internal assessment and attendance records. Dr. Anupama, along with the faculty in-charges, addressed all these queries comprehensively, ensuring that the parents were satisfied with the information provided.

Overall, the meeting served as a valuable platform for parents to engage with the faculty and gain insights into their children's academic performance and progress.

KEY TRENDS OF AI IN 2024

In 2022, Generative Artificial Intelligence became widely recognized and popular among the masses, and in 2023, it started to establish itself in the corporate sector. Thus, 2024 will be crucial for the development of AI.

These are the few trends that 2024 will see AI adopting.

Multimodal AI

Multimodal models are those that support the input of several data kinds, like photos and videos. Text-to-image models like CLIP and speech-to-text models like Wave2Vec have been known for years, but they have usually only functioned in one way and were trained to complete a specific goal. While models that operate across several data modalities are not a purely new phenomenon, but they are still relatively new.

More understanding is the multimodal AI's most obvious advantage. For instance, users can ask a question regarding a picture and get a response in natural language, or they can ask aloud for help repairing something and get step-by-step written instructions combined with visual assistance.

Small language models

In domain-specific models particularly LLMs (Large Language Models) we've likely reached the point of diminishing returns from larger parameter counts. Smaller models, meanwhile, are far less resource-intensive. An influential March 2022 paper from Deepmind demonstrated that training smaller models on more data yields better performance than training larger models on fewer data.



These advances in smaller models have three important benefits: They help democratize AI, they can be run locally on smaller devices and they make AI more explainable.

GPU Shortages and Increased Cloud Costs

Due to the fact that hardware is becoming harder to come by and cloud computing is becoming more expensive, the trend toward smaller models will be pushed.

As a late 2023 O'Reilly report explains, cloud providers currently bear much of the computing burden. Adopters of AI are comparatively unlikely to manage their own infrastructure, and shortages of hardware will only make putting up on-premise servers more difficult and expensive. In the long term, this might drive up the price of cloud services as providers modernize and enhance their own infrastructure to successfully handle the demand from generative AI.

This trend resulted in more demand for GPUs as the new and advanced AI models are performance heavy so the demand for GPUs in the silicon industry has shot up which has resulted in high GPU prices and even unavailability of certain GPUs.

BEYOND FAST



Shadow AI (Or corporate AI Guidelines)

The growing use and accessibility of generative AI technologies has resulted in firms facing more legal, regulatory, economic, or reputational risks. In addition to having a cautious, thoughtful, and clear corporate strategy regarding generative AI, organizations also need to be aware of "shadow AI," or the "unofficial" personal use of AI by people in the workplace.

Also known as "shadow IT" or "BYOAI," shadow AI occurs when enthusiastic workers apply generative AI in the workplace without first obtaining permission from IT, out of a desire to experiment with new technology without compiling with company guidelines. As per the survey conducted by Ernst & Young 90% of employees uses AI in their jobs

Microservices and AI powered by APIs

The process of creating AI-powered apps that can be accessed through well defined APIs that allow a smooth integration into existing systems is known as API-driven AI. With this method, developers can take advantage of advanced AI features without wanting to have a deep understanding of the underlying algorithms. Moreover, microservices can contain AI features like machine learning models, natural language processing, and image recognition, which can then be accessed via APIs. Developers can use these AI microservices as building blocks to create creative and intelligent software solutions by integrating them into larger apps or workflows.

All things considered, microservices and API-driven AI offer a versatile and scalable foundation for creating intelligent apps that take advantage of AI's potential of innovation and benefit developers.

More realistic expectations

When generative AI initially gained widespread attention, a typical corporate leader's expertise was primarily derived from advertising and exaggerated press coverage. When GAI's were initially introduced like ChatGPT and DALL-E it was a game changer for all the users whether they be students, corporate employees, or any normal user but now that the dust has settled, the business community has a better understanding of AI-powered solutions.

“THE REALITY CHECK IS HAPPENING NOW”: AI LEADERS ON THE CURRENT STATE OF AI MARKET

Reality Check:

● **Hype vs. Reality:** Now the enthusiasts and business communities are realizing that some of the earlier hype around AI was exaggerated. Companies are finding it more difficult than planned to adopt AI successfully, and investments are not producing the desired benefits.

● **Focus on Useful Applications:** Companies are shifting their attention to useful applications of AI that offer more practical benefits, like data analysis tools and AI chatbots.

● **Superintelligence Wait:** The prediction that Artificial Intelligence will soon overtake human intelligence has been met with skepticism. Most experts believe that this will take a very long time.

All things considered, AI is progressing significantly in many domains, but it's critical to maintain reasonable expectations. The focus is on useful, real-world applications, and it appears that the path to superintelligence will take longer than many had anticipated.

THE ECONOMIC REVOLUTION OF AI



Artificial Intelligence has become a major component of technological advancement, resulting in significant growth and changes in many industries. Let us see the present market worth of AI, the amount of capital it attracts, and its effects on different industries.

In recent years, the global AI market has experienced an unparalleled growth. The market, which was valued at roughly \$62.35 billion in 2020, is expected to rise at a compound annual growth rate of roughly 37.3%, reaching a peak of approximately \$190.61 billion by 2025.

BOOSTING PRODUCTIVITY: The Efficiency Gains

The most straightforward way in which AI will boost productivity is via one-off efficiency savings. In some instances, these will be achieved by AI directly replacing humans because of AI doing more efficiently what humans currently do. In other instances, the savings will be achieved by AI helping humans to become more productive in their existing jobs, freeing up time to spend on other, potentially more productive, tasks. For example, an April 2023 study of call centres, showed that access to AI assistance increased the productivity of agents, as measured by the number of customer issues they resolve per hour, by 14%.

Strategic Implications for Leaders

The strategic implications of AI present business leaders with both opportunity and challenges. They may take advantage of AI's transformational potential and adjust to a world where success is largely determined by how well an organization integrates and uses AI.

Adopting technology and taking a comprehensive strategy to building an AI-ready culture that values ethical concerns and ongoing learning are required for this. Business executives may influence the direction of their industries and propel their companies to new heights by driving this transition.

Investments by Government of Major Nations

Governments of many major Nations are seeing the potential of AI and realizing its strategic value hence investing heavily in AI. With billions allocated for AI research and development, the United States' American AI Initiative seeks to maintain its position as a global leader in this field. In the same manner, major investments are being made by nations like China and the European Union to improve their AI capacities. The Indian Government has approved Rs 10,371.92 crore investment for the India Artificial Intelligence mission. The mission aims to invest in artificial intelligence projects, including to develop computing infrastructure and for the development of large language models. It aligns with the vision of 'Making AI in India' and 'Making AI Work for India'. India's artificial intelligence market is projected to touch \$17 billion by 2027, growing at an annualised rate of 25%-35% between 2024 and 2027, according to IT industry body Nasscom.



Effect on Jobs due to adoption of AI

It is estimated that AI could affect around 60% of jobs in advanced economies. On a positive side, about half of these jobs are likely to benefit from integrating AI technologies, resulting in increased productivity and efficiency. However, AI applications could also assume certain tasks currently carried out by humans, leading to less demand for labor, potentially resulting in lower wage levels and reduced employment opportunities.

Key Economic Impacts

1. Productivity Gains: Automation, analytics, and process optimization are some of the ways that AI technologies boost productivity. They let firms to complete more jobs faster, more accurately, and with fewer errors than they could with human labor. By doing this, expenses are cut and human resources are freed up for higher-value projects, which could increase economic production as a whole.

2. Employment and Labor Markets: AI's effects on the labor market have multiple sides and are complex. While AI has the potential to eliminate occupations, especially those in repetitive and routine tasks, it can also create new professions that call for higher level skills, such data analysis, AI system maintenance, and the creation of new AI technologies.

3. Innovation and Competitive Advantage: AI boosts innovation through making it possible to create new goods and services and by improving the capabilities of ones that already exist. AI systems, for example, can evaluate enormous amounts of medical data in the healthcare industry to help diagnose illnesses more precisely and sooner than ever.

4. Market Structures and Firm Strategy: AI has an impact on market structures by enhancing scale economies in certain industries and lowering entry barriers in others. Larger companies are better able to invest in expensive AI technology, which may result in a greater concentration of the market in industries where AI greatly increases productivity.

5. Decision Making: AI revolutionizes strategic decision-making by giving decision-makers previously unavailable or difficult to obtain insights from data analysis. Businesses can precisely foresee market trends, consumer behavior, and potential hazards thanks to AI's predictive powers.

Key Takeaways

Businesses are heavily investing in AI in an attempt to increase customer satisfaction, reduce costs, and raise productivity across a range of industries. The fact that large sums of venture capital are still being given to AI firms shows how strongly the industry believes AI technology will perform in the long run. Government funding and regulations are also necessary to promote AI research and development and maintain competitiveness in this revolutionary field.

The financial revolution brought about by AI is a paradigm change that is transforming the world economy, not merely a passing fad. AI will only become more significant as it develops, therefore it will be crucial for investors, businesses, and governments to keep up with the most recent advancements in this quickly developing field.

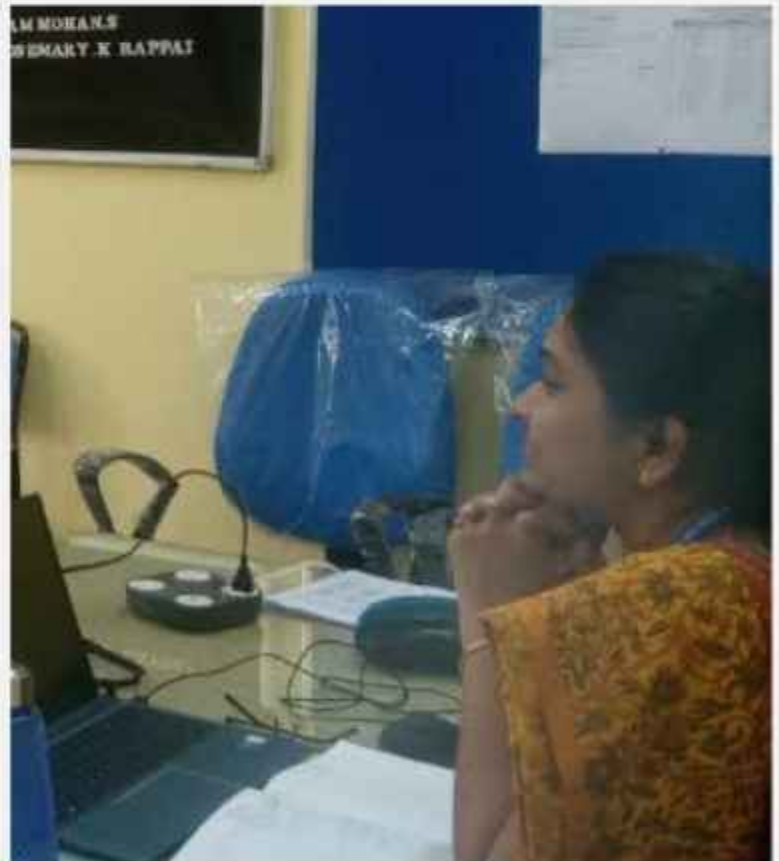
By Abhay Sharma
,1BY22AI004

5TH SEMESTER *AI&ML* PARENT-TEACHER MEETING



The Department of AI&ML held a parent-teacher meeting for the parents of 5th semester students on 20th January 2024 at 10:30 am in the BSN Block, 5th Floor, Seminar Hall No-510. The meeting commenced promptly at 10:30 am, with a good turnout of parents eager to discuss their wards' academic progress.

During the meeting, the parents were provided with detailed information regarding the marks scored by their children and their attendance status. The session encouraged open communication, with faculty members and parents exchanging views on various academic issues and student performance. Parents were invited to share any doubts or queries they had, fostering a collaborative environment aimed at enhancing the educational experience for the students.



The meeting concluded on a positive note, with both parents and faculty appreciating the opportunity to discuss and address academic concerns and to work together towards the students' success.

EMPOWERING MINDS

Comprehensive
Induction Program for
Second Semester
AI&ML Students

The Department of AI&ML conducted an enriching induction program for second semester students from April 18, 2024, to April 22, 2024. The program was designed to provide a holistic introduction to various aspects of academic and personal development.



The induction program featured a variety of sessions aimed at fostering a sense of community and equipping students with essential life skills. Ice-breaking sessions were organized to help students get to know each other and build camaraderie. Yoga and healthcare sessions emphasized the importance of physical and mental well-being, teaching students techniques to maintain a healthy lifestyle.

A significant focus was placed on soft skills development, with sessions dedicated to enhancing communication, teamwork, and problem-solving abilities. Coordinators shared valuable insights into placement opportunities, providing students with crucial information about career prospects and preparing them for future job interviews.

EMPOWERING MINDS

Comprehensive
Induction Program for
Second Semester
AI&ML Students

The program also included performances by students, showcasing their talents and encouraging a vibrant campus culture. Crafting academic skills was another key component, with sessions designed to help students excel in their studies and develop effective learning strategies.



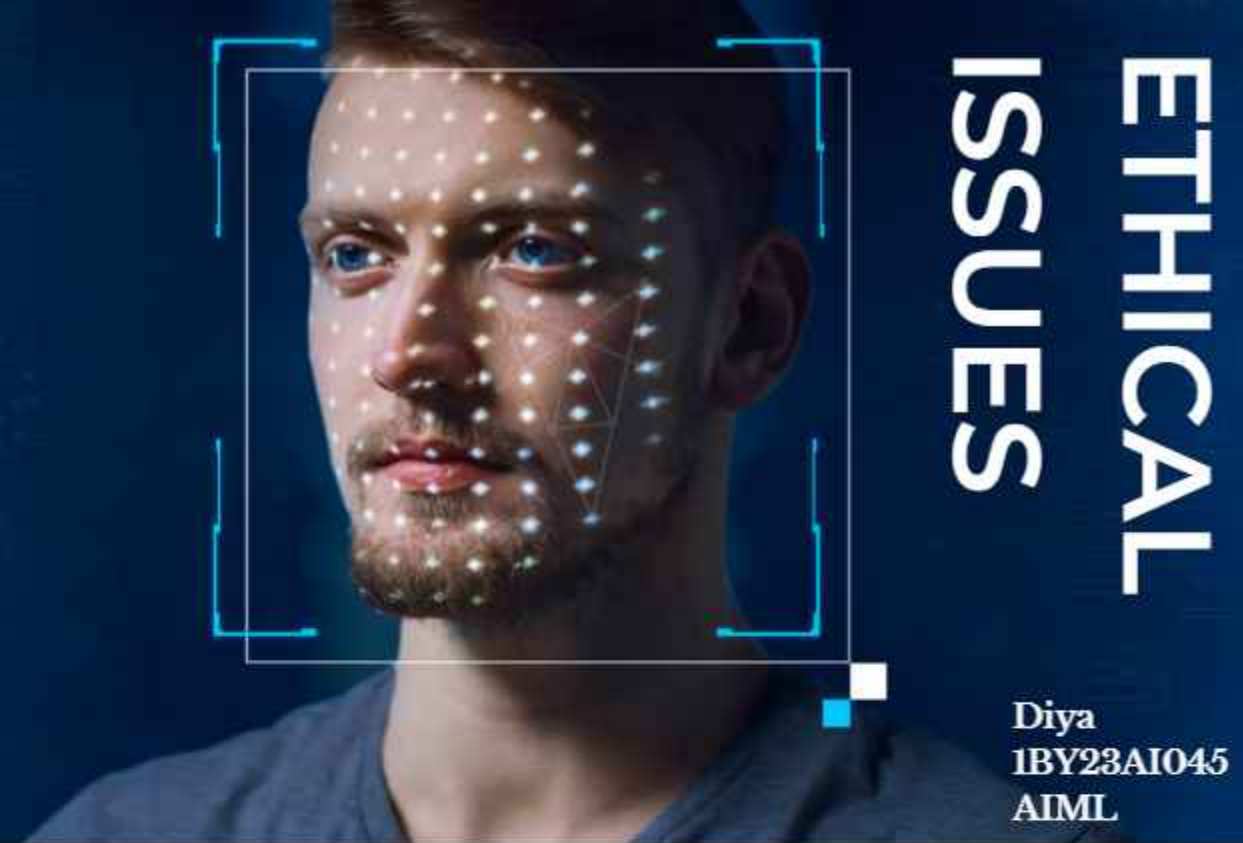
In addition to these activities, the program emphasized universal human values and the importance of maintaining ethical standards in both personal and professional life. Alumni interactions were arranged, offering students the chance to learn from the experiences of former students who have successfully transitioned into their careers.

Overall, the induction program was a comprehensive and engaging experience, leaving students well-prepared for their academic journey and future endeavors in the field of AI and ML.

DEEP FAKES AND

ETHICAL ISSUES

Diya
IBY23AI045
AIML



Artificial Intelligence, combined with machine learning has been one of the most revolutionary advancements in the field of science and technology in the 21st century. AI has wide-range applications over various sectors and has significantly transformed the functioning of multi-disciplinary activities. One of GenAI's prominent feature includes generation of images based on text prompts.

Machine Learning algorithms analyse the text prompt, search the internet for images associated with the keywords and put together a picture. Diffusion models (ML model) read data and produce images, audio or videos. AI generated images have myriad uses in the field of interior designing, fine arts, 3D designs and medical imaging. AI generated art or designs are also known as engineered art as creativity in AI is derived from the human brain's creativity.

Morphed images that are generated by utilizing deep-learning capabilities and generally misused are known as deepfakes. Generative adversarial networks (GAN) and convolutional neural networks (CNN) are used to generate deepfakes. To create a deepfake, we simply need a GPU and a free, open-source, public and readily available software. Suppose we want to morph a celebrity's image. We consider a person with similar appearance, identify distinct features using neural network models and send it for training and conversion of parameters in an encoder-decoder network, following which the faces are swapped. A few popular examples of public software that create deepfake content include ReFaceAI, DeepFaceLab, DeepSwap and FaceMagic.

DEEP FAKES AND

ETHICAL ISSUES



Diya
IBY23AI045
AIML

Steps of generating a deepfake:

1.) Data Collection:-

Gather a large amount of data of the source and target person. This data can include facial expressions, features and sequences, audio quality and body movements.

2.) Alignment of features:-

Detection of size and orientation of faces and aligning them in each frame.

Then, use AI techniques such as Convolutional Neural Networks to map input images with output and apply transformation principles such as Affine Transformation or Homography to align faces.

3.) Auto encode-Neural network models that encode input data and produce an output image or video.

4.) Decoder- Decodes specific traits of the person's face and produces an output.

AI is multi-faceted and such advanced technologies usually have a downside. Images generated by AI can also be used for unlawful acts such as synthetic identities, influence campaigns, identity theft and manipulation of private information. They may spread confusion thus resulting in an increase of frauds and crimes. Deepfakes may also be used to threaten or harass a person and give rise to unethical issues.

Deepfakes can be detected by observing movements and facial expressions of a person. Paying attention to lip-sync discrepancies may help differentiate real audio and speaker. Irregular shadows, inconsistent audio and distorted backgrounds are signs of deepfakes. In such cases, identify the source of the image and report it if found suspicious. Google has been updating its ads policy. Governments of various countries are working on stricter IT laws to stop the spread of false information and safeguard privacy of the citizens. Hence, artificial intelligence must be used sensibly and its capabilities must be regulated for public interest and safety.

PYTHON WORKSHOP

The Department of Artificial Intelligence and Machine Learning organized a thought-provoking expert talk on the topic “Python-powered Data Analysis: Unveiling Practical Insights for industry Application” for our third-semester students on February 9th, 2024. The event was graced by Mr. Chetan Adhikary Y, an IT analyst from TCS Bangalore, who provided an in-depth look into the field of data analysis powered by Python. The APJ Abdul Kalam Central Computing Lab served as the venue for the event, which held people's interest from 9:00 AM to 4:00 PM. Mr. Chetan Adhikary Y opened the session by laying the groundwork for an in-depth investigation of Python's abilities in data analysis. Possessing extensive industry expertise, he skillfully maneuvered through the complexities of Python libraries, demonstrating their practical implementation in many circumstances. The talk's highlights included Pandas, NumPy, and Matplotlib, which demonstrated their critical roles in data processing, exploration, and visualization. Attendees were exposed to hands-on demos throughout the day where they saw how Python integrates with data analysis approaches in a seamless manner. Mr. Chetan Adhikary Y shed light on the process of obtaining useful insights from unprocessed data, which can enhance organizational effectiveness. This includes data purification and sophisticated visualization tools.



At 4:00 PM, students departed with a greater understanding of Python's role in data analysis and a renewed sense of zeal. In addition to giving them practical skills, the expert discussion inspired curiosity and a desire to start their data-driven journey. Looking back, the Department of AI & ML's initiative in organizing such informative workshops serves as evidence of their dedication in promoting holistic learning. By bridging the gap between academics and industry, students are empowered to become pioneers in the rapidly changing field of technology.

PROS AND CONS OF CHATGPT-4



GPT-4

In the world of artificial intelligence, GPT-4 is a big deal. It's a major step forward in natural language processing. Like any new technology, GPT-4 has its pros and cons. Here's the breakdown.

Pros

Give me the Pros and Cons for CHATGPT-4

Sure, here are some pros and cons of using ChatGPT-4:

- **Domain Agnosticism:** GPT-4 is also very domain agnostic. It can be used in healthcare, finance, education, and entertainment. For example in the medical field, GPT-4 can diagnose conditions by analyzing patient data and medical literature. In education, it can provide personalized tutoring to students, adapt to their individual learning style and needs.
- **More Coherent and Consistent:** GPT-4 is more coherent and contextually consistent than its predecessors. This makes the user experience much better, making AI interactions more intuitive and reliable.
- **Task Automation:** GPT-4 can automate many tasks, from writing emails to generating reports to coding. This saves time and allows human workers to focus on more complex and creative parts of their jobs, potentially leading to increased productivity and job satisfaction.

However, I can provide some general pros of advanced versions of AI models like ChatGPT that continue to evolve:

Message ChatGPT

Cons

Give me the Pros and Cons for CHATGPT-4

Sure, here are some pros and cons of using ChatGPT-4:

- **Ethical and Bias:** Despite the progress, GPT-4 is not bias free. It's trained on biased data and can sometimes produce outputs that reflect societal biases. Fairness and bias in AI generated content is a big challenge that needs ongoing attention and refinement.
- **Large Datasets:** GPT-4's performance relies on large amounts of data. This is a privacy concern as sensitive data can be accidentally included in the training datasets. Also the sheer amount of data required raises questions of data accessibility and equity, potentially widening the digital divide.
- **Resource Hungry:** Training and deploying GPT-4 requires a lot of computational resources which can be expensive and environmentally unfriendly. The carbon footprint of large AI models is becoming a big concern, we need more sustainable way of building AI.

However, I can provide some general cons of advanced versions of AI models like ChatGPT that continue to evolve:

Message ChatGPT

PROS AND CONS OF CHATGPT-4



GPT - 4

Give a conclusion for the Pro's and Con's



Conclusion

- Sure, here is the conclusion for Pro's and Con's using ChatGPT-4:
- GPT-4 is another significant enhancement in the artificial intelligence, as it has innumerable advantages in terms of language awareness, its flexibility, smoothness in its messaging, and ability to perform tasks on its own. However, it also opens up dilemmas such as ethics, reliance on data, utilization of more resources, and even the potential for misinformation. While it is still possible to further augment more and more aspects of people's lives with the help of AI systems like GPT-4, these challenges must be faced through responsible, stringent, and coordinated ethical, technological, and educational approaches to outline the potential advantages and drawbacks of the technique without drawbacks. The use of GPT-4 has just started and the only thing that remains to be seen will be the subsequent developments that will unfold dependent on how this program will be further fine-tuned and used in the future for the benefit of humanity.

Message ChatGPT

By Rohit,1BY23AI129



ChatGPT

Capabilities

Limitations

Remembers what user said earlier in the conversation

My weakness: I cannot generate images or access the internet.

Allows user to provide follow-up corrections

My weakness: I cannot generate images or access the internet.

and to decline inappropriate requests

 OpenAI



Open Day 3rd Semester

In the rapidly advancing field of technology, the combination of artificial intelligence and machine learning has emerged as a cornerstone of innovation. Acknowledging this trend, the Department of AI&ML at BMS Institute of Technology & Management organized an Open Day on February 3, 2024. The event aimed to showcase the accomplishments of third-semester students through Project Based Learning (PBL), held at the Amphitheatre Academic Block.

Six teams from the third semester, selected after a rigorous preliminary round, competed for recognition. The projects, spanning Networking, Machine Learning, Big Data Analytics, and Image Processing, demonstrated the practical application of theoretical knowledge to real-world problems. Mr. Sai Prasad, Digital Product Leader at Airbus India Private Limited, Bengaluru, served as the external judge, bringing industry expertise to the evaluation process. Dr. Pradeep K R, Assistant Professor in the Department of AI&ML at BMSIT&M, acted as the internal judge, providing academic insights.

The presentations showcased a range of projects, from optimizing network efficiency to developing predictive models for stock market analysis. Each project reflected a blend of creativity and technical proficiency, highlighting the potential of AI&ML in various industries. In conclusion, the Department of AI&ML at BMSIT&M provided a platform for students to demonstrate their skills and foster innovation. The event underscored the importance of practical learning and the relevance of AI&ML in today's technological landscape.



OUR JUDGES

- Mr. Adarsh Babu M, CEO and Co-Founder of Emberquest Pvt. Ltd. Bengaluru
- Prof. Pradeep Kumar G M, Assistant Professor, Dept. of AI&ML, BMSIT&M

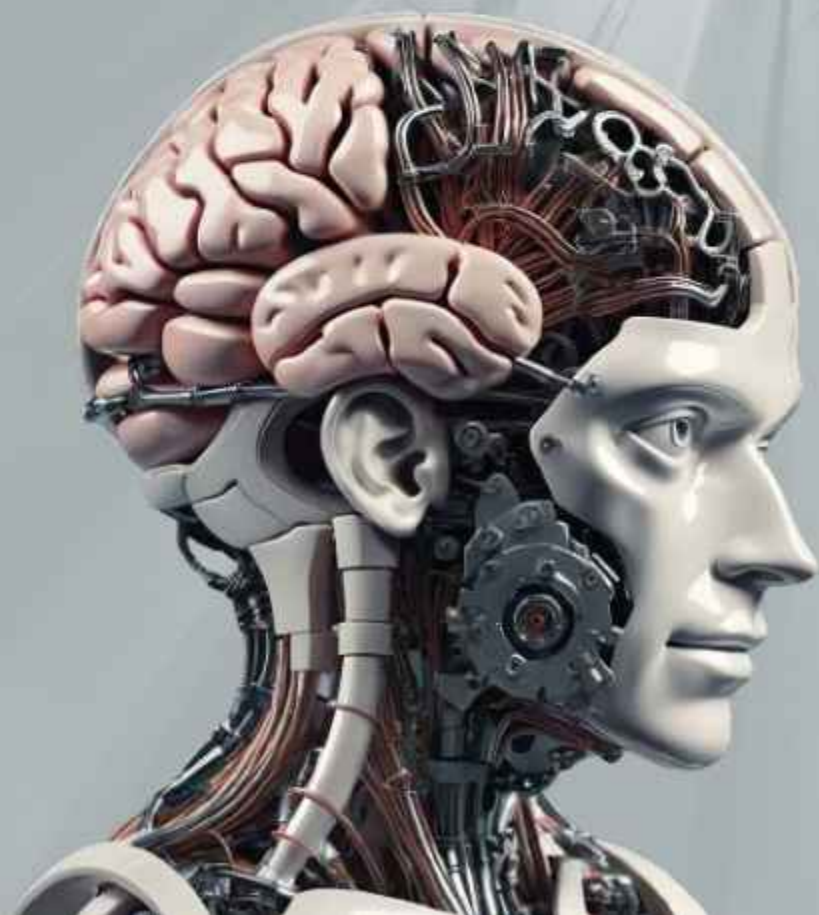
Generative Adversarial Networks

When two parties fight each other, it is termed as a battle. Most battles have gruesome consequences. This can range from loss of human lives, loss of homes and property to an overall economic loss. But not all battles have to end this way. In the world of GANs, battles can be very fruitful.

GANs stands for Generative Adversarial Networks. It is mainly composed of two parts. The generator and the discriminator. The generator partakes in generating images and the discriminator is responsible for critiquing the same. In this setup, the generator and discriminator engage in a dynamic and continuous battle where each tries to outsmart the other. The generator's objective is to create images that are so convincing that the discriminator cannot distinguish them from real images. On the other hand, the discriminator's goal is to correctly identify which images are real and which ones are generated. This adversarial process can be likened to a cat-and-mouse game. Initially, the generator produces images that are easy to spot as fake, and the discriminator accurately identifies them. However, as the training progresses, the generator improves its tactics, producing increasingly realistic images.

Concurrently, the discriminator becomes more adept at identifying subtle differences between real and generated images. This iterative process continues until the generator creates images that are indistinguishable from real ones to the human eye.

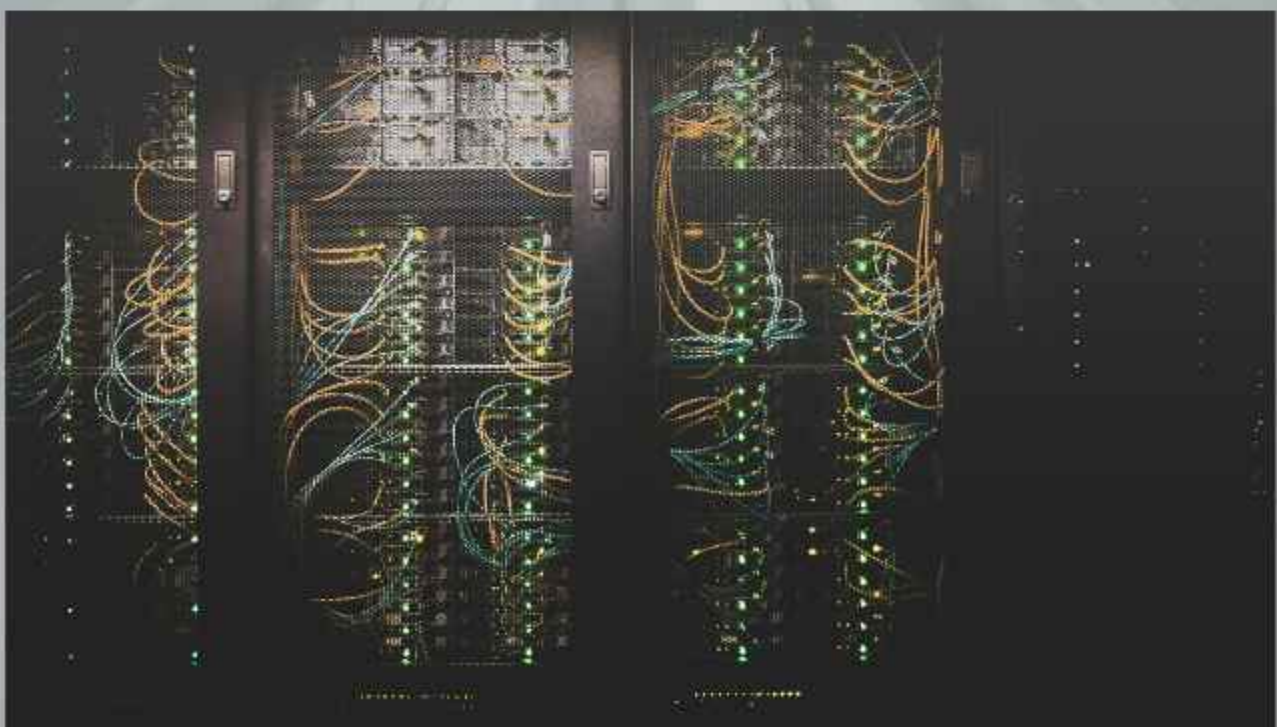
The real magic of GANs lies in this adversarial training. It pushes both the generator and the discriminator to improve continuously, resulting in highly realistic image generation.



GANs have revolutionized various fields by enabling the creation of high-quality synthetic data. In the realm of art, for example, GANs have been used to create new pieces of artwork that mimic the styles of famous artists. In the entertainment industry, they help generate realistic characters and scenes for movies and video games. GANs are also making waves in the field of medicine, where they assist in generating detailed medical images that aid in research and diagnosis.

Despite their remarkable capabilities, GANs are not without challenges. One of the primary issues is the instability of the training process. If the generator becomes too powerful too quickly, the discriminator might fail to catch up, leading to less-than-optimal results. Conversely, if the discriminator becomes too good too fast, it can make it almost impossible for the generator to learn effectively. Balancing this adversarial training process is crucial for the success of GANs. GANs represent a ground breaking advancement in artificial intelligence and machine learning. Their unique approach to learning through adversarial interaction has opened up new possibilities for innovation and creativity, making them a powerful tool in the digital age. Along with all the ethical considerations, GANs partake in a battle of instability, continually pushing the boundaries of what machines can create and challenging researchers to navigate the fine line between technological marvel and moral responsibility.

Nidhi Umashankar
1BY21A1036
6th semester, AI&ML





BIDDING ADIEU

"Don't cry because it's over. Smile because it happened." - Dr. Seuss

A MEMORABLE FAREWELL CEREMONY FOR FINAL YEAR UG STUDENTS

The Department of AI&ML conducted a heartfelt Farewell Ceremony for the final year UG students on May 11, 2023, at the Seminar Hall, 5th Floor, BSN Block. The program began with a soul-stirring invocation song, setting a reverent tone for the evening.

Dr. Anupama H S, the Head of the Department of AI&ML, addressed the students, offering valuable insights and guidance for their future careers. Her words resonated with the students, providing both inspiration and practical advice for their professional journeys.

*"HOW LUCKY I AM TO HAVE SOMETHING
THAT MAKES SAYING GOODBYE SO HARD."
— A.A. MILNE*

The ceremony was a blend of emotions and celebrations. Students shared cherished memories of their college life, reflecting on the friendships and experiences that shaped their academic journey. A specially curated memories video was screened, capturing the essence of their time at the institution and evoking nostalgia and smiles.

The evening was enlivened by a series of vibrant dance performances, showcasing the students' energy and talent. Adding to the musical ambiance, the college music band delivered an energetic performance, filling the hall with lively tunes and rhythms.

The function concluded on a high note with a DJ session, where students danced and celebrated their achievements and the bonds they had formed over the years. The Farewell Ceremony was a fitting tribute to the final year students, marking the end of their academic chapter and the beginning of new adventures.



Shristi Event

A Celebration of Innovation and Community



This event, associated with AICTE points and initiated by NSS, was a remarkable opportunity for students to engage with innovative projects and collaborative endeavors. Through their participation, our students not only showcased their organizational skills but also contributed significantly to the success of Shristi, reinforcing the spirit of innovation and community engagement.

The Shristi event was a resounding success, highlighting the importance of collaborative efforts and the innovative spirit of young minds. It was a testament to the dedication and enthusiasm of our students, guided by the capable leadership of Dr. Kantharaju V.

Under the esteemed guidance of Dr. Kantharaju V, NSS Program Coordinator and Assistant Professor in the Department of AI&ML, our students actively participated in the Shristi event, held at Atria Institute of Technology. This event was organized in collaboration with VTU, AICTE, VSS Trust, AVP, and Yuvaka Sangha from May 24, 2024, to May 26, 2024.

The Srishti Innovation Exchange is a visionary initiative designed to provide a dynamic platform for creative students and budding scientists. Our Department of AI&ML students took a proactive role in volunteering and organizing various segments of the event. They successfully managed a seminar that enlightened participants about the objectives and activities of Yuvaka Sangha. Additionally, they played crucial roles in coordinating a Hackathon, Roborace, and Cadman competitions.





INDUSTRIAL VISIT

The AI&ML Department organized an industrial visit on February 8, 2024, inviting 125 third-semester students along with three accompanying faculty members. This excursion was designed not only to provide practical insights but also to foster a comprehensive learning experience.

During the visit, students had the opportunity to explore the culturally significant Nandi Temple, a highlight of their social connection responsibility course. This engagement into cultural heritage aimed to broaden their perspectives beyond the confines of technical knowledge and cultivate a deeper understanding of societal dynamics. The experience at the Nandi Temple offered more than just historical insights. It encouraged students to reflect on their roles as responsible citizens and appreciate the rich tapestry of traditions woven in society.

By stepping out of the classroom and into the cultural landscape, students gained invaluable perspectives that complemented their academic learning. They were able to connect theoretical knowledge with real-world contexts, enhancing their overall understanding and appreciation of diverse cultures. Furthermore, the visit provided an opportunity for students to bond with their peers and faculty members outside of the academic setting, fostering a sense of companionship and collaboration. At the end of the day the industrial visit to the Nandi Temple shows the AI&ML Department's commitment to providing holistic education experiences. By integrating cultural exploration into the curriculum, the department not only enriches students' academic journeys but also equips them with the cultural understanding and social awareness necessary for success in an interconnected world.

ARTIFICIAL INTELLIGENCE (AI) IS INCREASINGLY INTEGRATED INTO CYBERSECURITY, PROVING TO BE A POWERFUL TOOL FOR PROCESSING VAST AMOUNTS OF DATA SWIFTLY AND ACCURATELY. ITS ADAPTABILITY AND LEARNING CAPABILITIES MAKE IT IDEAL FOR ADDRESSING A WIDE RANGE OF CYBER THREATS.

One of AI's significant contributions to cybersecurity is in threat detection. Traditional security systems often rely on predefined rules and signatures to identify malicious activities, making them less effective against new and evolving threats. In contrast, AI employs machine learning algorithms to analyze network traffic, user behavior, and other data, identifying anomalies that may indicate a cyber attack. By learning from past incidents, AI can recognize new and emerging threats, significantly reducing the time needed to respond to potential breaches.

AI & Cybersecurity

AI also strengthens cybersecurity through predictive analytics, which involves analyzing historical data to forecast future threats. By identifying patterns and trends that precede cyber attacks, AI systems enable organizations to bolster their defenses proactively, minimizing potential damage.

Another crucial application of AI in cybersecurity is the automation of security processes. Manual monitoring and response to security alerts can be time-consuming and error-prone. AI can automate these responses, ensuring faster and more precise reactions to security incidents. For instance, AI can automatically quarantine affected systems, block malicious traffic, and initiate recovery protocols following an attack.

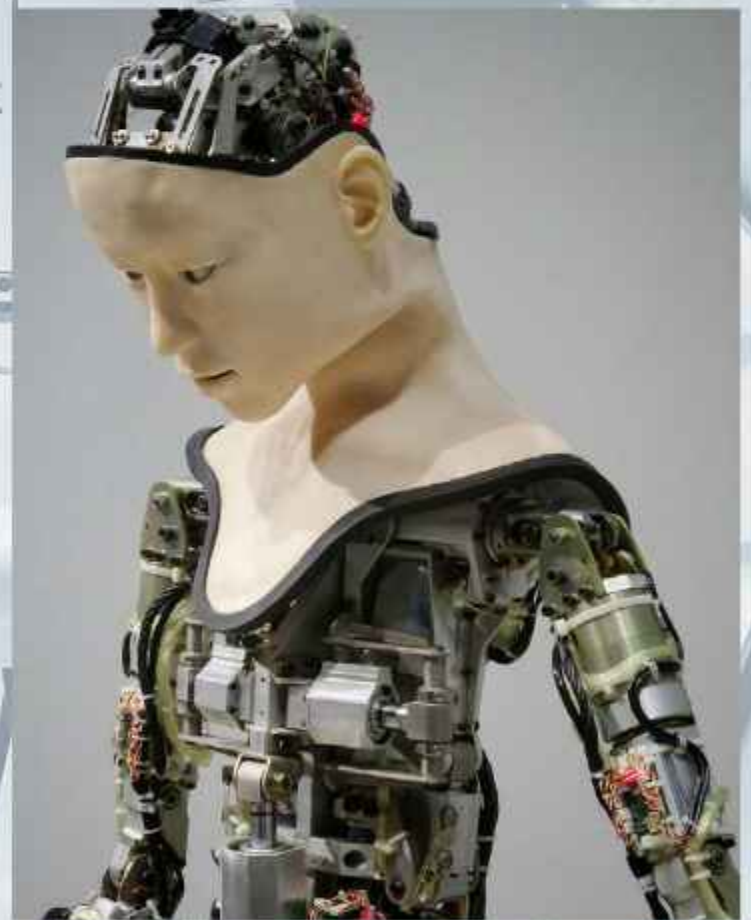
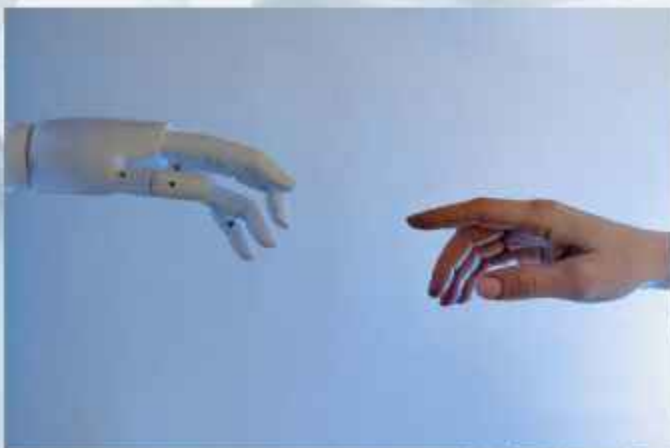
While AI excels at processing and analyzing large volumes of data, it does not replace human cybersecurity professionals. Instead, it handles routine and repetitive tasks, allowing human experts to focus on more complex and strategic activities. AI also provides valuable insights and recommendations, assisting cybersecurity teams in making more effective decisions and enhancing their strategies for robust security.



However, the rise of adversarial AI poses significant challenges. Cyber attackers are increasingly using AI techniques to develop sophisticated attacks. They can create AI algorithms to evade detection, craft convincing phishing emails, and uncover system vulnerabilities. Consequently, cybersecurity defenses must continuously evolve to counter these advanced threats.

Ethical and privacy considerations are also paramount when deploying AI in cybersecurity. AI systems can potentially infringe on privacy by monitoring and analyzing vast amounts of personal data. Ensuring transparency, fairness, and confidentiality in AI applications is crucial for maintaining trust and compliance with legal and regulatory standards.

In conclusion, AI has become a vital ally in cybersecurity by enhancing threat detection, predictability, and automation. Despite challenges like adversarial AI and ethical concerns, the benefits of AI in cybersecurity are substantial. As technology advances, AI will play an increasingly essential role in safeguarding digital assets and ensuring the security of information systems.



Ganesh Darshan
1BY22AI027



MASTERING VERSION CONTROL:

Workshop on Git and GitHub by

Mr. Suraj M B

GIT & GITHUB

The Department of AI&ML organized an informative and hands-on workshop titled "Introduction to Git and GitHub" on June 29, 2024, from 9:00 AM to 4:30 PM, specifically tailored for the 4th and 6th semester students of the department.

This engaging and educational session, held at the APJ Abdul Kalam Central Computing Lab on the 4th Floor of the Lab Block, was expertly conducted by Mr. Suraj M B, a Senior DevOps Engineer at Learningmate Solutions Pvt. Ltd., Mumbai.



Mr. Suraj provided a comprehensive overview of Git and GitHub, covering installation, basic commands, merging, and collaboration workflows. The hands-on workshop allowed students to practice these concepts in real-time scenarios, enhancing their understanding and skills in version control.

The workshop was highly interactive, with Mr. Suraj addressing student queries and ensuring a thorough grasp of the topics. The event successfully equipped students with essential version control skills, crucial for collaborative software development.

TESLA BOTS

Mayank Gupta
IBY23AI083
2nd Sem , AI&ML - 'F'

BRIDGING THE GAP BETWEEN HUMANS AND MACHINES

IN THE EVER-EVOLVING LANDSCAPE OF ROBOTICS, TESLA'S HUMANOID CREATION, OPTIMUS, HAS BEEN TURNING HEADS. LET'S DIVE INTO ITS RECENT UPDATES AND EXPLORE WHAT LIES AHEAD.

Walking the Walk: Optimus Strides Ahead

Imagine a robot that walks with the grace of a ballet dancer yet possesses the strength to lift heavy objects. That's Optimus for you. In a recent video shared by Tesla, the humanoid robot glided around a testing facility, its movements fluid and purposeful. It's like watching a sci-fi movie come to life. But here's the kicker: Optimus has been hitting the gym. Its walking speed has increased by a whopping 30% since the last video. At approximately 0.6 meters per second (that's about 1.34 miles per hour), Optimus is already faster than most pedestrians. Soon, it might even outpace your morning jog.

Beyond the Factory Floor: What's the Big Picture?

So, why are we building these robots? The answer lies in finding the delicate balance between collaboration and replacement. As robots become more capable, some fear they'll snatch away our jobs. But Tesla's vision is different. They want Optimus to be our teammate, not our competitor.

Imagine a world where Optimus handles repetitive tasks—like assembling car parts—while we humans focus on creativity, problem-solving, and innovation. It's a symbiotic relationship: robots do the heavy lifting (literally), and we get to do the thinking and creating.

The Million-Dollar Question: What Makes Us Human?

As Optimus strides confidently across the factory floor, we're left pondering: What defines us as humans? Is it our ability to walk, talk, and think? Or is it something deeper—the spark of creativity, the warmth of empathy, the joy of discovery?

Perhaps the real challenge lies in preserving our humanity while embracing intelligent machines. Can we find fulfillment beyond work? Maybe our purpose extends beyond mere productivity. Maybe it's about connecting, dreaming, and exploring the uncharted territories of our minds.

ವಿಶ್ವವಿದ್ಯಾಲಯ ಕೈಗಾರಿಕಾ ಮತ್ತು ತಾಂತ್ರಿಕ ವಸ್ತು ಸಂಗ್ರಹಾಲಯ

VISVESVARAYA



INDUSTRIAL VISIT OF 2ND SEMESTER

Visvesvaraya Industrial & Technological Museum

On April 17, 2024, the students of the Department of AI&ML, 2nd Semester had the opportunity to visit the Visvesvaraya Industrial & Technological Museum.

The visit was a great learning experience for the students, as they were able to see a wide range of exhibits related to science, technology, and industry. The museum houses a collection of interactive exhibits that showcase the history and development of various technologies. Some of the exhibits that may have been particularly interesting for the AI&ML students include:

- The "Spark Lab" which showcases various robotics concepts
- The "Telecommunication Gallery" that traces the evolution of communication technologies
- The "Fuel and Power Gallery" that explores different power generation methods

The industrial visit provided a valuable opportunity for the students to apply their classroom knowledge to real-world applications. Seeing these technologies can help them understand the practical applications of artificial intelligence and machine learning. It is hoped that this visit will help the students to understand how a concept works in real life and inspire them to pursue careers in real life fields.

THE OPEN DAY

5th Semester

"Open Day: A gateway to explore opportunities, connect with the community, and ignite passions."



On February 22, 2024, an Open Day event was conducted for the 5th semester students in the Amphitheatre Academic Block at BMS Institute of Technology and Management (BMSIT&M). This event showcased the innovative ideas and projects developed by the students, primarily focusing on domains such as Networking, Machine Learning, Big Data Analytics, and Image Processing.

The Open Day provided a platform for all 5th semester students to present their work, allowing them to demonstrate their technical skills and creativity. Among the numerous projects presented, four were shortlisted for further evaluation. The evaluation panel consisted of Mr. Adarsh Babu M, the CEO and Co-Founder of Emberquest Pvt. Ltd. in Bengaluru, and Prof. Pradeep Kumar G M, an Assistant Professor in the Department of AI & ML at BMSIT&M.

The presence of esteemed professionals and academics not only provided valuable feedback to the students but also encouraged them to pursue excellence in their respective fields. This event was a testament to the innovative spirit and technical prowess of the students at BMSIT&M, highlighting their potential to contribute significantly to the fields of technology and engineering.



In addition to the evaluations, the Open Day featured a competition segment where various project-based learning (PBL) initiatives were showcased and judged. Two standout projects were awarded prizes for their exceptional innovation and execution. The first prize was awarded to the team from section AI-A2, consisting of Anand Bhat, Aravind M, Neha Santhosh, and Sirisha Satish. Their project, titled "Enhanced Motion Detection System for Home Automation," was guided by Prof. Sanjay M Belgaonkar. This project demonstrated advanced capabilities in improving home automation through sophisticated motion detection technologies, reflecting significant practical applications in modern smart home systems.

The second prize was secured by the team from section AI-A3, comprising Bommisetty Rahul, Chandrahas Reddy B, Vishnu Vardhan Reddy, and Megha Raghul G. Under the guidance of Dr. Niranjana Murthy M, they developed a "Mini Virtual Assistant using Sign Language." This project aimed at bridging communication gaps for individuals with hearing impairments by leveraging sign language recognition to create a user-friendly virtual assistant. Both projects not only exemplified the innovative spirit of the students but also their commitment to addressing real-world challenges through technology.



UNDERSTANDING NATURAL LANGUAGE PROCESSING: BRIDGING HUMAN AND MACHINE COMMUNICATION

By AKASH JP ,1BY22AI011



Natural language processing (NLP) is a dynamic field within artificial intelligence and computer science focused on enabling computers to comprehend, interpret, and generate human language. This endeavor is particularly challenging due to the vast amounts of unstructured data and the unique, ever-evolving ways people communicate, often referred to as "tone of voice."

Core Components of NLP

A crucial aspect of NLP is Natural Language Understanding (NLU), which teaches machines to grasp the nuances and context of human language. NLU goes beyond literal interpretation, involving machine reading comprehension to help computers understand deeper meanings and contexts. Another important component is Natural Language Generation (NLG), which focuses on producing human-like text from data. This capability is used in various applications, such as customer service chatbots and automated content creation tools, where generating coherent and contextually appropriate responses is essential.


How does NLP function?

NLP works through a series of sophisticated processes. Tokenization breaks text into smaller units, such as words or sentences, facilitating easier analysis. Part-of-speech tagging identifies grammatical components within sentences, like nouns, verbs, and adjectives, to understand their roles. Text classification involves categorizing text into predefined categories, such as spam detection in emails. Parsing analyzes the structure of sentences based on grammar rules to draw out meaning, while semantic analysis goes beyond literal text, often linked to sentiment analysis to gauge emotional tone.

AI's Relationship with NLP

NLP is vital for AI to interact naturally with humans and achieve true intelligence. Advances in deep learning are continuously enhancing AI's ability to perform tasks requiring human-like understanding. The possibility of AI reaching human-level intelligence raises important philosophical and ethical considerations about artificial consciousness and the future of human-computer interaction.





Faculty Achievements

DR ANUPAMA H S

- Anupama H S, Associative professor, AI&ML, presented paper titled “Adversarial learning for De-Identification of Medical-Record “in IEEE 2nd International Conference On Knowledge Engineering And Communication System held at S J C INSTITUTE OF TECHNOLOGY Chickaballapur on 19.04.2024 .

DR BHARATHI M A

- Bharathi, M. A., I. S. Rajesh, C. Maithri, and Manjunath Sargur Krishnamurthy. “Routing Strategies for Quality of Service Optimization over Vehicular Ad Hoc Networks: A Review.” In International Conference on Smart Computing and Communication, pp. 97-111. Singapore: Springer Nature Singapore, 2024.

DR RAJESH I S

- Bharathi, M. A., I. S. Rajesh, C. Maithri, and Manjunath Sargur Krishnamurthy. “Routing Strategies for Quality of Service Optimization over Vehicular Ad Hoc Networks: A Review.” In International Conference on Smart Computing and Communication, pp. 97-111. Singapore: Springer Nature Singapore, 2024.

DR NIRANJANAMURTHY M

- Dr. Niranjnamurthy M, Assistant professor(S), Department of AI&ML was a BOS Member for Ph.D. programme Syllabus at Jain University, Bangalore on 05.01.2024.
- Dr. Niranjnamurthy M, Assistant professor(S), Department of AI&ML was a reviewer for “Multimedia Tools and Applications An International Journal” (Journal is indexed in SOCPUS, SCI)
- Jatain, Divya, M. Niranjnamurthy, and P. Dayananda. “A Hybrid Bio-inspired Fuzzy Feature Selection Approach for Opinion Mining of Learner Comments.” SN Computer Science 5, no. 1 (2024): 135.



Faculty Achievements

DR KANTHARAJU V

- Kantharaju V, Assistant professor, AI&ML, presented paper titled “Impact of hybrid[CPU_GPU]Architecture On Machine Learning-Based Image-To-Image Translation Using HiDT” in IEEE 2nd International Conference On Knowledge Engineering And Communication System held at S J C INSTITUTE OF TECHNOLOGY Chickaballapur on 19.04.2024.

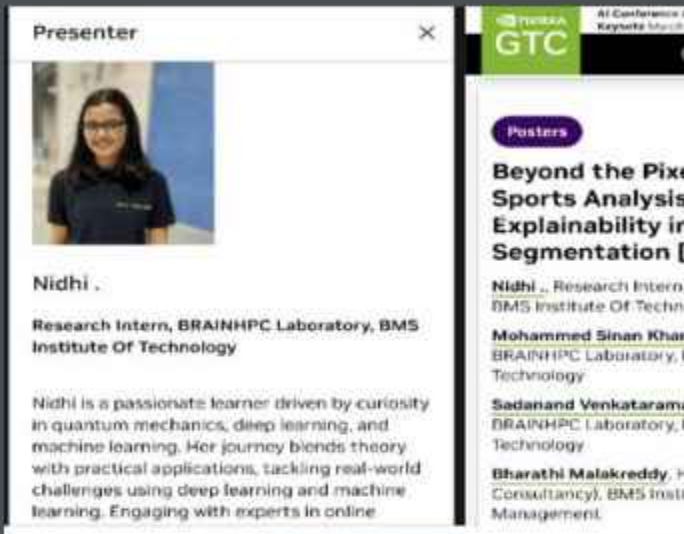
DR PRADEEP K R

- Pradeep K.R, Assistant professor, AI&ML, presented paper titled “Personalized Adaptive Learning Empowered By Artificial Intelligence” in IEEE 2 nd International Conference On Knowledge Engineering And Communication System held at S J C INSTITUTE OF TECHNOLOGY Chickaballapur on 19.04.2024.

MR PRADEEP KUMAR GM

- Mr.Pradeep Kummar GM, Assistant professor , Department of AI&ML was a resource person for SJC Institution of Technology, Chickaballapura, on the topic “Python Programming” on 13.01.2024 and 14.01.2024.

Student Achievements



Ms.Nidhi (1BY20AI032) 8th semester student AI&ML department , paper titled "Beyond the pixels : elevating sports analysis vis AI Explainability in semantic segmentation" has been selected for presentation at the prestigious NVIDIA GTC Conference 2024 in San Jose, California.

Chat Generative Pretrained Transformer (ChatGPT) for Data Analysis



Nidhi Umashankar and Sirisha Satish of the 6th semester successfully presented a paper titled : "Chat Generative Pre-Trained Transformer(ChatGPT) for Data Analysis " along with Dr Niranjnamurthy M and Dr Kantharaju V



Mayank Gupta secured the 1st place in "NatShot - III", a photography competition jointly conducted by OIKOS (eco club) and Photography Club on the 22nd of May to commemorate World Biodiversity Day

VISHAL PRAJWAL M, SUMUKHA G K, GANESH DARSHAN VENKATRAMAN BHAT, students from the AI&ML department, achieved the 1st prize in the "48 Hours Hackathon" held at Atria Institute of Technology from 24.05.2024 to 26.05.2024.



STUDENT *Submissions*



Sonali Kumari
1BY22AI100



Ujwala Shet
1BY23AI180



Suman Singh
1BY22AI097



Vedashree B
1BY22A1119



Spandana H
1BY22A1101



Namitha K G
1BY22A1059



Mayank Gupta, 1BY23A1083

AI IN MUSIC

Artificial Intelligence (AI) is significantly transforming the music industry, presenting both opportunities and challenges across its entire ecosystem. AI tools like Amper Music's Songwriter and AIVA are revolutionizing music creation by helping generate melodies, chords, and lyrics. Platforms like BandLab's Band-in-a-Box and Preonus' Notion refine song structures, while AI-driven instruments such as IBM's Watson Beat foster innovation. These advancements democratize music production, making sophisticated tools accessible to more artists.

A notable example is the completion of a new Beatles song using an old demo tape by John Lennon. AI isolated Lennon's voice, allowing Paul McCartney, Ringo Starr, and recordings of George Harrison to collaborate, producing a new track after 45 years. This highlights AI's potential to revive and complete historical musical projects, preserving cultural heritage. In distribution and consumption, AI algorithms on platforms like Spotify and Apple Music analyze user behavior to curate personalized playlists, introducing listeners to new artists and genres. This enhances the music experience and broadens listeners' horizons, making music discovery more efficient and tailored to individual tastes.

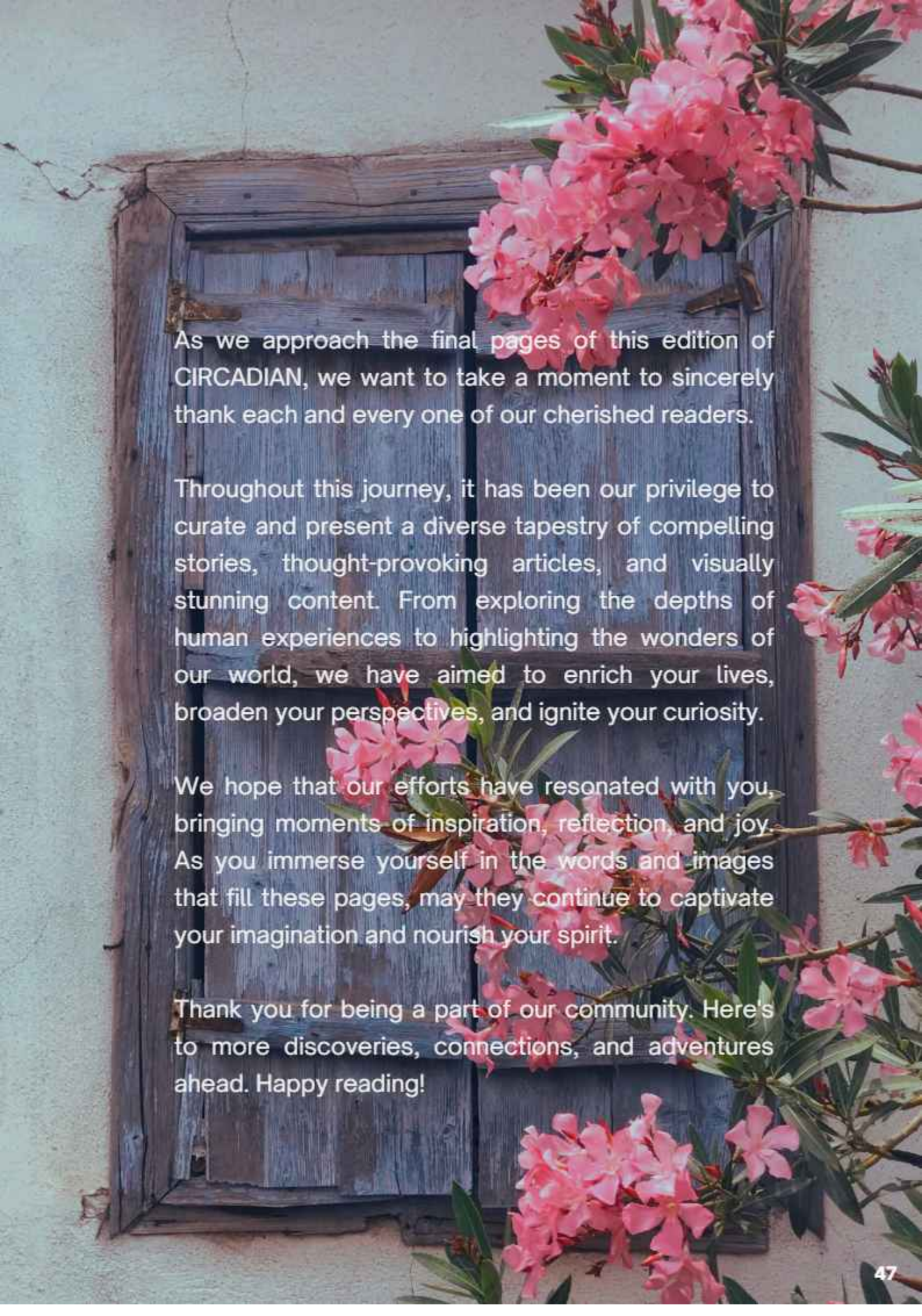
However, AI-generated music raises concerns about copyright and ownership. Warner Music Group has asked streaming platforms to block AI from training on their music to protect artists' work. AI-generated deep fakes, which create realistic but deceptive audio content, also pose ethical challenges. For instance, an AI-generated fake duet between Drake and The Weeknd sparked debates about the unauthorized use of artists' names and likenesses.

Universal Music Group's partnership with YouTube to launch the Music AI Incubator underscores the importance of responsible AI use, advocating for collaboration, protection, and safety measures. This initiative sets a precedent for industry-wide standards in integrating AI while safeguarding artists' rights.

AI tools like BandLab's SongStarter, Midjourney, Mix Monolith, LANDR's AI mastering, and AIVA offer diverse applications in music creation, from generating song ideas to mastering tracks. ChatGPT supports additional tasks such as social media strategy, tour planning, lyric writing, content creation, and drafting agreements. These tools streamline many aspects of music production and promotion, allowing artists to focus more on their creative processes.

Despite its benefits, AI in music must be approached with caution. Ensuring ethical use, addressing biases in AI training data, and creating clear regulations around copyright are essential steps. The industry must balance technological advancement with responsible practices to protect artists' rights and maintain the integrity of creative work.

In conclusion, AI's impact on the music industry is profound, presenting vast opportunities alongside ethical challenges. The key lies in balancing technological innovation with responsible practices, ensuring a future where AI and artistry coexist harmoniously, driving the industry toward new creative horizons. By embracing AI while addressing its challenges, the music industry can evolve and thrive in an increasingly digital world.

A rustic wooden door with a weathered, greyish-blue finish is set into a light-colored, textured wall. The door has a simple rectangular design with a central panel and is framed by a dark wooden border. In the foreground, several branches of pink flowers, possibly oleander, are in full bloom, partially obscuring the door. The overall scene is warm and inviting, suggesting a sense of home and community.

As we approach the final pages of this edition of CIRCADIAN, we want to take a moment to sincerely thank each and every one of our cherished readers.

Throughout this journey, it has been our privilege to curate and present a diverse tapestry of compelling stories, thought-provoking articles, and visually stunning content. From exploring the depths of human experiences to highlighting the wonders of our world, we have aimed to enrich your lives, broaden your perspectives, and ignite your curiosity.

We hope that our efforts have resonated with you, bringing moments of inspiration, reflection, and joy. As you immerse yourself in the words and images that fill these pages, may they continue to captivate your imagination and nourish your spirit.

Thank you for being a part of our community. Here's to more discoveries, connections, and adventures ahead. Happy reading!