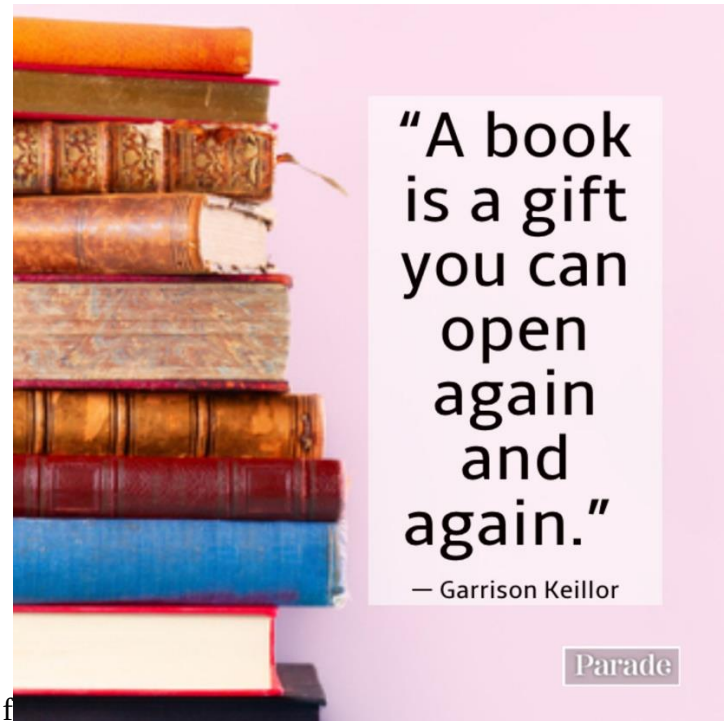
Thought of the Month



f

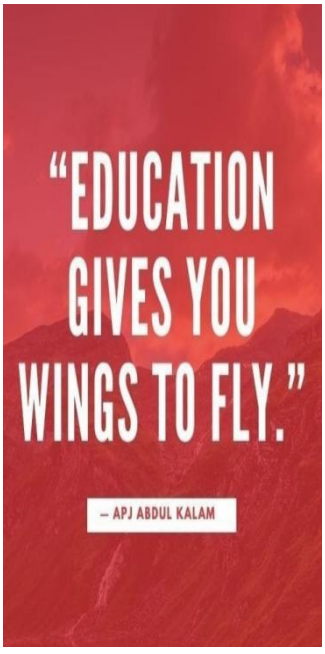
Editorial Board

Editor
Ms. Dapinty Saini

E-mail:
dapinty.4946@cgc.edu.in

Student Coordinator:
Naman Gupta
(3rd year)

DID YOU KNOW



Department of Computer Science and Engineering CEC, CGC Landran

Vision of the Department

To develop proficient, research oriented and socially responsible professionals in the field of Computer Science and Engineering.

Mission of the Department

M1: To strengthen the core competence in Computer Science and Engineering through effective teaching learning methodologies.

M2: To provide research oriented environment in the area of Computer Science and Engineering addressing the need of industry and society.

M3: To promote industrial interactions and hands-on experience on latest IT tools leading to successful professional career.

M4: To facilitate the students with global exposure through international collaborations and internships.

M5: To prepare students for placements, higher studies and entrepreneurship through pre placement training programs.

Chandigarh Engineering College –CGC Landran, Mohali (Punjab)

CEC CSE BROADCAST

Volume – 8

Issue –

April 2024 to June 2024

Published on:

Message from the Head HR

Mr. Barinder S. Sawhney
Head-HR

We all know that CGC is an institution par excellence in providing academic brilliance and placement opportunities. I am elated to hear that CEC is coming up with their fourteenth edition of the newsletter, since it acts as a platform to motivate the students and faculty to learn and showcase their talent and also helps them to indulge in academic activities.

I pass on my good wishes to the entire team associated with the newsletter and wish them success for the future.

Importance of Feature Extraction methods for Real World Applications

To built any real world application there are four phases and these are Image Pre-processing, Feature Extraction, Dimension reduction and Classification. Some examples of the real world applications are Biometric authentication, Mobile phones, Surveillance cameras, For Security purposes etc. In pre-processing the steps of image enhancement and image filtering are performed. Then important and relevant features are extracted through robust and discriminant algorithms. Dimension reduction is necessary to choose the essential features for classification by removing the redundant features. Finally the matching is performed by using the effective and efficient classifier. Among all these phases the feature extraction is the most prominent and major phase. The feature extraction method is classified into different categories and these are local, global, hybrid and deep learning. For different applications application the results achieved by the deep methods is very amazing. In most of the unconstrained conditions the deep learning methods achieve astounding results. For extracting features in deep methods a pre-trained deep CNN is utilized. Some examples of deep methods are AlexNet, VGG, ResNet-50 and LetNet.

CSE and IT Department of CEC CGC Organized 4th International Conference on Computational Methods in Science and Technology, (ICCMST 2024) – 2nd and 3rd May, 2024

The Department of CSE and IT at Chandigarh Engineering College-CGC, Landran, organized the 4th International Conference on Computational Methods in Science & Technology (ICCMST 2024) on 2nd and 3rd May 2024.

The inaugural function commenced at 10 am on 2nd May 2024. The Honorable Chief Guest for the event was Prof. (Dr.) Susheel Mittal, Vice Chancellor of I.K. Gujral Punjab Technical University, Jalandhar. The Guest of Honor, Prof. (Dr.) Lalit Kumar Awasthi, Director of NIT, participated virtually. Additionally, Prof. (Dr.) Divya Bansal, Head of Cyber Security Research Centre at Punjab Engineering College, Chandigarh, also graced the occasion.

The inaugural session featured two international speakers: Dr. Marek Bolanowski from Poland and Dr. Daniel D. Dasig Jr. from the Philippines, who shared their research and expertise with research scholars, faculty members, and students.

The function began with a welcome address from the Honorable Management of CGC, Landran. Dr. P.N. Hrishekeesha, Campus Director, and Dr. Rajdeep Singh, Executive Director (Engineering), were welcomed by Ms. Parneet Kaur, one of the conference organizers.

Dr. P.N. Hrishekeesha welcomed all the dignitaries and praised the organizing team and participants for their efforts in arranging the conference. Prof. (Dr.) Divya Bansal, Guest of Honour, addressed the participants on the importance of hard work and passion, offering valuable insights that could benefit research scholars and students in their respective organizations.

Prof. (Dr.) Susheel Mittal, Vice Chancellor of IKGPTU, Jalandhar, delivered a speech on bridging the gap between industry and academia, advocating for real-time solutions to everyday problems and encouraging students to pursue careers in industry.

Prof. (Dr.) Lalit Kumar Awasthi, Director of NIT Uttarakhand, joined virtually and discussed the role and significance of Artificial Intelligence in today's world, urging students to stay updated with the latest trends and technologies.

The keynote speakers, Dr. Marek Bolanowski from Poland and Dr. Daniel D. Dasig Jr. from the Philippines, then presented their talks. Dr. Sukhpreet Kaur, HOD-CSE, concluded the inaugural ceremony with a vote of thanks, expressing gratitude to all dignitaries and participants and encouraging future events to facilitate knowledge sharing and expertise.


CGC
NAAC GRADE A+


CHANDIGARH GROUP OF COLLEGES
NAAC GRADE A+
Chandigarh Engineering College - CGC Landran, Mohali
Department of Computer Science Engineering &
Department of Information Technology
Presents


BUILDING CAREERS. TRANSFORMING LIVES.

Following their speeches, all dignitaries and delegates of the conference released the conference proceedings and were felicitated.
The keynote speakers, Dr. Marek Bolanowski from Poland and Dr. Daniel D. Dasig Jr. from the Philippines, then presented their talks. Dr. Sukhpreet Kaur, HOD-CSE, concluded the inaugural ceremony with a vote of thanks, expressing gratitude to all dignitaries and participants and encouraging future events to facilitate knowledge sharing and expertise.

After the inaugural ceremony, three parallel technical sessions commenced, where research scholars presented their papers on Machine Learning, Cloud Computing, Recent Advancements and Challenges in Artificial Intelligence, Internet of Things, Cybersecurity, and Blockchain Technologies. Session Chairs evaluated and provided feedback on the presented papers.

The second day commenced with two parallel technical sessions featuring presentations by research scholars. The sessions covered papers in tracks such as Big Data Analytics & App Communication Networks/IoT/System Design & Methodologies/ICT for Sustainable Environment, and Artificial Intelligence, Cyber Fraud, and Swarm Intelligence.

The valedictory function began at 2 pm on 3rd May 2024, with the Honorable Chief Guest, Dr. Aparna Akula, Principal Scientist at the Centre of Excellence for Intelligent Sensors and Systems (ISenS), CSIR-CSIO, Chandigarh.

The function started with a welcome from the Honorable Management of CGC, Landran, including Chairman S. Satnam Singh Sandhu, President S. Rashpal Singh Dhaliwal, Honorable Campus Director Dr. P.N Hreeshakesha, and Honorable Executive Director (Engineering) Dr. Rajdeep Singh. They were welcomed by Ms. Megha Sharma, a member of the Organizing Committee.

Subsequently, Dr. P.N Hreeshakesha, the Campus Director, welcomed the Chief Guest for the valedictory function and congratulated the entire conference team for its success.
Dr. Aparna Akula, in her address, motivated the attendees and delegates by emphasizing the importance of designing multidisciplinary projects in today's interdisciplinary world. She also provided insights into her own projects.

Following her speech, three participants and authors shared their reflections on the conference, and five best paper awards were announced. The Chief Guest was then felicitated.

The valedictory ceremony concluded with a vote of thanks delivered by Dr. Amanpreet Kaur, Convener of ICCMST 2024. She expressed gratitude to all dignitaries, participants, session chairs, administrative members, the branding team, and all faculty members and students who contributed directly or indirectly to the success of the conference.
The conference was concluded successfully.

95.50 प्रतिशत पास प्रतिशत के साथ भी उपस्थित थे।

परिचालक के संपर्क नंबर, वाहन दस्तावेज अधिक का उल्लेख हो।

सीजीसी लांडरां ने चैथी इंटरनेशनल कांफ्रेंस ऑन कम्प्यूटेशनल मैथड इन साइंस एंड टेक्नोलॉजी करवाई

सवेरा न्यूज / विजयपाल

मोहाली 2 मई : सीजीसी लांडरां के कंप्यूटर साइंस इंजीनियरिंग डिपार्टमेंट (सीएसई) और इनफार्मेशन टेक्नोलॉजी (आईटी) डिपार्टमेंट ने आज चैथी इंटरनेशनल कांफ्रेंस ऑन कम्प्यूटेशनल मेथड इन साइंस एंड टेक्नोलॉजी (आईसीसीएमएसटी-2024) का उद्घाटन प्रो. (डॉ.) सुशील मित्तल ने किया। यह दो दिवसीय आयोजन सीजीसी के इंटरडिसिप्लिनरी रिसर्च, साइंस और टेक्नोलॉजी के क्षेत्र में कोलैबोरेटिव पहलों को और इनोवेशन को बढ़ावा देने के प्रयासों को प्रदर्शित करता है। इस कांफ्रेंस के लिए 759 पेपर सबमिट हुए जिनमें से पीअर समीक्षा प्रक्रिया के बाद, 167 पेपर को प्रस्तुत करने के लिए चुना गया। कॉन्फ्रेंस के पहले दिन 350 से अधिक प्रतिभागियों ने भाग

चैथी इंटरनेशनल कांफ्रेंस ऑन कम्प्यूटेशनल मेथड इन साइंस एंड टेक्नोलॉजी (आईसीसीएमएसटी-2024) का उद्घाटन करते मुख्यातिथि और संबोधित करते व कार्यक्रम में शिरकत करते हुए प्रो. (डॉ.) सुशील मित्तल। (बब्बर)

लिया। कॉन्फ्रेंस में उपस्थित महानुभवी गेस्ट्स के द्वारा रिसर्च कंट्रीब्यूशन पर एक सीविनयर भी रिलीज किया गया। इस कांफ्रेंस के उद्घाटन समारोह में चीफ गेस्ट के रूप में इकेजीपीटीयू जालंधर के वाइस-चांसलर, प्रो. (डॉ.) सुशील मित्तल, उपस्थित हुए, प्रो .(डॉ.) दिव्या बंसल, पंजाब इंजीनियरिंग कॉलेज, चंडीगढ़, (डीम्ड टू भी यूनिवर्सिटी) की सीएसई की प्रोफेसर और हेड (साइबर सिक्योरिटी रिसर्च सेंटर), गेस्ट ऑफ ऑनर के रूप में उपस्थित हुईं और प्रोफेसर (डॉ.) ललित कुमार अवस्थी, डायरेक्टर ऑफ नेशनल इंस्टिट्यूट ऑफ टेक्नोलॉजी, उत्तराखंड, जो वर्चुअल मोड के द्वारा कांफ्रेंस में शामिल हुए।

डॉ पी.एन. हृषीकेश, कैपस डायरेक्टर, सीजीसी लांडरां, डॉ. राजदीप सिंह, एग्जीक्यूटिव डायरेक्टर (इंजीनियरिंग), और डॉ. रुचि सिंगला, डायरेक्टर आर एंड डी, सीजीसी लांडरां, आदि जिन्होंने सभी गेस्ट्स का स्वागत किया। इसके साथ साथ प्रमुख कीनोट स्पीकर के रूप में जेंजोव् टेक्नोलॉजी यूनिवर्सिटी, पोलैंड, से प्रो. (डॉ.) मारेक बोलानोव्स्की, और डेला सल यूनिवर्सिटी, फिलीपींस, से प्रो. (डॉ.) डेनियल डी. डेसिग जूनियर, शामिल हुए। जिन्होंने अपने विचार और उनकी विशेषज्ञता वर्चुअल मोड के द्वारा सबके साथ सांझा कीं आईसीसीएमएसटी - 2024 की प्रक्रियाएँ टेलर एंड फ्रांसिस (सीआरसी प्रेस) द्वारा स्कोपस इंडेक्स में प्रकाशित की जाएंगी, जो रिसर्च आउटकम की दृश्यता और प्रभाव को और अधिक बढ़ाएगा। उद्घाटन समारोह में सबको सम्बोधित करते हुए प्रो. (डॉ.) सुशील मित्तल, वाईस चांसलर, इकेजीपीटीयू ने सीजीसी लांडरां की इस तरह की कांफ्रेंस आयोजित करने पर प्रशंसा की और टेक्निकल नॉलेज को इंडस्ट्री की आवश्यकताओं के साथ अलाइन करने के महत्व पर जोर दिया। उन्होंने छात्रों को नए नए इनोवेशन करने और सोसाइटी में सामने आ रही समस्याओं के समाधान खोजने के लिए प्रेरित किया। उन्होंने इकेजीपीटीयू की कमिटमेंट को दोहराते हुए कहा कि हम सभी टेक्निकल एजुकेशन कॉलेजेस को उनके करिकुलम के साथ साथ इंडस्ट्री ट्रेनिंग के प्रयासों को पूरा समर्थन देते है।

India With AI in 2050

India with AI in 2050: A Glimpse into the Future
India, a land of diverse cultures and rich heritage, is on the brink of a technological revolution. By 2050, Artificial Intelligence (AI) is poised to transform the country in ways that are both profound and far-reaching. The integration of AI across various sectors promises to enhance productivity, improve quality of life, and address longstanding socio-economic challenges.

Transforming Healthcare
By 2050, AI-driven innovations are expected to revolutionize healthcare in India. Advanced AI algorithms will facilitate early diagnosis and personalized treatment plans, significantly improving patient outcomes. Wearable devices and AI-powered health monitoring systems will enable continuous health tracking, allowing for timely interventions.Predictive analytics will play a crucial role in managing epidemics and pandemics, enhancing the country's ability to respond swiftly and effectively.

Revolutionizing Education
The education sector in India will undergo a dramatic transformation with the advent of AI. Personalized learning experiences tailored to individual students' needs and abilities will become the norm.. AI-powered systems will optimize crop yields by analyzing soil health, weather patterns, and pest infestations. Precision farming techniques, driven by AI, will minimize resource wastage and maximize productivity. Drones and robotic systems will automate labor-intensive tasks, reducing the burden on farmers and increasing efficiency. By 2050, AI will enable sustainable farming practices, ensuring food security for the growing population.

Boosting the Economy
AI will be a key driver of economic growth in India by 2050. The integration of AI in industries such as manufacturing, retail, and finance will streamline operations, reduce costs, and enhance productivity. The rise of AI-powered startups will create new job opportunities and drive economic development. Additionally, AI will facilitate smart city initiatives, improving urban infrastructure, traffic management, and public services.

Addressing Societal Challenges
AI will play a pivotal role in addressing some of India's most pressing societal challenges. AI-driven solutions will enhance disaster management and response, reducing the impact of natural calamities.Furthermore, AI will aid in the efficient delivery of government services, ensuring transparency and accountability.

Conclusion
By 2050, AI will be deeply embedded in the fabric of Indian society, driving progress and innovation across all sectors. The transformative power of AI will not only propel India towards economic prosperity but also address key societal challenges, paving the way for a brighter and more inclusive future. As India embraces this AI-driven future, is imperative to ensure ethical considerations and equitable access to technology, ensuring that benefits of AI are shared by all.

Meenkshi (2236879)
B.Tech. CSE

Generative AI: From Sci-Fi Dream to Reality - Unleashing a World of Creative Potential

Generative AI is no longer the stuff of science fiction movies. It's here, it's working wonders, and it's poised to revolutionize the way we create content, design products, and approach problem-solving across industries.

Unveiling the Magic: What is Generative AI and Why Should You Care?

Imagine a world where a machine can write a catchy jingle, dream up a ground breaking invention, or paint a masterpiece – all based on your instructions. That's the power of generative AI, a form of artificial intelligence focused on creating entirely new content from text and images to code and even music. Here's the exciting part: generative AI is rapidly evolving. Let's delve into the latest breakthroughs that are pushing the boundaries of what's possible in 2024.

2024 and Beyond: A Glimpse into the Cutting Edge of Generative AI

● The Wordsmith Within: How AI is mastering the Art of Language Chatterbots on Steroids: The Rise of Large Language Models (LLMs) Think of LLMs like me as super-powered catboats that can not only have conversations but also craft different writing styles – from composing a press release to penning a sonnet. ○ From Blank Page to Bestseller: AI-Powered Writing Assistants Take Centre Stage Say goodbye to writer's block! AI assistants are here to help generate ideas, overcome creative roadblocks, and even write entire drafts, making content creation faster and more efficient.

● Beyond Text: When Images and Videos Leap off the Screen Dall-E 2 and Beyond: The Age of Photorealistic AI-Generated Art Imagine describing your dream vacation destination and having a picture-perfect image appear before your eyes. Thanks to tools like Dall-E2, creating hyper-realistic images based on text descriptions is becoming a reality. Lights, Camera, Action! The Rise of AI-Powered Video Editing Thorold of video editing is also embracing AI. New software can streamline tasks like colour correction and basic editing, freeing up editors to focus on the creative aspects.

● Code and Design: When Creativity Meets Automation ○ From Scratch to Prototype: How AI is assisting with Product Design Stuck on a design concept? AI can help generate initial ideas and variations based on your specifications, accelerating the design process. Coding Companions: AI Tools that Write Code alongside You Don’t worry, coders, AI isn't here to replace you. Instead, generative models can create basic code snippets or suggest solutions, making development faster and more efficient. These are just a few examples of how generative AI is making waves in 2024. But the future holds even more exciting possibilities!

Dapinty Saini
Assistant Professor
Dept. CSE
CEC CGC

The Impact of 5G on IoT Development

Introduction:

The fifth generation of wireless technology, commonly known as 5G, is set to revolutionize the Internet of Things (IoT). This new technology promises significant improvements in speed, latency, and capacity, which will profoundly affect the development and deployment of IoT devices. This article explores how 5G will impact IoT development, highlighting the key technical advancements and their implications for various industries.

What is 5G?

5G is the latest iteration of mobile network technology designed to enhance the capabilities of current 4G LTE networks. It aims to provide:

Higher Data Rates: Speeds up to 10 Gbps, which is 10 to 100 times faster than 4G.

Ultra-Low Latency: Latency as low as 1 millisecond, significantly reducing the delay in communication.

Increased Connectivity: The ability to support up to 1 million devices per square kilo-meter.

Enhanced Reliability and Network Slicing: Offering dedicated resources for different types of applications, ensuring high reliability.

Key Technical Advancements of 5G:

1. Milli-meter Waves (mm-Wave): These higher frequency bands (24 GHz to 100 GHz) provide more bandwidth and faster speeds but have shorter ranges and are more susceptible to obstacles.

2. Small Cell Networks: These are low-powered cellular radio access nodes that can be installed densely to improve coverage and capacity, especially in urban areas.

3. Massive MIMO (Multiple Input Multiple Output): This technology uses multiple antennas to send and receive more data simultaneously, improving speed and efficiency.

4. Beamforming: Directs signals to specific users rather than broadcasting in all directions, enhancing signal strength and reducing interference.

5. Network Slicing: Allows the creation of multiple virtual networks on a single physical 5G network, tailored to different applications and services.

Impact of 5G on IoT Development:

1. Enhanced Device Connectivity

The increased capacity of 5G networks will enable the connection of a vast number of IoT devices. This is particularly important for smart cities, industrial IoT, and large-scale sensor networks, where the number of connected devices can be immense.

2. Real-Time Data Processing

Ultra-low latency is critical for applications that require real-time data processing, such as autonomous vehicles, remote surgery, and augmented reality. 5G's low latency ensures that data can be transmitted and processed almost instantaneously, enabling these technologies to function effectively.

3. Improved Energy Efficiency

5G technology includes improvements in energy efficiency for IoT devices, which is vital for battery-powered devices such as sensors and wearables. Longer battery life will lead to reduced maintenance costs and increased deployment of IoT devices in remote or hard-to-reach areas.

Conclusion:

The advent of 5G technology is set to significantly accelerate the development and deployment of IoT devices.. However, addressing the associated challenges will be crucial to fully realizing the potential of 5G in the IoT landscape. As 5G networks continue to roll out globally, the future of IoT looks more connected and intelligent than ever before.

Mohit Thakur(2236889)

B.Tech. CSE