



Fusion Society - IT Department

SYNERGY

IDEAS. IMPACT.

INNOVATION.



Volume 7
2024-25

Vision

To become a centre of excellence for quality education and globally innovation to fulfil the need of the Information Technology industry and society.

MISSION

- To provide excellent learning environment for the students to be technically efficient in solving complex problems.
- To motivate the students continuously in developing research based project and producing innovative solution in relevant to their field.
- To impart social, moral and ethical values along with their leadership abilities leading to a global professional.
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Program Educational Objectives(PEOs)

- The Program educational objectives (PEOs) of the IT undergraduate program are to:
- Apply the mathematical, scientific and engineering fundamentals to provide suitable Information Technology solutions for real world engineering problems.
- Produce software professionals and entrepreneur with a thirst for higher studies.
- Exhibit professional and ethical attitude, effective communication skills and teamwork with a multidisciplinary outlook.

FUSION SECRETARIAT

PRESIDENT



PROF. (DR.) SANJEEV KR. SINGH
(HOD)

JOINT PRESIDENT



DR. VEENA MITTAL
(DY. HOD)

VICE PRESIDENT



MS. RAUNAK SULEKH

ASSO. VICE PRESIDENT



AKSHAY TIWARI

General Secretary



DHRUV JHA

General Secretary



MARISHA SHUKLA

SECRETARIES



SHREYA SONI



NAMAN RUSIA



SHUBHAM SINGH

SECRETARIES



KRISHNA



**AYUSH
PRAJAPATI**



ADITYA TIWARI

JOINT SECRETARIES

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ABHINAV SINGH
HIMANSHU PATEL
PRASHANT JOSHI
MEESAM RAZA
UTKARSH KHARE
PRIYANSHU GUPTA**

**JATIN
RISHIKA RAJ
SUHANI BADOLA
ABHISHEK GAURAV
ARYAN SHARMA
YASHASHAVI
VAIBHAV
SHRESHTHA SRIVASTAVA**

DIRECTOR'S DESK

Dear Students,

It gives me immense pleasure to extend my heartfelt appreciation to the Fusion Society of the IT Department for its continuous efforts in fostering creativity, collaboration, and technical excellence among our students. The society has become a vibrant platform where ideas converge, innovation thrives, and leadership qualities are nurtured. At Galgotias College of Engineering and Technology, we believe in empowering our students not only with academic knowledge but also with opportunities to explore, express, and excel beyond the classroom. The initiatives taken by Fusion Society—be it technical workshops, editorial contributions, or cultural activities—reflect the spirit of teamwork and the pursuit of excellence that our institution stands for

I encourage all students to actively participate in the society's endeavors, contribute their talents, and make the most of this platform. Together, let us continue to uphold the values of innovation, integrity, and inclusivity that define Galgotias College. Wishing Fusion Society and the IT Department continued success in all future initiatives.



Prof. (Dr.) Vikram Bali
DIRECTOR, GCET

CHIEF EDITOR'S DESK

I am delighted to share my appreciation for the Fusion Society of the IT Department, which has consistently served as a hub of innovation, creativity, and collaboration. The society reflects the enthusiasm and talent of our students, providing a platform to explore emerging technologies, express ideas, and develop leadership skills.

The initiatives undertaken by Fusion Society—whether through technical workshops, editorial contributions, or cultural engagements—demonstrate the commitment of our students to holistic growth. Such activities not only enhance technical knowledge but also nurture communication, teamwork, and problem-solving abilities, which are vital in today's dynamic IT landscape.

As Head of Department, I encourage every student to actively participate in the society's endeavors and contribute to its vision. Together, let us continue to build a vibrant community that upholds the values of innovation, integrity, and excellence. Wishing the Fusion Society endless growth, innovation, and victories in all its upcoming endeavors..



Prof. (Dr.) Sanjeev Kr. Singh
HOD(IT), GCET

DEPUTY PRESIDENT'S DESK

With great pride, I extend my warm regards to the members of the Fusion Society of the IT Department. The society has emerged as a dynamic platform where students showcase their creativity, technical skills, and leadership qualities. Its initiatives—ranging from editorial contributions to technical workshops—reflect the enthusiasm and commitment of our department's young minds. I would like to express my sincere gratitude to our Head of Department for the constant guidance and encouragement that has enabled Fusion Society to flourish. The support and vision of the HOD have been instrumental in shaping the society's activities and motivating students to achieve excellence.

As Deputy HOD, I encourage all students to continue participating actively in the society's endeavors. Let us work together to uphold the values of innovation, collaboration, and integrity that define our department and institution. Wishing Fusion Society continued triumphs, stronger collaborations, and brighter achievements in the future.



Prof. (Dr.) Veena Mittal
GCET

VICE PRESIDENT'S DESK

It's always exciting to see how the Fusion Society keeps raising the bar with fresh ideas and energetic initiatives.

What makes this society special is not just the technical brilliance of our IT students, but also the creativity and teamwork that shine through every activity.

As Vice President, I feel proud to witness the way Fusion Society has become a space where students learn, share, and grow together.

Whether it's through editorial contributions, workshops, or fun cultural events, the society reflects the true spirit of innovation and collaboration. A big thank you to our HOD and Deputy HOD for their constant support and encouragement—it's their guidance that helps us keep moving forward. And to all the students: keep bringing your enthusiasm, because Fusion Society is at its best when you are at your best.



Ms. Raunak Sulekh

GCET

ASSOCIATE VICE PRESIDENT'S DESK

The journey of the Fusion Society has always been about energy, innovation, and teamwork—and that's exactly what makes it so special. Every event, every editorial, and every initiative is a spark that lights up our department with creativity and passion. As Associate Vice President, I truly believe that Fusion Society is more than just a platform—it's a movement where students push boundaries, learn new skills, and celebrate each other's talents. The enthusiasm of our members shows that when we come together, nothing is impossible. Let's keep this momentum alive! Bring your ideas, your energy, and your spirit of collaboration to every activity. Together, we can make Fusion Society not only the pride of the IT Department but also a symbol of what young innovators can achieve. Keep shining, keep striving, and let's make every step count toward excellence.



Mr. Akshay Tiwari
GCET

GENERAL SECRETARY'S DESK

Being part of the Fusion Society has been one of the most rewarding experiences of my journey in the IT Department. As students, we often look for spaces where we can learn beyond the classroom, share our ideas, and grow together—and Fusion Society has become exactly that platform. What makes our society special is the energy and creativity of its members. Every workshop, editorial, and event is powered by the passion of students who want to make a difference. It's inspiring to see how each initiative brings us closer as a community and helps us discover new strengths.

As General Secretary, my vision is simple: to keep the spirit of collaboration alive and to encourage every student to step forward, contribute, and shine. Together, we can make Fusion Society not just a departmental society, but a family where innovation and friendship go hand in hand.



Dhruv Jha
STUDENT (IT), GCET

GENERAL SECRETARY'S DESK

Serving as the General Secretary of Fusion Society has been a journey filled with learning, leadership, and inspiration. As a student of the IT Department, I feel proud to represent a society that celebrates both technical excellence and creative expression. Fusion Society is not just about events or editorials—it's about building confidence, encouraging voices, and creating opportunities for every student to shine. What makes it truly special is the spirit of collaboration and the belief that together, we can achieve more than we ever imagined. As a General Secretary, I hope my role inspires others to step forward, take initiative, and embrace the power of participation. Every idea matters, every effort counts, and every student has the potential to make a difference. May Fusion Society's spirit of innovation and teamwork lead to greater heights of success.



Marisha Shukla
STUDENT (IT), GCET

FACULTY ARTICLE

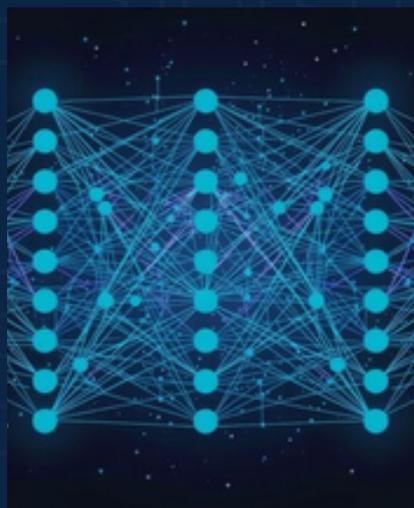
Dr. Javed Miya (Professor IT department)

Machine Learning In Computer Vision And Image Processing

In the dynamic fields of computer vision and image processing, machine learning has emerged as a transformative force, revolutionizing how we analyze, interpret, and manipulate visual data. This article explores the profound impact of machine learning algorithms across a spectrum of applications, discusses current challenges, and examines promising future directions in these rapidly evolving disciplines.

The Intersection of Machine Learning and Computer Vision

Machine learning, a subset of artificial intelligence, empowers systems to learn from data and make decisions without explicit programming. In computer vision, this capability allows machines to perceive, analyze, and understand visual information, mirroring and sometimes surpassing human visual capabilities. From recognizing objects in images to understanding complex scenes and extracting actionable insights, machine learning algorithms have opened new frontiers in automation, safety, healthcare, and beyond.



Applications of Machine Learning in Computer Vision and Image Processing

Object Detection and Recognition Machine learning algorithms, particularly convolutional neural networks (CNNs) and their advanced variants, have transformed object detection and recognition tasks. These models excel in identifying and categorizing objects within images with high accuracy and speed, essential for applications such as autonomous vehicles, surveillance systems, and quality control in manufacturing.

Image Segmentation and Semantic Understanding Image segmentation techniques, driven by machine learning advancements like semantic segmentation and instance segmentation, enable computers to partition images into meaningful regions. This capability is crucial in medical imaging for precise diagnosis and treatment planning, environmental monitoring for analyzing land cover and changes, and robotics for navigation and interaction in complex environments.

Image Super-Resolution and Restoration Machine learning-based approaches, including Generative Adversarial Networks (GANs) and deep learning architectures, enhance image resolution and restore degraded visual data. These techniques are pivotal in medical imaging for improving diagnostic accuracy, in satellite imaging for detailed terrain analysis, and in cultural heritage preservation for restoring historical artifacts with meticulous detail.

Visual Recognition and Understanding Beyond object detection, machine learning enables computers to understand visual scenes, including action recognition, scene understanding, and visual question answering. These capabilities have transformative potential in applications ranging from video surveillance and content moderation to human-computer interaction and virtual/augmented reality.

Automated Vehicle Automated vehicle applications leverage machine learning in computer vision and image processing to enhance navigation, object detection, and decision-making. Machine learning models, particularly convolutional neural networks (CNNs), are trained on large datasets of labeled images to recognize various objects, such as pedestrians, vehicles, and traffic signs. These models process real-time camera inputs, identifying and classifying objects, estimating their distances, and predicting their movements. Advanced techniques like semantic segmentation and optical flow further improve scene understanding and motion tracking, enabling safe and efficient autonomous driving by allowing the vehicle to react appropriately to dynamic environments.

Challenges and Ethical Considerations

Despite its transformative potential, machine learning in computer vision faces significant challenges. These include biases in training datasets, ensuring the interpretability and fairness of AI models, and addressing ethical concerns surrounding privacy, security, and algorithmic accountability. Striking a balance between innovation and responsible deployment is crucial for realizing the full societal benefits of machine learning technologies.





Conclusion

Machine learning continues to redefine the landscape of computer vision and image processing, offering unprecedented opportunities to extract insights, enhance decision-making processes, and drive innovation across diverse industries. As practitioners, and policymakers navigate the complexities of deploying AI addressing challenges and ethical considerations will be paramount in shaping a future where intelligent visual systems contribute positively to society.

The future of machine learning in computer vision and image processing is driven by ongoing advancements in algorithms, computing power, and data availability. Future directions include integrating machine learning with emerging technologies such as edge computing, quantum computing, and neuromorphic computing to enable real-time and energy-efficient visual processing solutions. Moreover, the convergence of machine learning with interdisciplinary fields like bioinformatics, geospatial analysis, and industrial automation will open new avenues for innovation and application



Events

organized by

Fusion Society

IT Department

in 2024-25



TEACHER'S DAY EVENT:

The Fusion Society of the IT Department organized a heartwarming Teacher's Day Event to celebrate and honor the dedication, hard work, and contribution of the faculty members. The event, which was held on 5th of September 2024, brought together students and faculty to honor and appreciate the hard work and dedication of teachers. The event was filled with emotion, joy, and admiration, reminding everyone of the significant role teachers play in shaping not only academic careers but also personal growth and success. It was a day to celebrate the selfless contributions of educators and to create lasting memories of gratitude and respect.



CREATIVE WORKSHOP:

The Fusion Society of the IT Department recently hosted a highly engaging and enriching Creative Workshop, designed to inspire and cultivate the creative potential of students while bridging the gap between technology and art. The workshop, held on 19th of September 2024, attracted participants from various academic years, each eager to explore how creativity can enhance their technical skills and vice versa. The event aimed to provide a hands-on learning experience, encouraging students to think outside the box and experiment with creative tools and techniques. The event was carefully designed to offer a comprehensive learning experience, one that promised not only to ignite participants' creativity but also to help them develop skills applicable across various fields



ORIENTATION:

The Fusion Society of the IT Department organized an engaging and informative Orientation Event for the 2nd-year students on 23rd of September 2024 in D-block Auditorium. The orientation event successfully introduced the students to the wide array of opportunities the society offers. By participating in Fusion Society's activities, students can expect to enrich their academic experience, develop crucial skills, and build valuable connections that will support both their professional and personal growth.



TECHNICAL WORKSHOP:

The Technical Workshop, held on 18th September in C-207, provided an immersive experience into the world of advanced technology and problem-solving. Going beyond conventional learning, this workshop aimed to equip participants with a deep understanding of cutting-edge tools, techniques, and methodologies within Gen AI. Led by members of our team, the workshop sought to empower attendees with both theoretical knowledge and practical experience through a blend of in-depth discussions and hands-on exercises. By fostering collaboration and networking among like-minded peers, the workshop aimed to provide participants with a deeper understanding of the latest technological advancements and equip them with the tools necessary to solve complex challenges in both academic and professional settings



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WORKSHOP:

On 21st of September 2021, FUSION SOCIETY conducted a workshop on the This workshop was designed to cater to both beginners and advanced participants, offering a comprehensive learning experience that combined theory and practice. The workshop was an immense success, with participants gaining practical skills and insights that are directly applicable to their studies and future careers.



SEMINAR ON BEST CAREER OPTION AND VALUE ON APTITUDE :

The "Seminar on Best Career Options and the Value of Aptitude", organized by the Fusion Society of the Department of Information Technology on 23rd of October 2024. The speaker was Ms. SWETA SAHU of T.I.M.E Institute. It aimed to guide students in making informed career choices while emphasizing the critical role of aptitude in shaping career success. The seminar provided students with valuable insights into the diverse career paths available in the IT industry and beyond, and how aptitude plays a key role in professional growth and job performance



CREDITS

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(General Secretary)



DESIGNERS



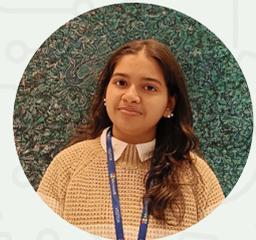
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