Thought of the Month

Department of Computer Science and Engineering
CEC, CGC Landran

Vision of the Chandigarh Engineering College

To become a leading institute of the country for providing quality technical education in a research based environment for developing competent professionals and successful entrepreneurs.

Mission of the Chandigarh Engineering College

1. To provide state of the art infrastructure and engage proficient faculty for enhancing the teaching learning process to deliver quality education.
2. To give a conducive environment for utilizing the research abilities to attain new learning for solving industrial problems and societal issues.
3. To collaborate with prominent industries for establishing advanced labs and using their expertise to give contemporary industry exposure to the students and faculty.
4. To cater opportunities for global exposure through association with foreign universities.
5.To extend choice based career options for students in campus placements, entrepreneurship and higher studies through career development program.

Program Educational Objectives (PEOs)

Computer Science and Engineering graduates will be able to:

PEO1: Analyse and solve Computer Science and Engineering problems through acquired knowledge in mathematical and engineering concepts.

Editorial Board

DID YOU KNOW

PEO2: Excel in the field of computing technologies with usage of modern tools and multidisciplinary approach, to succeed in diversified domains of industry and academia.

PEO3: Develop professional and ethical attitude, communication skills, and an ability to relate computer engineering issues with societal needs.

PEO4: Adapt to new technologies and constantly upgrade skills with an attitude towards lifelong learning.

PEO5: Exhibit technical and research abilities along with a zeal to lead and work in team environment.

Chandigarh Engineering College –CGC Landran, Mohali (Punjab)

NEWSLETTER

CEC CSE BROADCAST

Volume – 8

Issue –

October 2024 to December 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.

Advancements in AI Technology

Artificial Intelligence (AI) has rapidly evolved, revolutionizing industries and reshaping modern life. Key advancements include breakthroughs in **Machine Learning (ML)**, particularly deep learning, which has transformed natural language processing, computer vision, and speech recognition. Generative AI tools, like ChatGPT and DALL·E, are empowering creativity by enabling machines to produce text and images. In autonomous systems, AI is driving innovations in self-driving cars, drones, and robotics, while healthcare applications like diagnostics, drug discovery, and wearable technologies are enhancing medical outcomes. However, challenges such as ethical concerns around bias, privacy, and the misuse of AI-generated content require robust governance. The future of AI, including its integration with quantum computing and efforts toward general AI, promises even greater possibilities, from solving global challenges to fostering sustainable growth. To maximize benefits and minimize risks, responsible development and deployment of AI are essential. AI's transformative power is set to improve lives, but it demands careful stewardship to ensure positive societal impact.

CSE Department of CEC CGC Organized Technical and Non-Technical event ZEST-O-FIESTA 2K24

The CSE Department organized a technical and non-technical event, "ZEST-O-FIESTA 2K24," on October 1, 2024. Zest-O-Fiesta provided students with a vibrant platform to sharpen and showcase their technical aptitude, collaborative abilities, and creative thinking. By categorizing the event into two distinct sections—technical and non-technical—it offered a wide range of opportunities for participants to demonstrate their skills. The event fostered team synergy, encouraged students to step out of their comfort zones, and promoted healthy competition, inspiring innovative ideas. It was an enriching experience that empowered students to channel their potential in a dynamic and supportive environment. The technical events included Project Display, Ideathon, Bug-Debug, Code Relay, Trivia (Quiz), Graphic Designing, and Crack the Code. The non-technical events comprised Painting Competition, Photo Hunt, Reel Ki Feel, Chess, Nail Art, Stumble Guys, and BGMI. The event aimed to recognize and value the active participation of all individuals involved. It provided exposure by sharing ongoing efforts and rewarding impactful contributions on various social platforms. Additionally, it enhanced students' technical and non-technical skills, while promoting an understanding of the importance of extracurricular activities in daily life.

Poster of the Event

Students presenting their Ideas

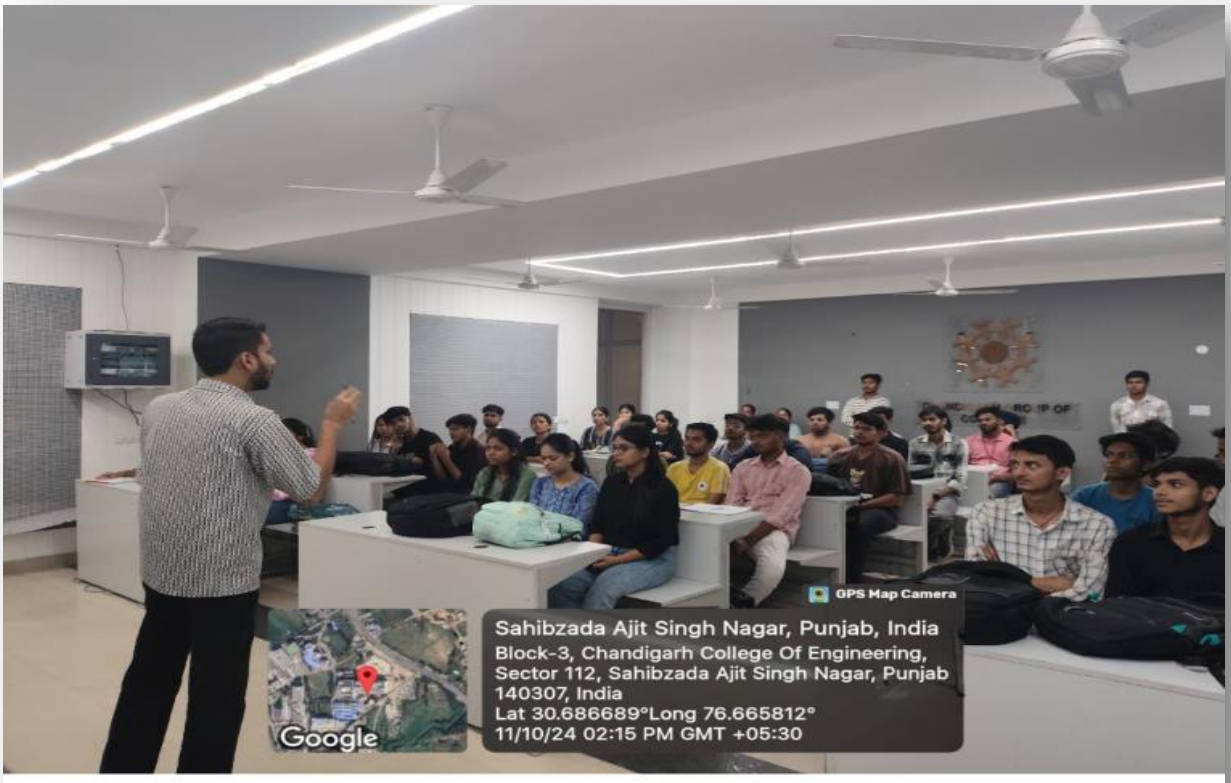
Group Photograph of faculty and student coordinators

Group Photograph of the winners

CSE Department of CEC CGC Alumni Talk on "Essential Technological Skills for Students"

The Department of Computer Science and Engineering organized an Alumni Talk titled "Essential Technological Skills for Students" on October 11, 2024, for B.Tech 3rd semester students. The session, delivered by Mohammad Amaan, Associate R&D Engineer at NOKIA, lasted for two hours. During the session, Mohammad Amaan shared his expertise on several key topics: Placement Preparation: Effective strategies and tips to secure jobs and internships. Data Structures & Algorithms (DSA): The importance of mastering DSA for coding and problem-solving. Project Development: Guidance on building impactful projects that stand out to employers. About NOKIA: Insights into his role and the technical projects at Nokia. Technical Doubts: Addressing and resolving student; technical queries. Time Management: Tips for managing time efficiently in a fast-paced work environment. Problem-Solving Approach: Best practices for approaching technical challenges methodically. The event aimed to equip students with critical technological skills, emphasizing placement preparation, mastering DSA, effective project development, resolving technical doubts, improving time management, and understanding the role of competitive programming. These insights were designed to better prepare students successful careers in the tech industry.

Appreciation to Alumni



Alumni talk on Essential Technological Skills for Students

Clearing doubts of Students

FACULTY ACHIEVEMENT

Dr. Gagandeep Jindal, Professor in the CSE Department at CEC, received the ISTE Best Teacher Award 2024 for his commitment to advancing educational standards and inspiring future leaders through his dedication to teaching. The award ceremony was held on October 25, 2024, at BGIET Sangrur. The award was presented by *Honrable* Vice Chancellor of IKGPTU, Dr. Susheel Mittal, along with ISTE President Dr. Pratap Singh Kakasaheb Desai, Hon'ble Prof. Dr. Boota Singh Sidhu, Former Vice Chancellor of MRSPTU Bathinda, and Prof. Dr. R. P. Singh Sukerchakia, ISTE Section Chairman for Punjab, Chandigarh, Himachal Pradesh, and Jammu and Kashmir.

Dr. Shelja Jhamb, Got a certificate for the recognition as NPTEL discipline star

CSE faculty of CEC-CGC appeared for NPTEL exam and 200 faculty members cleared this Exam

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

SUKHPREET KAUR

for successfully completing the course

Theory of Computation

with a consolidated score of 70 %

Online Assignments	20.5/25	Proctored Exam	49.75/75

Total number of candidates certified in this course: 2121

Prof. B. V. Ratish Kumar
Chairman, Centre for Continuing Education
IIT Kanpur

Jul-Sep 2024
(8 week course)

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24CS71S132900328 To verify the certificate No. of credits recommended: 2 or 3

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

GEETANJALI

for successfully completing the course

Data Base Management System

with a consolidated score of 61 %

Online Assignments	19.79/25	Proctored Exam	41.25/75

Total number of candidates certified in this course: 7134

Jul-Sep 2024
(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL24CS75S232900559 To verify the certificate No. of credits recommended: 2 or 3

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

MANDEEP KAUR

for successfully completing the course

Data Base Management System

with a consolidated score of **51** %

Online Assignments	18.13/25	Proctored Exam	33/75

Total number of candidates certified in this course: **7134**

Jul-Sep 2024

(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam

Roll No: NPTEL24CS75S232900591 To verify the certificate No. of credits recommended: 2 or 3

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

DAPINTY SAINI

for successfully completing the course

Cloud Computing

with a consolidated score of **53** %

Online Assignments	23.35/25	Proctored Exam	30/75

Total number of candidates certified in this course: **23872**

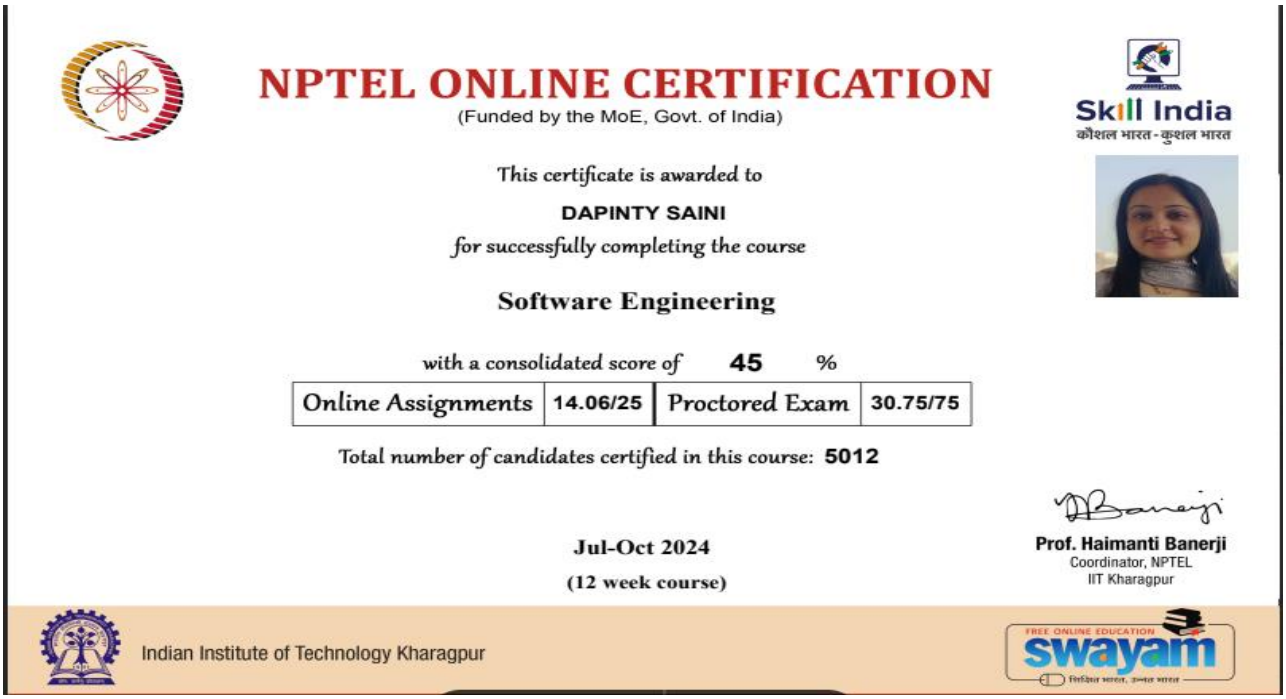
Jan-Apr 2024

(12 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam



NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

DAPINTY SAINI

for successfully completing the course

Software Engineering

with a consolidated score of 45 %

Online Assignments	14.06/25	Proctored Exam	30.75/75

Total number of candidates certified in this course: 5012

Jul-Oct 2024

(12 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Student Achievement: CSE students of CEC-CGC appeared for NPTEL exam and 160 students cleared this Exam.

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

SHRUTI THAKUR

for successfully completing the course

Data Base Management System

with a consolidated score of 73 %

Online Assignments	17.92/25	Proctored Exam	54.75/75

Total number of candidates certified in this course: 7134

Jul-Sep 2024

(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL24CS75S232900525 To verify the certificate No. of credits recommended: 2 or 3

Indian Institute of Technology Kharagpur

Roll No: NPTEL24CS75S232900525 To verify the certificate No. of credits recommended: 2 or 3

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत-कुशल भारत

This certificate is awarded to

NAMAN ARORA

for successfully completing the course

Data Base Management System

with a consolidated score of **75** %

Online Assignments	20.63/25	Proctored Exam	54/75

Total number of candidates certified in this course: **7134**

TOPPER 10% 5%

Jul-Sep 2024

(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

Roll No: NPTEL24CS75S232900605 To verify the certificate No. of credits recommended: 2 or 3

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत-कुशल भारत

This certificate is awarded to

RANJAN SINGLA

for successfully completing the course

Data Base Management System

with a consolidated score of **46** %

Online Assignments	16.46/25	Proctored Exam	30/75

Total number of candidates certified in this course: **7134**

Jul-Sep 2024

(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

CHIRAG KAPOOR

for successfully completing the course

Data Base Management System

with a consolidated score of **49** %

Online Assignments	16.25/25	Proctored Exam	33/75

Total number of candidates certified in this course: **7134**

Jul-Sep 2024

(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

ROHIT KUMAR

for successfully completing the course

Data Base Management System

with a consolidated score of **62** %

Online Assignments	20.21/25	Proctored Exam	42/75

Total number of candidates certified in this course: **7134**

Jul-Sep 2024

(8 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION
swayam

Students Achievement:

Students of the CSE Department, CEC_CGC, Rupesh and Saksham, won first prize in the Three-Day Geo Innovation Challenge 2024, organized by the Department of Science & Technology (DST), New Delhi (Government of India). The event was hosted by Punjab Engineering College (PEC), Deemed to be University, Chandigarh, and included a cash prize of ₹12,000. The purpose of the Geo Innovation Challenge is to recognize, encourage, and nurture innovation among the youth to contribute to the national socio-economic development process. The main theme of this year's challenge at Punjab Engineering College, Chandigarh, was to emphasize the use of innovative and emerging methodologies to address increasingly complex public health challenges.


PEC
IEEE
PEC
IEEE
TWELVE
THOUSAND ONLY
₹12,000

Article by Faculty:

Cloud Computing for Small Business

The Benefits of Cloud Computing for Small Businesses
In today fast-paced digital landscape, small businesses face unique challenges in staying competitive, managing costs, and scaling efficiently. Cloud computing offers a transformative solution, enabling businesses to leverage advanced technology without the overhead of traditional IT infrastructure. Here, we explore how cloud computing benefits small businesses and why it has become an essential tool for growth and innovation.

1. Cost Efficiency
One of the most significant advantages of cloud computing is its cost efficiency. Small businesses can access cutting-edge software, storage, and computing power on a pay-as-you-go basis, eliminating the need for substantial upfront investments in hardware and software. This model reduces capital expenditures and allows businesses to allocate resources more effectively.

2. Scalability
As businesses grow, their IT needs often evolve. Cloud computing provides unparalleled scalability, allowing small businesses to adjust their resources based on demand. Whether expanding storage capacity, increasing processing power, or accommodating more users, the cloud offers the flexibility to scale up or down seamlessly.

3. Enhanced Collaboration
Cloud computing facilitates real-time collaboration among team members, regardless of location. Tools like Google Workspace, Microsoft 365, and project management platforms allow employees to work on documents simultaneously, share files instantly, and communicate effectively. This fosters a more dynamic and efficient work environment.

4. Data Security and Backup
Many small businesses worry about data security, and cloud providers often offer robust security measures, including encryption, firewalls, and regular security audits. Additionally, cloud solutions typically include automatic backups and disaster recovery options, ensuring critical data is safe and accessible in emergencies.

5. Remote Accessibility
In an increasingly remote work environment, cloud computing enables employees to access essential files, applications, and tools from anywhere with an internet connection. This flexibility not only improves productivity but also helps businesses attract and retain talent by offering remote work options.

6. Competitive Edge
Cloud computing levels the playing field for small businesses by providing access to tools and technologies that were once only available to larger enterprises. Advanced analytics, artificial

intelligence, and machine learning services offered by cloud providers empower small businesses to make data-driven decisions and stay ahead of industry trends.

7. Reduced Environmental Impact
By utilizing shared resources hosted in data centres, small businesses can reduce their carbon footprint. Cloud providers optimize their facilities for energy efficiency, contributing to a more sustainable approach to IT operations.

Conclusion
Cloud computing is no longer a luxury but a necessity for small businesses looking to thrive in the modern marketplace. By reducing costs, enhancing scalability, and providing access to advanced technologies, the cloud empowers businesses to focus on their core objectives while staying agile and innovative. Adopting cloud solutions can be a game-changer, enabling small businesses to compete effectively and achieve long-term success.

Name: Ms. Dapinty Saini
Assistant Professor

Article by Students:

Is Today's Modern Al/Generative Al the Real Artificial Intelligence?

Artificial Intelligence (AI) has become an integral part of modern life, with generative AI tools such as ChatGPT, DALL-E, and others capturing public imagination. But are these tools representative of "real" artificial intelligence as envisioned by scientists and philosophers? To answer this question, we need to unpack the essence of AI and examine how current systems align with those ideals.

Understanding Artificial Intelligence

Artificial Intelligence broadly refers to the simulation of human intelligence in machines. It encompasses a wide range of capabilities, from narrow AI systems that perform specific tasks (e.g., facial recognition) to aspirational artificial general intelligence (AGI), which would mimic human cognitive abilities across diverse domains.

The Turing Test, introduced by Alan Turing in 1950, remains a cornerstone for evaluating AI. A system capable of convincingly imitating human behavior to the extent that a human cannot distinguish it from another person might be considered intelligent. However, many researchers argue that intelligence extends beyond mimicking human behavior to include understanding, reasoning, creativity, and the ability to act autonomously.

The Rise of Generative AI

Generative AI systems, such as those built on large language models (LLMs), excel at producing human-like text, images, and even code. These systems rely on vast datasets and advanced algorithms to identify patterns and generate content based on user inputs. Key advancements in deep learning, neural networks, and computational power have propelled generative AI to unprecedented capabilities.

Despite their impressive outputs, generative AI models are fundamentally predictive engines. They analyze probabilities to determine what response, image, or piece of text is most appropriate. While this results in highly coherent and contextually relevant outputs, these systems lack understanding, self-awareness, and reasoning. For example, a language model can discuss quantum physics but does not comprehend the science; it merely predicts text sequences that align with its training data.

Differentiating Modern AI from "Real" AI

1. Lack of General Intelligence: Current AI systems are task-specific or domain-limited. They lack the adaptability and general reasoning skills that characterize human intelligence or AGI. For instance, while a chess-playing AI can defeat grandmasters, it cannot apply its "knowledge" to unrelated tasks like cooking or painting without additional programming or training.

2. Absence of Consciousness: Generative AI lacks self-awareness and intentionality. These systems do not "know" they exist, nor do they possess desires, goals, or emotions. Consciousness, an essential aspect of what many consider "real" intelligence, remains elusive in current AI.

3. Dependency on Data: Modern AI systems depend on extensive datasets for training. They cannot operate effectively outside the boundaries of their training data, leading to biases and inaccuracies. Real intelligence, by contrast, thrives in situations where improvisation and innovation are required.

4. Ethical and Contextual Challenges: AI systems struggle with ethical decision-making and nuanced understanding. For example, generative AI might inadvertently generate harmful or misleading content because it lacks the moral compass or contextual awareness to evaluate the consequences of its outputs.

The Path Forward: Closing the Gap

To approach "real" AI, research must address several challenges:

1. **Achieving Generalization:** Developing systems capable of cross-domain learning and reasoning is critical for AGI.
2. **Integrating Contextual Understanding:** AI needs to move beyond pattern recognition to grasp context and intent.
3. **Ensuring Ethical Decision-Making:** Embedding robust ethical frameworks into AI systems will help mitigate potential risks and biases.
4. **Pursuing Consciousness Studies:** While controversial, exploring the nature of consciousness and its integration into AI could redefine the field.

Conclusion

Today's generative AI represents a significant milestone in computational technology but falls short of "real" artificial intelligence. It excels in simulating certain aspects of human creativity and reasoning but lacks the depth, generality, and autonomy of true intelligence. As research progresses, bridging this gap will require a paradigm shift in how we approach AI development, emphasizing adaptability, understanding, and ethical alignment. Until then, modern AI remains a remarkable tool—but not the realization of the AI dream.

Written by: -
Bhavey 2236744
BTECH CSE (CEC)