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Institute of Technology & Management
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PROF. SANJEEV KUMAR RAGHUWANSHI

FACE OF COVER

Professor

Electronics Engineering

Indian Institute of Technology (Indian School of Mines)
Dhanbad, India

UTKARSH

GLBITM RESEARCH NEWS LETTER - JUNE 2025

GL BAJAJ

Institute of Technology & Management

FIND YOUR SPARK

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CONTENTS

GLBITM - AT A GLANCE

G.L. Bajaj Institute of Technology and Management, located in Greater Noida, Uttar Pradesh, India, stands as a beacon of higher education in the fields of engineering and management. Established with the aim of nurturing future leaders and innovators, GLBITM has carved a niche for itself in the academic landscape of the region. It also stands out in its approach to assist and equip the students for their overall development, giving them a strong foundation for a successful future. The institute offers B.Tech, MBA and MCA programs.

This self-financed institute is governed by Rajeev Memorial Academic Welfare Society (Registered Under Societies Registration Act 1860). It is approved by All India Council for Technical Education (AICTE), Ministry of Human Resource Development, Government of India and affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow.

At its core, GLBITM is committed to academic excellence, offering a wide range of undergraduate and postgraduate programs in engineering, management, and computer applications. The institute is affiliated with Dr. A.P.J. Abdul Kalam Technical University (formerly Uttar Pradesh Technical University) and is approved by the All-India Council for Technical Education (AICTE). The institute has been maintaining its positions amongst the top engineering and management colleges in AKTU university results. It has been maintaining the highest pass percentage amongst the engineering and Management colleges in Noida and Greater Noida region under Dr. APJ Kalam University, Lucknow for the last eight years and is listed among the top engineering and management colleges in Greater Noida, Delhi NCR. In fact, this engineering college has been listed among the top engineering of India by NIRF, issued by MHRD, Government of India.

GLBITM has the unique distinction of being the only private institute in Uttar Pradesh to be awarded the prestigious NAAC A+ grade in its first cycle of accreditation. An A+ grade from NAAC in the first cycle is a rare achievement that underscores GLBITM's exceptional standards in teaching, learning, research, and innovation, as well as its comprehensive infrastructure, faculty quality, and governance. Further solidifying its position as a leader in technical education, all eligible engineering branches at GLBITM are accredited by the National Board of Accreditation (NBA).

GLBITM boasts a sprawling campus equipped with state-of-the-art infrastructure. The campus is designed to foster an environment conducive to learning and innovation. It features modern classrooms, well-equipped laboratories, a central library with a vast collection of books and digital resources, and advanced computing facilities. The institute also provides ample sports and recreational facilities to promote the well-rounded development of its students.

Understanding the importance of industry exposure, GLBITM maintains strong ties with the corporate world. It regularly organizes guest lectures, workshops, and seminars led by industry experts. The institute's active placement cell works tirelessly to secure lucrative job opportunities for its graduates, boasting an impressive track record of placements in top multinational companies and esteemed organizations.

Research and innovation are at the heart of GLBITM's ethos. The institute encourages its faculty and students to engage in research activities, contributing to the advancement of knowledge in their respective fields. It has several research centers and innovation labs where cutting-edge research is conducted in collaboration with industry and academic partners.

GLBITM is not just about academic achievements; it also emphasizes the holistic development of its students. Through a variety of extracurricular activities, clubs, and societies, students are encouraged to pursue their interests and talents beyond the classroom. Leadership, teamwork, and social responsibility are some of the key values instilled in students, preparing them to be not only successful professionals but also conscientious citizens.

EDITORIAL BOARD

Message
from
Face of Cover

PROF.SANJEEV KUMAR RAGHUWANSHI

Professor

Electronics Engineering

Indian Institute of Technology

(Indian School of Mines) Dhanbad

Pioneering Progress
Through Research Excellence

Dear Esteemed Readers,

It is with immense gratitude and joy that I address you as the featured face of the June 2025 edition of the Research Newsletter of G. L. Bajaj Institute of Technology and Management, Greater Noida. I extend my sincere thanks to the leadership at GLBITM for this honour and for selecting my profile for this distinguished platform. As a professor at IIT Dhanbad, I have had the privilege of engaging with academic and research communities across the globe. Yet, the vibrant research ecosystem and progressive vision at GLBITM truly stand out as both inspiring and commendable.

This newsletter is a reflection of the institute's unwavering commitment to academic excellence, innovation, and societal advancement. More than just a collection of scholarly accomplishments, this publication captures the dynamic synergy of ideas, inquiry, and impact. It is a celebration of intellectual pursuit—where faculty, researchers, and students come together to shape the evolving frontiers of science, technology, and management.

The research showcased within speaks to the creativity and drive that fuel GLBITM's academic endeavours. The institute's dedication to quality is further underscored by significant milestones such as its NAAC A+ accreditation and NBA accreditation of eligible programs—clear indicators of institutional excellence and future-readiness. This newsletter offers a glimpse into that achievement, fostering collaboration, inspiring curiosity, and encouraging the transformation of research into real-world solutions. I warmly invite you to explore the insights and innovations presented in this edition. Each article is a testament to the commitment, perseverance, and intellectual vitality that define GLBITM's research culture. My heartfelt congratulations to the editorial team and the entire GLBITM community for continuing this impactful initiative. May the spirit of inquiry and innovation that animates these pages continue to flourish, spark dialogue, and shape a brighter future.

Message
from
Chief Patron

MR. PANKAJ AGARWAL
Vice Chairman

G.L. Bajaj Institute of Technology and Management, Greater Noida

A Vision Realized:
Advancing Our Research Endeavors

Dear Scholars, Innovators, leadership Team and Researchers,

As the Vice Chairman of G.L. Bajaj Institute of Technology and Management, Greater Noida, and your Chief Patron, I congratulate the Editorial team to come out with this *Research Newsletter 'Utkarsh'*. This initiative embodies the realization of our long-standing vision—to establish GLBITM as a beacon of excellence in innovation, research, and academic growth.

Over the years, GLBITM has earned a distinguished reputation, marked by consistent achievements and a commitment to advancing knowledge. This *Research Newsletter* is more than a publication; it is a testament to our shared dedication, highlighting the intellectual rigor, creativity, and problem-solving mindset of our faculty and students. It serves as a vital platform to exchange ideas, foster interdisciplinary collaboration, and nurture a research-driven culture that reaches beyond institutional boundaries.

I extend my sincere appreciation to our faculty, students, administrative teams, and industry partners whose dedication and efforts have made this endeavour possible. As you engage with the articles in this edition, I hope it ignites curiosity, inspires innovation, and reinforces our collective commitment to research excellence.

Together, let us continue to push boundaries— questioning, discovering, and innovating—to shape a future defined by knowledge, creativity, and lasting impact.

Message from
Chief Patron

MR. KARTIKAY AGARWAL
CEO

G.L. Bajaj Institute of Technology and
Management, Greater Noida

A New Chapter in Research and Innovation Begins

Dear Researchers, Innovators, and Knowledge Seekers,

It gives me immense pleasure to introduce the *Research Newsletter* of G.L. Bajaj Institute of Technology and Management, Greater Noida. This initiative marks an important step forward in our ongoing commitment to strengthening the research ecosystem and cultivating a vibrant culture of academic excellence.

GLBITM has always believed in empowering minds through knowledge and innovation. This newsletter reflects that vision—a dedicated platform to highlight the outstanding research contributions of our faculty and students. It serves not only as a channel for sharing impactful findings but also as a catalyst for expanding our global footprint in research and development.

Through this initiative, we aim to inspire collaborative thinking, encourage interdisciplinary engagement, and promote solutions to real-world challenges. I extend my sincere appreciation to all contributors and supporters who have brought this vision to life. Together, let's continue advancing research as a powerful force for progress and transformation.

Message *from* Patron

DR. PREETI BAJAJ
Director

G.L. Bajaj Institute of Technology and Management, Greater Noida

Fostering Excellence and Innovation: A Message from the Director

Dear Esteemed Mentors, Leaders, Teachers, Researchers and Community at Large, Greetings from G.L. Bajaj Institute of Technology and Management, Greater Noida.

As Director of G.L. Bajaj Institute of Technology and Management, Greater Noida, and Patron of this monthly research newsletter, I take immense pride in seeing this vibrant platform continue to thrive as a reflection of our institute's dedication to fostering a dynamic, research-driven academic culture. This newsletter remains a powerful medium for showcasing groundbreaking research, facilitating interdisciplinary collaboration, and highlighting the significant contributions of our faculty and students to the global academic community.

At GLBITM, we are deeply committed to nurturing a culture of inquiry and innovation. Our vision is to empower students and faculty to pursue high-impact research that addresses both local and global challenges. This ongoing publication plays a pivotal role in reinforcing that vision—by sharing diverse research outcomes and thought leadership, it not only informs but also inspires deeper engagement in meaningful scholarly work.

This platform strengthens our collective ambition to continually elevate research standards. By celebrating achievements and fostering a spirit of curiosity and innovation, it motivates our community to push boundaries and set new benchmarks. In doing so, we advance GLBITM's reputation as a leader in technological and managerial education, while contributing robustly to India's research ecosystem and global knowledge networks.

Our NAAC A+ accreditation and NBA-certified programs underscore our commitment to excellence, but it is through consistent scholarly effort that we truly distinguish ourselves. This newsletter exemplifies that ongoing pursuit—highlighting research that enhances learning, drives progress, and positions GLBITM as a beacon of academic and research excellence.

Heartiest congratulations to the editorial team, contributors led by Prof Mayank Dean Research and Development and the entire GLBITM family for your relentless pursuit of knowledge and innovation. Let us continue to harness this platform to inspire, collaborate, and lead—raising the bar for research impact locally and globally.

Overview
OF GLBITM RESEARCH

The Research and Development department at GLBITM is committed to achieving these vision and mission objectives, guided by our core values of excellence, innovation, collaboration, and societal impact. Through our dedicated efforts, we aspire to contribute significantly to the advancement of science and technology, preparing our students to be leaders in their fields and driving positive change in the world.

At G.L. Bajaj Institute of Technology and Management (GLBITM), Greater Noida, our vision for Research and Development (R&D) is to be a globally recognized center of excellence in research, fostering innovation and advancing knowledge in engineering, technology, and management. We aim to create an ecosystem that nurtures creativity, encourages interdisciplinary collaboration, and contributes significantly to the betterment of society, the environment, and the global economy.

Vision

Mission
OUR MISSION IS TO:

- **Promote a Research-Intensive Culture:** Cultivate an environment where faculty, students, and researchers are encouraged to pursue their research interests, pushing the boundaries of knowledge and innovation.

- **Foster Interdisciplinary Collaboration:** Encourage collaboration across different disciplines within the institute and with national and international research organizations, industries, and academic institutions to address complex global challenges.

- **Enhance Research Infrastructure:** Continuously upgrade our research facilities and resources to provide a state-of-the-art environment that supports cutting-edge research and development activities.

- **Focus on Societal Impact:** Direct our research efforts towards solving real-world problems that benefit society, contributing to sustainable development and improving the quality of life.

- **Strengthen Industry-Academia Linkages:** Establish strong connections with industry to ensure that our research is relevant and contributes to technological advancements, innovation, and entrepreneurship.

- **Promote Global Research Collaborations:** Engage in partnerships with leading international universities and research institutions to enhance the global impact and visibility of our research, facilitating exchange programs, joint research projects, and publications.

- **Encourage Research Excellence:** Recognize and reward outstanding research contributions and achievements of our faculty and students, fostering a culture of excellence and continuous improvement.

Glimpses
of month
APRIL'25

EVENTS ORGANIZED BY DEPARTMENTS

1

EVENT NAME:
SAP HACKFEST 2025

Date: 26 April 2025
Deptt: Training and Placement Cell & CSE

The Regional Round of SAP Hackfest 2025 was successfully conducted, serving as a dynamic platform that blended innovation, technology, and industry-academia collaboration. Approximately 100 teams from various departments showcased their ideas across 10 parallel sessions, each evaluated by a panel consisting of one industry expert and one academic representative. The event highlighted the real-world challenges and solutions, particularly in Sustainable Business, Preventing Digital Fraud, and Ethics in AI. This event was jointly organized by the Training and Placement (T&P) Cell and the Department of Computer Science and Engineering (CSE), The hackfest witnessed seamless coordination between departments and industry experts. This collaborative effort played a crucial role in the event's resounding success, fostering experiential learning and encouraging a culture of innovation among students.

2

EVENT NAME: ECHOVERSE- THE ULTIMATE SPEAKING BATTLE
Date:26th, April,2025
Deptt: CSE (DS)

YuktiKula Club of CSE(DS) Department at GL Bajaj Institute of Technology and Management successfully organized a thrilling event titled "EchoVerse – The Ultimate Speaking Battle." This high-energy competition provided participants with a powerful platform to showcase their oratory skills through debates and extempore speaking. With intense verbal duels and spontaneous speeches, students explored the art of persuasion, quick thinking, and impactful communication in a competitive yet encouraging environment.

3

EVENT NAME:
INTRODUCTION TO CLOUD COMPUTING

Date: 23rd April 2025
Deptt.: CSE (DS)

The YuktiKula Club of CSE(DS) Department at GL Bajaj Institute of Technology and Management hosted an insightful seminar titled "Cloud Computing: Concepts, Benefits G Future." This engaging session, featuring distinguished speakers Mr. Ravi Payal and Dr. Saruti Gupta, offered participants a deep dive into the world of

cloud computing and its transformative applications. Attendees explored the importance of cloud computing, its types, service models, leading providers, real-world use cases, and billing structures.


4

EVENT NAME: EXPERT TALK ON
FOUNDATIONS OF INTELLECTUAL PROPERTY: BASICS AND BEYOND

Date: 26th April, 2025
Deptt.:ECE

Department of Electronics & Communication Engineering, GL Bajaj Institute of Technology and Management, Greater Noida in collaboration with Institution' Innovation council (IIC) GLBITM organized an Expert talk on "Foundations of Intellectual Property: Basics and Beyond" on 26th April, 2025 to mark celebration of World Intellectual Property Day. Every year, the world celebrates World Intellectual Property Day on April 26 which aims to spread awareness about intellectual property (IP) rights and how it encourages innovation and creativity to drive human progress. This day marks the opportunity to educate people on the need for IP protection to protect the creator's rights and copyright as well as the public interest. World Intellectual Property Day is an opportunity for both inventors and creators for people across the

world to promote IP solutions that shape the world. This day aims to educate people on the various ways of safeguarding intellectual property such as patents, trademarks, copyrights and others. The keynote speaker of the event was Dr.Pushpa. She emphasised on the need, importance, and requirement of IPR with the help of simple and real-life examples. She addressed that Intellectual property refers to any intellectual creation, such as literary works, artistic works, inventions, designs, symbols, names, images, computer code, etc. Dr. Krishanu kundu (Associate Professor, ECE) coordinated the whole event under the super vision of Prof. Dr. Satyendra Sharma (Professor &HOD, ECE). Around 80 students of ECE Department participated in the event.
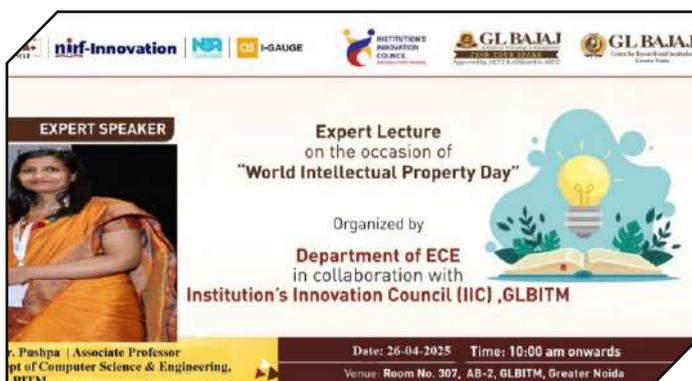
5 EVENT NAME: STUDENT VISIT TO BHARAT SIKSHA EXPO 2025

Date:25th April 2025
Deptt. : ECE

On 25th April, 25 the students of the Electronics and Communication Engineering (ECE) Department had the opportunity to visit the Bharat Shiksha Expo 2025, an event organized by the Institution's Innovation Council (IIC) Cell and the Anvitha Club. The educational trip was coordinated under the able guidance of Dr. Krishanu Kundu and Dr. Smriti Sachan, aiming to expose students to the latest advancements, innovations, and trends in the educational and technological sectors.

Students attended various technical talks and demonstrations, interacted with exhibitors, and gained first-hand knowledge about modern tools and practices being adopted in the education sector.
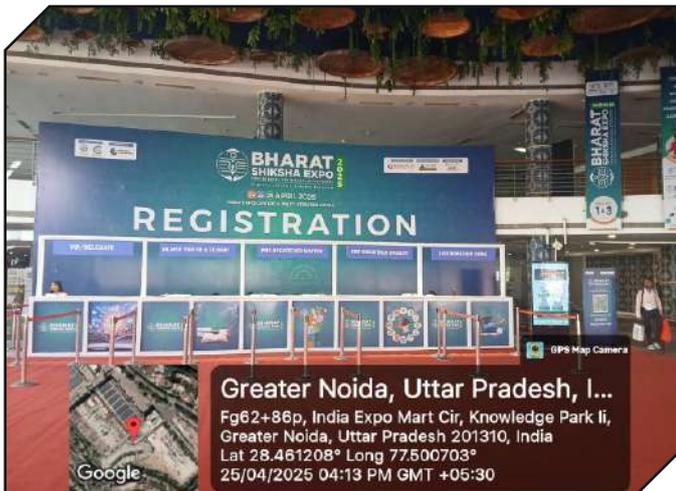
6 EVENT NAME: CULTIVATING THE SPIRIT OF INNOVATION AND ENTREPRENEURSHIP

Date: 25th – 26th April 2025
Deptt: GLBCRI

The event kicked off on 25th April with a warm welcome to speakers and participants. Dr. Sandeep Jain, Founder & CEO of GeeksforGeeks, shared his entrepreneurial journey, stressing the value of innovation, resilience, and learning. Mr. Abhishek Tiwari, Founder of Venture Mozart, followed with insights on the startup ecosystem, emphasizing mentorship, networking, and market research.Dr. S.P. Mishra (Advisor, Innovation Hub & GLBCRI) encouraged students to adopt an entrepreneurial mindset, and Dr. P.S. Pandey (GM, GLBCRI) concluded the day with a vote of thanks and an introduction to the G L Bajaj Centre for Research & Innovation.Day 2 featured Dr. Rajesh Singh (Director, Research & Innovation, Uttaranchal University), who spoke on innovation from ideation to product development and urged students to pursue interdisciplinary research. Dr. P.S. Pandey wrapped up the day and the event with closing remarks.Both days saw enthusiastic student participation, making the sessions interactive and impactful.
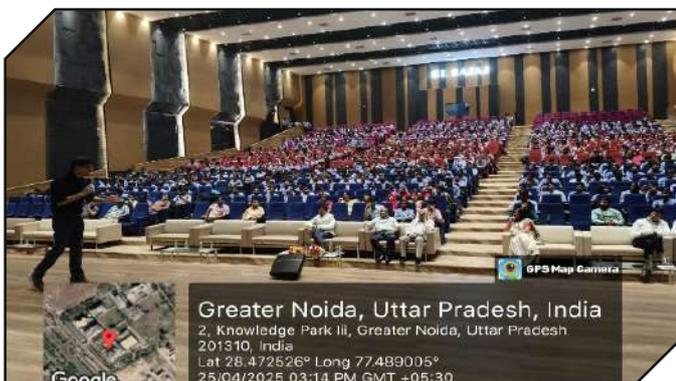
7 EVENT NAME: WOMEN ENTREPRENEURSHIP DEVELOPMENT PROGRAMME (WEDP)

Event Date: March 18th to April 23rd, 2025
Deptt: IT

GL Bajaj Institute of Technology and Management (GLBITM) inaugurated the Women Entrepreneurship Development Programme (WEDP) on 18th March 2025. Organized by the IT Department in collaboration with GLBCRI and sponsored by the Department of Science and Technology, Govt. of India, the program aimed to empower aspiring women entrepreneurs with essential skills and confidence.Ms. Sampa Banerjee, a renowned expert in entrepreneurship and women's empowerment, was the Chief Guest. Distinguished speakers from academia and industry also participated.The 24-day program (March 18–April 23) offered intensive training, mentorship, and innovation-driven insights. The valedictory session celebrated the dedication and potential of all participants, marking a significant step toward women's empowerment through entrepreneurship.

8 EVENT NAME: CII-MAJESTIC SKILL WILL LEAD-V EDITION, FINAL VERSION

Event Date: 03rd April 2025
Deptt: ME

The main objective of this event was to improve the students skills, motivation, and leadership abilities. The event provided students with valuable insights into innovation and skill development, covering topics like cost reduction in manufacturing, team building, leadership, and Excel dashboards. These discussions highlighted the role of innovation in driving business growth and competitive advantage.

Emphasizing teamwork and leadership, the event showcased the importance of collaboration for creative solutions. It encouraged critical thinking and problem-solving, empowering students to apply innovative strategies in real-world situations. Motivational speeches and an interactive Q&A session inspired students to continue developing their skills, ultimately preparing them for success in both academic and professional careers. Mr. Mahesh Munjal (Chairman and Managing Director Majestic Auto Limited), Mr. Rohit Puri, Mr. Apar Gupta, and Mr. Romesh was the speakers and jury member during the event.

9 GUEST LECTUREON "ADVANCEMENT AND CHALLENGES IN GENERATIVE AI"

Event Date: 9th April 2025
Deptt: MCA

Department of MCA, GL Bajaj Institute of Technology & Management, Greater Noida organized a Guest Lecture on Advancement and Challenges in Generative AI. The program was inaugurated with the lighting of the lamp by Guest Speaker Mr. Sameer Goyal along with Dr. Madhu S Guar (Head-MCA) and other faculty members. Mr. Sameer Goyal Senior Director and Head of Engineering, Acuity Knowledge Partners. The topic of the talk was Advancement and Challenges in Generative AI. Mr. Sameer started his session with a problem and ask the solution for that problem to involve each and every student. Then he gave the insight of Generative AI and discussed the tools used for this. He discussed the challenges in Generative AI.

The main objective of the event was to explore the latest developments, practical applications, and ongoing challenges in Generative AI, with a focus on fostering innovative thinking and encouraging entrepreneurial ventures in the AI domain. The orientation ends up with vote of thanks by Dr. Madhu Sharma Gaur. About 280 students took part in it. The student will be able to gain insights into the latest algorithms, tools, and trends shaping the future of generative AI., Inspiration for New Ideas: Discussions and case studies can spark novel ideas and inspire participants to explore new applications or problem-solving approaches, Cross-disciplinary Collaboration: Bringing together tech experts, researchers, and industry leaders can lead to unexpected partnerships and fusion of ideas, Problem Identification: Highlighting current challenges opens up opportunities for innovative solutions and product development, Exposure to AI tools, platforms, incubators, and grants that can support startup journeys, Practical insights from startups and companies using generative AI help entrepreneurs shape feasible and market-driven solutions.

FACULTY ACHIEVEMENTS

EXPERT LECTURE ON WORLD INTELLECTUAL PROPERTY DAY BY DR. PUSHPA

Dr. Pushpa from the Department of Computer Science & Engineering delivered an expert lecture on "Foundations of Intellectual Property: Basics and Beyond" on April 26, 2025, as part of the World Intellectual Property Day celebrations. The event took place on Saturday, April 26, 2025, from 10:00 AM to 4:00 PM, and was organized by the Department of Electronics & Communication Engineering, GL Bajaj Institute of Technology and Management, Greater Noida, in collaboration with the Institution's Innovation Council (IIC), GLBITM.

SESSION CHAIR IN ICPCT -2025 BY DR. ARCHANA SAR & MS. PRIYA SINGH

Dr. Archana Sar, Professor of CSE(DS) Department at GLBajaj Institute of Technology and Management, Greater Noida, and Ms. Priya Singh , Assistant Professor of CSE(DS) Department at GL Bajaj Institute of Technology and Management, Greater Noida has participated as a Session Chair during the "International Conference on Pervasive Computational Technologies (ICPCT-2025)", organized by Department of Computer Science Engineering (AIML), GL Bajaj Institute of Technology and Management, Greater Noida, UP, India, held on 8th -9th February, 2025.

COMPLETED ONE WEEK FDP ON "AI & CLOUD SECURITY: COMPLIANCE STRATEGIES FOR A DIGITAL FUTURE"

Ms. Ayasha Malik, Assistant professor of CSE (DS) has successfully completed one week FDP on "AI & Cloud Security: Compliance Strategies for a Digital Future: Technically sponsored by IEEE Bombay Section organized by Department of Computer Technology and Department of Electronics Engineering, Yeshwantrao Chavan College of Engineering, Nagpur during 07-12 April 2025.

SUCCESSFULLY COMPLETED THE NPTEL COURSE BY MR. KARAN SIWACH

Mr. Karan Siwach has successfully completed the NPTEL course "Data Analytics with Python" and " "Theory of Computation" . Also attended Faculty Development Program in "Data Analytics with Python" organised by NPTEL, with a consolidated score of 61 % and 65% respectively.

RECEIVED A GRANT FORM CSTUP WITH MR. ROHIT SAHU AS MENTOR

As a mentor, Mr. Rohit Sahu Assistant Professor in Mechanical Engineering Department G L Bajaj Institute of Technology and Management, Students(Kushi Singh, Rahul Kushwaha and Akshay Guleria) has received a grant of Rs 20,000 from CSTUP under the Engineering Student's Project Grant Scheme for a project title 'Design, Fabrication and Investigation of Agro waste-based Metal Matrix Composite and its Application' as well as they secured a position a under top ten project in final project presentation held at CSTUP, Lucknow on 26 April 2025 and received a consolation Prize of Rs 5000.

SUCCESSFULLY COMPLETED THE NPTEL COURSE BY DR. VIJEYATA

Dr. Vijeyata has successfully completed a 12-week Faculty Development Programme (FDP) titled "AI in Human Resource Management" offered by NPTEL from January to April 2025. This course, designed by academic experts and industry professionals, provided in-depth insights into the application of artificial intelligence in HR practices, including talent acquisition, performance management, and employee engagement. Through this FDP, Dr. Vijeyata enhanced their understanding of emerging AI tools and their transformative impact on HRM, positioning themselves at the forefront of technological integration in the human resource domain.

KNOWLEDGE TRANSFER SESSION BY DR. UMA TOMER

Dr. Uma Tomer from Department of Information Technology delivered a Knowledge Transfer (KT) session on "Elongation of NFT Framework using ERC 721," exploring the benefits and future scope of this innovative approach. Dr. Tomer introduced the concept of Non-Fungible Tokens (NFTs) and their applications, highlighting the potential of the ERC 721 standard in creating unique digital assets. During the session she discussed the elongation of the NFT framework, enabling the creation of more complex and sophisticated digital assets. The benefits of using ERC 721 for NFT elongation were highlighted, including increased security, transparency, and ownership verification. Dr. Tomer discussed the future scope of NFT elongation, including its potential applications and proposed technique is to overcome the gaps identified as surrounding sustainability, scalability, user experience, and regulation. The session provided technical insights into the ERC 721 standard and its applications in NFT development. Furthermore it encouraged interactive discussion, allowing participants to engage with the topic and ask questions. The session was informative, engaging, and thought-provoking, offering participants a deeper understanding of NFTs and their applications.

KNOWLEDGE TRANSFER SESSION BY DR. PARAMITA DE

Dr. Paramita De from the Department of Information Technology gave a Knowledge Transfer (KT) presentation titled "IoT-Enabled Smart Helmet for Safety and Accident Detection". The presentation presents a full discussion of how an IoT device can be utilised in a smart helmet to redefine motorcycle safety standards by adding RFID technology, an alcohol detection system, an integrated accelerometer, to detect abrupt changes in acceleration and an accident notification alert system to protect the rider. The presentation also covered the operation of several sensors and how they are integrated into the module to ensure the safety of the motorbike rider. This innovative helmet uses the Internet of Things (IoT) to provide real-time data transmission, allowing the rider to communicate seamlessly with their environment.

KNOWLEDGE TRANSFER SESSION BY Mr. ARUN MITTAL

Mr. Arun Mittal from the Department of IT delivered a Knowledge Transfer (KT) Presentation titled "Implementing Time Series Analysis to Detect Adrenal Cortical Carcinoma in its Early Phases".Adrenal cortical carcinoma is a rare and aggressive cancer that arises from the adrenal cortex, with an estimated incidence of 1-2 individuals per million each year. Their early diagnosis is essential to prevent the high mortality rate associated with this type of cancer, which in many cases tends to be diagnosed at later stages. Consequently, more efficient, and precise techniques for the early detection of ACC are urgently needed. Time collection evaluation is an effective device for detecting trends and styles in health data. The purpose of this have a look at turned into to apply time collection analysis to detect adrenal cortical carcinoma in its early stages. The researchers amassed information on the clinical facts of sufferers with suspected adrenal cortical carcinoma, after which analyzed the data with time collection analysis.

KNOWLEDGE TRANSFER SESSION BY Mr. ARUN MITTAL

Mr. Arun Mittal from the Department of IT delivered a Knowledge Transfer (KT) Presentation titled 3D Magnetic Resonance Imaging for Detailed Evaluation of Disc Disease. The session provided an in-depth exploration of Disc disease, also referred to as degenerative disc disease, is a widespread ailment associated with the deterioration of spinal discs. After a time, the bursting is expected to rub away and cause severe pain, numbness in each limb, or an insufficiency of power. While traditional imaging techniques, like X-rays or MRIs, could provide some information on changes in the discs of MRI. The method of conducting an orderly audit includes different operations in arrange to distinguish and incorporate essential things. These operations incorporate incorporation criteria, qualification, and screening, distinguishing proof, and utilizing electronic databases for the look.

SUCCESSFULLY COMPLETED THE NPTEL COURSE BY MR. GAGAN GUPTA

Gagan Gupta, faculty of Computer Science and Engineering (AIML) Department at GL Bajaj Institute of Technology and Management, Greater Noida, has successfully completed a 12-week NPTEL course on Cryptography and Network Security, conducted from January to April 2025. The course was offered by NPTEL (National Programme on Technology Enhanced Learning), and Gagan achieved an overall score of 66 out of 100, demonstrating a strong understanding of the subject.

INTELLECTUAL PROPERTY EVENT ATTENDED BY PRIYANKA DATTA & NAGENDRA KUMAR

This is to certify that Priyanka Datta and Nagendra Kumar have been awarded the Certificate of Participation in recognition of their active engagement in IP UTSAV 2025, a national-level initiative conducted to foster awareness and understanding of Intellectual Property Rights (IPR) and its role in fostering innovation and entrepreneurship.

The event was organized virtually by the All India Council for Technical Education (AICTE) in collaboration with the Ministry of Education's Innovation Cell (MIC) from April 21 to April 26, 2025. As part of the Masterclass Series under IP UTSAV, participants were exposed to a series of informative sessions, expert-led discussions, and knowledge-sharing activities focused on patents, trademarks, copyrights, and the strategic importance of IP in academic and entrepreneurial ecosystems.

WOMEN ENTREPRENEURSHIP DEVELOPMENT PROGRAM ATTENDED BY MS. PRIYANKA DATTA

Ms. Priyanka Datta has successfully participated in the Women Entrepreneurship Development Program (WEDP-2025) organized by Department of Information Technology in collaboration with GLBCRI, Greater Noida. The WEDP-2025 was sponsored by Department of Science & Technology, Government of India.

SUCCESSFULLY COMPLETED THE NPTEL COURSE BY MS. PUJA PRIYA

Ms. Puja Priya has successfully participated in a One-Week AICTE-Recognized Faculty Development Programme on "Methods of Research and Publication Ethics," organized by the Department of Education and Educational Management at G. L. Bajaj Institute of Technology and Management, Greater Noida, from February 17 to February 21, 2025. Additionally, she has successfully completed an NPTEL online certification course in "CMOS Digital VLSI Design.
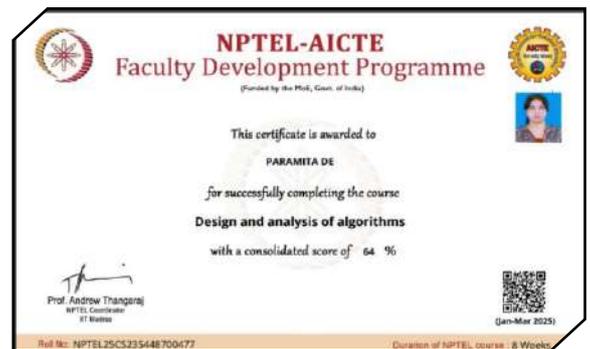
SUCCESSFULLY COMPLETED THE NPTEL COURSE BY MS. DEEKSHA SANKRIT

Ms. Deeksha Sankrit successfully completed the NPTEL-AICTE Faculty Development Programme on "CMOS Digital VLSI Design" during Jan–Mar 2025. This 8-week course, offered through NPTEL and funded by the Ministry of Education, Government of India, was conducted by IIT Roorkee. She secured a consolidated score of 60%, with 19.58/25 in online assignments and 40/75 in the proctored exam, earning the Elite certification. The course provided in-depth training in advanced digital VLSI design concepts and methodologies.

SUCCESSFULLY COMPLETED THE NPTEL COURSE BY DR. PARAMITA DE

Dr. Paramita De successfully completed the NPTEL-AICTE Faculty Development Programme funded by the Ministry of Education, Government of India. She undertook an 8-week course titled "Design and Analysis of Algorithms" conducted by NPTEL and coordinated by IIT Madras. The FDP, held during January to March 2025, aimed to strengthen foundational and advanced concepts in algorithm design, complexity analysis, and problem-solving strategies. Ms. Paramita De secured a consolidated score of 64%, reflecting her effective participation and understanding of core algorithmic principles essential for academic and research excellence.

SUCCESSFULLY COMPLETED THE NPTEL COURSE BY PROF. ARVIND NATH SINHA

Prof. Arvind Nath Sinha has successfully completed an 8-week Faculty Development Programme (FDP) on "Mergers, Acquisitions and Corporate Restructuring", conducted by NPTEL from February to April 2025. This course offered comprehensive insights into corporate strategies for growth and consolidation, focusing on key financial, legal, and managerial aspects of mergers and acquisitions. The FDP emphasised practical approaches to restructuring, valuation techniques, and post-merger integration. Through this program, Arvind Nath Sinha enhanced his expertise in strategic decision-making and corporate transformation, equipping himself with advanced knowledge relevant to both academic and industry contexts.
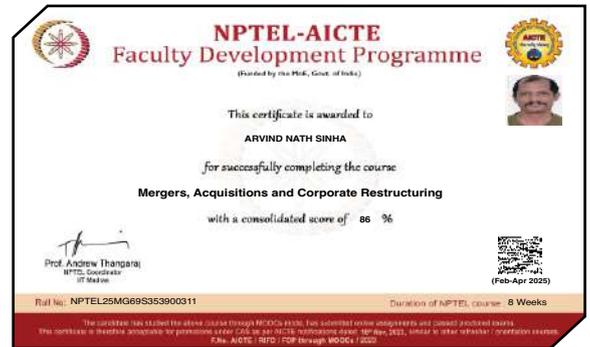
FDP/MDP/Training Program/Workshop

SL.No.	Faculty Member	Department	Title	Days	Institution/ Industry
1	Piyush Kushwaha	CSE-AI	FDP on GEN AI	1	VVDN Technologies pvt LTD, Manesar
2	Piyush Kushwaha	CSE-AI	ICDT-2025	2	GLBITM
3	Piyush Kushwaha	CSE-AI	FDP on Cryptography for Information Security	5	Dr. A.P.J. Abdul Kalam Technical University, Lucknow
4	Gagan Gupta	CSE-AIML	NPTL: Cryptography and Network Security	84	NPTEL
5	Gagan Gupta	CSE-AIML	NET	1	UCG NET
6	Devendra Singh Mohan	CSE-AIML	WEDP,2025	24	GLBITM, Greater Noida
7	Ms. Rajani Singh	IT	WEDP,2025	24	GLBITM, Greater Noida
8	Dr.Uma Tomer	IT	WEDP,2025	24	GLBITM, Greater Noida
9	Dr. Paramita De	IT	WEDP,2025	24	GLBITM, Greater Noida
10	Ms. Monika	IT	WEDP,2025	24	GLBITM, Greater Noida
11	Dr. Neeru Singh	IT	WEDP,2025	24	GLBITM, Greater Noida
12	Ms. Shivani Garg	IT	WEDP,2025	24	GLBITM, Greater Noida
13	Ms. Rajni Singh	IT	Cyber Security Threats & Legal Issues	5	MIET, Greater Noida
14	Dr. Birender Kumar	IT	Cyber Security Threats & Legal Issues	5	MIET, Greater Noida
15	Dr. Vijeyata Singh	MBA	AI in HRM	84	NPTEL AICTE
16	Prof. (Dr.) Arvind Nath	MBA	Mergers, Acquisitions and Corporate Restructuring	84	NPTEL AICTE
17	Dr. Shaivya Dixit	MBA	Salesforce Business Analyst Professional	7	ICT Academy

HIGHLIGHTS OF THE FDP/ WORKSHOP ATTENDED

Dr. Pushpa (Associate Professor) participated in the Faculty Development Program on "METHODS OF RESEARCH AND PUBLICATION ETHICS", organized NITTTR CHANDIGARH. This was online FDP conducted during 17 Feb 2025-21 Feb 2025. Methods of Research and Publication Ethics is a foundational topic, especially for academic and scientific communities. This FDP provides both the methodologies used in conducting research and the ethical standards guiding the dissemination of research findings.

Ms. Abha Kaushik (Assistant Professor) participated in the Faculty Development Program on "PYTHON USING AI", organized by AI FOR TECHIES. The program was conducted in online mode from 5 Jan 2025 to 5 Jan 2025. The aim of this FDP is to provide knowledge and practical skills required to leverage Python programming for developing Artificial Intelligence applications, covering key concepts such as data handling, machine learning, neural networks, and AI-driven problem-solving.

Ms. Abha Kaushik (Assistant Professor) participated in the Faculty Development Program on "DEEP LEARNING IN BIOMEDICAL EMERGING", organized by JOGINPALLY B.R. ENGINEERING COLLEGE. The program was conducted in online mode from 20 Jan 2025 to 25 Jan 2025. The aim of this FDP is familiarize faculty members with the fundamentals and recent advancements in deep learning techniques and their applications in emerging biomedical domains, including medical imaging, disease diagnosis, genomics, and personalized healthcare, fostering interdisciplinary research and innovation.

Ms. Bhairvee singh (Assistant Professor) participated in the Faculty Development Program on "RESEARCH METHODOLOGY & DATA ANALYSIS", organized by AMITY UNIVERSITY, GR. NOIDA. The program was conducted in online mode from 23 Jan 2025 to 24 Jan 2025. The aim of an FDP focused to enhance the research capabilities of faculty members by providing a thorough understanding of research design, methodologies, and data analysis techniques, enabling them to conduct high-quality research and interpret data effectively using appropriate statistical tools and software.

Dr. Nitin Tyagi (Professor), participated in the Faculty Development Program on "ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING", organized by E & ICT ACADEMY IIT GUWAHATI, GNIOT. The program was conducted in offline mode from 3 Feb 2025 to 8 Feb 2025. This FDP aimed to enhance the knowledge and teaching competencies of faculty members in the areas of AI and Machine Learning

Mr. Swagat Ranjan Sahoo (Assistant Professor), Ms. Mekhala (Assistant Professor), Ms. Pragya (Assistant Professor), Ms. Bhairvee singh (Assistant Professor), Ms. Abha Kaushik (Assistant Professor) participated in the Faculty Development Program on "GENERATIVE AI", organized by E & ICT ACADEMY, IIT KANPUR. The program was conducted in online mode from 3 Feb 2025 to 8 Feb 2025. The aim of an FDP focused on Generative AI would typically center on enhancing the knowledge, skills, and practical understanding of educators and researchers regarding the rapidly evolving field of artificial intelligence.

Dr. Amit Wadhwa (Associate Professor), Mr. Kuldeep singh (Assistant Professor) participated in the Faculty Development Program on "EXPLORING AI USING IBM WATSON AND GOOGLE COLAB", organized by GURUKULA KANGRI VISHWAVIDYALAYA HARIDWAR. The program was conducted in online mode from 3 Feb 2025 to 08 Feb 2025. The aim of an FDP focused on comprehensive understanding of artificial intelligence (AI) technologies, their applications, and how to use powerful tools for AI development.

Dr. Pushpa (Associate Professor), Dr Vrinda (Associate Professor), Dr. Anju Chandna (Assistant Professor), Dr. Jeba Nega Cheltha (Assistant Professor), Dr. Payal Garg (Assistant Professor), Mr Ashwani Kumar (Assistant Professor), Mr Pawan Kumar Singh (Assistant Professor), Ms. Abha Kaushik (Assistant Professor) participated in the Faculty Development Program on "GREENER HORIZONS: ENERGY EFFICIENCY, SUSTAINABILITY, AND CLIMATE CHANGE SOLUTIONS", organized by MANAV RACHNA INTERNATIONAL INSTITUTE OF RESEARCH AND STUDIES DEEMED TO BE UNIVERSITY. The program was conducted in online mode from 10 Feb 2025 to 15 Feb 2025. This FDP aimed to enhance knowledge and awareness, foster interdisciplinary collaboration, build Capacity for Implementing Solutions.

Ms. Mekhala (Assistant Professor), Ms. Pragya (Assistant Professor) participated in the Faculty Development Program on "ADVANCE EXCEL WITH POWER BI", organized by E & ICT ACADEMY, IIT KANPUR. The program was conducted in online mode from 10 Feb 2025 to 15 Feb 2025. The aim of an FDP focused on enhancing the skills and knowledge of educators and professionals in using advanced Excel techniques and Power BI tools for data analysis, visualization, and decision-making.

Mr. Swagat Ranjan Sahoo (Assistant Professor) participated in the Faculty Development Program on "IOT WITH DRONES", organized by IIT KANPUR. The program was conducted in online mode from 10 Feb 2025 to 15 Feb 2025. The aim of an FDP highlights the integration of IoT technologies with unmanned aerial systems (UAS) and how these technologies can be applied in real-world scenarios.

Mr. Kuldeep singh (Assistant Professor) participated in the Faculty Development Program on "ADVANCES IN ARTIFICIAL INTELLIGENCE FOR AUTONOMOUS VEHICLES AT MANIPAL ACADEMY OF HIGHER EDUCATION", organized by MANIPAL ACADEMY OF HIGHER EDUCATION. The program was conducted in online mode from 10 Feb 2025 to 15 Feb 2025. The aim of an FDP is to get the comprehensive knowledge of recent advancements in Artificial Intelligence (AI) technologies applied to autonomous vehicles, focusing on perception, decision-making, control systems, deep learning, and real-time sensor integration, thereby fostering academic research and innovation in intelligent transportation systems.

Dr. Jeba Nega Cheltha (Assistant Professor) participated in the Faculty Development Program on "MACHINE LEARNING USING PYTHON", organized by NITTR, CHANDIGARH. The program was conducted in online mode from 17 Feb 2025 to 21 Feb 2025. The aim of an FDP is to learn foundational and advanced concepts of Machine Learning using Python, enabling them to understand algorithms, implement models, and apply machine learning techniques to solve real-world problems effectively in both academic and research contexts


Dr. Payal Garg (Assistant Professor) and Mr. Ashwani Kumar (Assistant Professor) participated in the Faculty Development Program on "METHODS OF RESEARCH AND PUBLICATION ETHICS", organized by NITTTR CHANDIGARH. The program was conducted in online mode from 17 Feb 2025 to 21 Feb 2025. The aim of this FDP is to provide comprehensive understanding of research methodologies and publication ethics, fostering integrity, transparency, and academic excellence in scholarly writing, data handling, and responsible authorship.

Mr. Kuldeep singh (Assistant Professor) participated in the Faculty Development Program on "CRYPTOGRAPHY FOR INFORMATION SECURITY (CIS-25)", organized by DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW.. The program was conducted in online mode from 7 Mar 2025 to 11 Mar 2025. The aim of this FDP is to enhance the knowledge and skills of faculty members in modern cryptographic techniques and their applications in securing digital information, with a focus on theoretical foundations, encryption algorithms, cryptographic protocols, and their role in building robust information security systems.

Dr. Ambuj Saxena (Associate Professor), Dr. Tarun Gupta (Associate Professor), and Mr. Rohit Sahu (Assistant Professor) participated in the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Clean Energy and Environment Sustainability" organized by Government Engineering College Palamu. The program was conducted in online mode from January 6 to January 11, 2025. This FDP aimed to enhance the knowledge and teaching competencies of faculty members in the areas of sustainable energy solutions and environmental conservation, with a focus on recent advancements and practical applications. The sessions included expert talks, interactive discussions, and case studies that contributed to the professional growth of the participants in the domain of clean energy and sustainability.

Dr. Tarun Gupta, Associate Professor, has successfully completed a one-week Faculty Development Program on "Recent Advances in Renewable Energy Technologies," held from January 27 to January 31, 2025. The program was organized by the University School of Engineering, Gautam Buddha University, Greater Noida, Uttar Pradesh (India). This FDP focused on the latest developments, innovations, and research trends in the field of renewable energy, including solar, wind, and bioenergy technologies. The program featured expert lectures, technical sessions, and interactive discussions aimed at enhancing the knowledge and teaching capabilities of faculty members in the area of sustainable energy solutions.
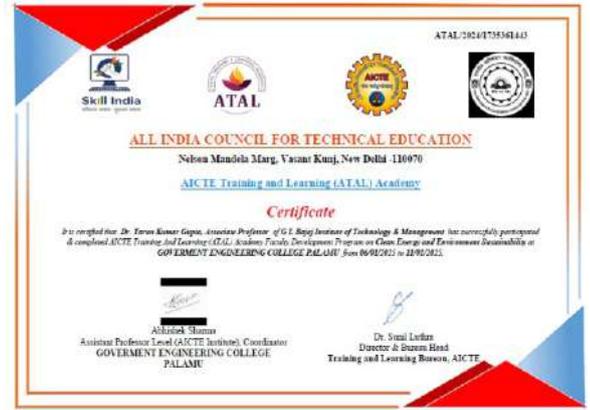
Mr. Rohit Sahu, Assistant Professor, participated in the AICTE-recognized Faculty Development Programme on "Entrepreneurship and Innovation Management for Aatmanirbhar Bharat," conducted by the Entrepreneurship Development and Industrial Coordination Department at NITTTR, Chandigarh. The one-week program was held from January 27 to January 31, 2025. The FDP aimed to equip faculty members with the necessary knowledge and skills to foster entrepreneurial thinking, promote innovation, and support the vision of a self-reliant India. The sessions included expert talks, case studies, and interactive discussions focusing on entrepreneurial strategies, startup ecosystems, and innovation management practices relevant to academia and industry.

Mr. Tarun Kumar Gupta from G. L. Bajaj Institute of Technology and Management successfully completed a one-week Faculty Development Program (FDP) on "Recent Advances in Renewable Energy Technologies," held from 27th to 31st January 2025. The FDP was organized by the University School of Engineering, Gautam Buddha University, Greater Noida, in association with the Association of Indian Universities and the Academies and Administrative Development Centre (AIU GBU-AADC). The program aimed to enhance faculty members' knowledge in emerging renewable energy technologies. This initiative aligns with the vision of promoting innovation and sustainable energy solutions in academia.

Mr. Rohit Sahu from G. L. Bajaj Institute of Technology and Management, Greater Noida, successfully participated in an AICTE-recognized Faculty Development Programme on "Entrepreneurship and Innovation Management for Aatmanirbhar Bharat." The program was organized by the Entrepreneurship Development and Industrial Coordination Department of NITTTR, Chandigarh, from 27th to 31st January 2025. This one-week FDP aimed to enhance faculty skills in fostering entrepreneurship, innovation, and self-reliance among students. The initiative supports the broader national mission of building an Aatmanirbhar Bharat (self-reliant India).

Dr. Abhishek Pandey, Associate Professor at GL Bajaj Institute of Technology & Management, has successfully participated in and completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "AI Beyond the Basics: Exploring Advanced Concepts & Real-World Applications." The program was organized by Asansol Engineering College and held from February 10 to February 15, 2025. This FDP aimed to deepen the participants' understanding of advanced artificial intelligence techniques and their practical applications across various domains. The sessions covered emerging trends, real-world case studies, and hands-on training, enhancing the participants' ability to integrate advanced AI concepts into research and academic curricula.

Dr. Abhishek Pandey, Associate Professor at GL Bajaj Institute of Technology & Management, has successfully participated in and completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Generative AI – Democratization of AI, Responsible AI." The program was organized by Bapuji Institute of Engineering & Technology and conducted from February 17 to February 22, 2025. This FDP focused on the transformative potential of Generative AI, emphasizing its accessibility, ethical use, and role in promoting responsible AI practices. The sessions included expert lectures, practical demonstrations, and discussions on the societal impact, opportunities, and challenges associated with the widespread adoption of generative technologies.

Dr. Abhishek Pandey, Associate Professor at GL Bajaj Institute of Technology & Management, has successfully participated in and completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Importance of Artificial Intelligence in Robotics." The program was organized by the Indian Institute of Information Technology Design and Manufacturing (IIITDM), Kurnool, and held from January 20 to January 25, 2025. This FDP aimed to provide in-depth knowledge of the integration of artificial intelligence in robotic systems, focusing on cutting-edge developments, intelligent automation, and real-world applications. The sessions featured expert insights, technical demonstrations, and interactive discussions that enriched the participants' understanding of AI-driven robotics and its growing significance in industry and research.

Dr. Abhishek Pandey, Associate Professor at GL Bajaj Institute of Technology & Management, has successfully participated in and completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Robotics & Automation in Advanced Manufacturing and Industry 4.0." The program was organized by Medi-Caps University, Indore, and conducted from January 6 to January 11, 2025. This FDP focused on the integration of robotics and automation technologies in modern manufacturing systems, aligned with the principles of Industry 4.0. The sessions provided comprehensive insights into smart manufacturing, cyber-physical systems, industrial IoT, and automation strategies, equipping participants with the knowledge to foster innovation and enhance productivity in the evolving industrial landscape.

Mr. Nagendra Kumar from G. L. Bajaj Institute of Technology and Management, Greater Noida successfully completed a Faculty Development Program on "Cyber Security (On-Premises Hacking)", organized by the E & ICT Academy, IIT Kanpur (a joint initiative of MeitY & IIT Kanpur), held from 27th January to 1st February 2025.

Dr. Abhishek Pandey, Associate Professor at GL Bajaj Institute of Technology & Management, has successfully participated in and completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Generative AI: Techniques, Tools, and Applications." The six-day online FDP was organized by the National Institute of Technology (NIT) Delhi and held from February 3 to February 8, 2025. The program focused on the foundational and advanced aspects of generative AI, covering a wide range of techniques, tools, and real-world applications. Through expert-led sessions, hands-on demonstrations, and interactive discussions, participants gained valuable insights into the development and ethical deployment of generative models in various domains.

Dr. Abhishek Pandey, Associate Professor at GL Bajaj Institute of Technology & Management, has successfully participated in and completed the AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Sustainable Carbon-Free Technologies for Hydrogen Generation and Storage." The program was organized by the National Institute of Technology (NIT) Tiruchirappalli and conducted from February 24 to March 1, 2025. This FDP focused on cutting-edge technologies for the generation and storage of hydrogen, emphasizing sustainability and carbon-free energy solutions. Participants gained deep insights into the scientific principles, technological advancements, and environmental benefits of hydrogen as a clean energy source, preparing them to contribute to the development and adoption of green technologies in the field of energy.

Mr. Gagan Gupta has successfully completed the following professional development programs:

One-Week Online Faculty Development Program on "Green Cloud Computing Practices for Sustainable IT" organized by Tecnia Institute of Advanced Studies, held from December 30, 2024, to January 4, 2025.

One-Week Faculty Updation Program on "Information Security and Privacy in the Digital World" organized by the Department of Computer Science & Engineering, Motilal Nehru National Institute of Technology (MNNIT) Allahabad, conducted from February 19–23, 2025.

One-Week Online Faculty Development Program on "Industry 4.0 with Sustainable Practices" organized by the Department of Electronics & Telecommunication Engineering, Vishwakarma Institute of Technology, Pune, held from April 7–11, 2025

Ms. Attiuttama Mishra successfully completed a five-day Faculty Development Program (FDP) on "Research Trends in Cyber Security, Blockchain, and AI (RTCSBAI'25)" held from 7th to 11th January 2025, organized by the University School of Information & Communication Technology, Gautam Buddha University, Greater Noida, U.P., India. Additionally, she actively participated in a Research Training Programme conducted from 24th February 2025 to 27th March 2025 (weekdays only, 1.5 hours per day).

Mr. Devendra Singh Mohan successfully participated in a One-Week AICTE-Recognized Faculty Development Programme on "Fuzzy Optimization Techniques: New Trends," organized by the Department of Applied Science at IMS Engineering College, held from February 17 to February 21, 2025.

Ms. Sandeep Kumar successfully participated in the 5-day International Faculty Development Programme (FDP) on "Advancing in Computing and IT Revolution (ACIR-2025)," organized by the Department of Computer Science and Engineering at Sharda University, held from February 10 to February 15, 2025.

Dr. Shaivya Dixit of GL Bajaj Institute of Technology and Management successfully participated in a 15-hour Faculty Development Programme (FDP) titled "Salesforce Business Analyst Professional (Online Live FDP)", organized by ICT Academy in association with Salesforce. Held from April 28 to May 3, 2025, the program focused on key competencies in business analysis using Salesforce tools and platforms. It offered practical exposure to cloud-based CRM solutions, data analysis, and stakeholder management. Through this FDP, Dr. Dixit enhanced her understanding of Salesforce ecosystems and gained valuable insights into industry-relevant business analysis practices.

Mr. Avadhesh Kumar Sharma has actively participated in prestigious faculty development programs to enhance his academic and research skills. He successfully completed a one-week AICTE-recognized Faculty Development Programme on "Methods of Research and Publication Ethics," organized by the Education and Educational Management Department, NITTTR Chandigarh, held at G.L. Bajaj Institute of Technology and Management, Greater Noida from 17th to 21st February 2025. Additionally, he earned an Elite NPTEL-AICTE Faculty Development Programme certification for completing the four-week course on "Foundations of Wavelets and Multirate Digital Signal Processing" with a consolidated score of 80%, demonstrating his strong grasp of both theoretical concepts and practical applications. His performance included 24.08/25 in assignments and 55.5/75 in the proctored exam. These accomplishments reflect his dedication to continuous professional growth and contribution to academic excellence.

Mr. Abhishek Singh from G.L. Bajaj Institute of Technology participated in the Faculty Training Program (FTP'25) on "Gen AI" organized by VVDN Technologies Pvt. Ltd., Manesar on 4th April 2025. This program provided valuable insights into the evolving landscape of generative artificial intelligence, helping faculty enhance their skills and perception in cutting-edge AI technologies.

Mr. Piyush Kushwaha from GL Bajaj, Greater Noida, actively participated in two distinguished faculty development initiatives. He completed the Faculty Updation Program on Cryptography for Information Security (CIS-25), held online from 7th to 11th March 2025, under the ISEA-III project of MeitY, Government of India, conducted by the Innovation Hub at Dr. A.P.J. Abdul Kalam Technical University, Lucknow. This program provided hands-on experience in advanced cryptography, cybersecurity protocols, and digital security practices

Additionally, he attended the Faculty Training Program (FTP'25) on "Gen AI," organized by VVDN Technologies Pvt. Ltd., Manesar, on 4th April 2025. This industry-oriented session focused on the latest developments in generative AI, enhancing his understanding and skills in modern AI technologies. These participations reflect his dedication to staying abreast of cutting-edge developments in cybersecurity and artificial intelligence..

Mr. Anish Kumar Yadav from G.L. Bajaj Institute of Technology and Management has actively enhanced his professional expertise by participating in multiple high-impact training programs. He successfully completed the "Applied AI: Practical Implementations" Faculty Development Program, organized by Microsoft India, SAP India, and Edunet Foundation under the TechSaksham initiative, held from 7th to 11th April 2025. He also attended the "Machine Learning with Python" FDP, conducted by the E&ICT Academy, IIT Kanpur, under the MeitY initiative from 17th to 22nd February 2025.

Mr. Anish Kumar Yadav earned certifications from Palo Alto Networks Cybersecurity Academy as an Authorized Instructor in both Cybersecurity Foundation (15th December 2024) and Enterprise Security Deployment (22nd December 2024), demonstrating his commitment to strengthening cybersecurity education and AI proficiency.
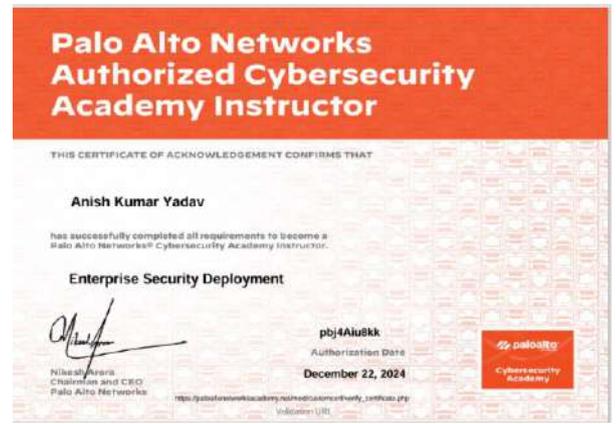
Dr. Amit Shukla from GL Bajaj Institute of Technology and Management, Greater Noida, successfully participated in a one-week AICTE-recognized Faculty Development Programme on "Methods of Research and Publication Ethics." The FDP was conducted by the Education and Educational Management Department of NITTTR Chandigarh from 17th to 21st February 2025, aimed at enhancing academic integrity and research quality among educators.

Mr. Anil Gupta from G.L. Bajaj Institute of Technology and Management participated in a two-day online workshop on "Supercomputing," held from 28th to 29th November 2024. The workshop was organized by GLBCRI and the Department of CSE (AIML) in collaboration with UPLC, Government of Uttar Pradesh, focusing on advancements and applications in high-performance computing.

Mr. Anil Gupta from G.L. Bajaj Institute of Technology and Management successfully participated in a Faculty Development Program on "Blockchain & Web3" held from 10th to 17th March 2025. The FDP was organized by multiple institutions including Sri Siddhartha Institute of Technology, Jai Narain College of Technology, and others, in collaboration with ExcelR Edtech Pvt. Ltd., focusing on the foundational and practical aspects of decentralized technologies and blockchain applications.

Mr. Arvind Mishra from G.L. Bajaj Institute of Technology and Management, Greater Noida, successfully participated in a one-week AICTE-recognized Faculty Development Programme on "Methods of Research and Publication Ethics," conducted by the Education and Educational Management Department, NITTTR Chandigarh, from 17th to 21st February 2025. The FDP aimed to strengthen ethical standards and research practices in academia.

Dr. Brij Kishore Tiwari from Ganesh Lal Bajaj Institute of Technology and Management, Greater Noida, successfully participated in a one-week AICTE-recognized Faculty Development Programme on "Methods of Research and Publication Ethics," conducted by the Education and Educational Management Department, NITTTR Chandigarh, from 17th to 21st February 2025. The FDP emphasized promoting ethical standards and best practices in academic research.

Ms. Diksha Kushwaha from G.L. Bajaj Institute of Technology and Management, Greater Noida, successfully completed a one-week AICTE-recognized Faculty Development Programme on "Science, Technology and Innovation for Sustainable Development," conducted by the Electrical Engineering Department at NITTTR Chandigarh from 27th to 31st January 2025. The FDP focused on integrating innovation with sustainability in engineering practices.
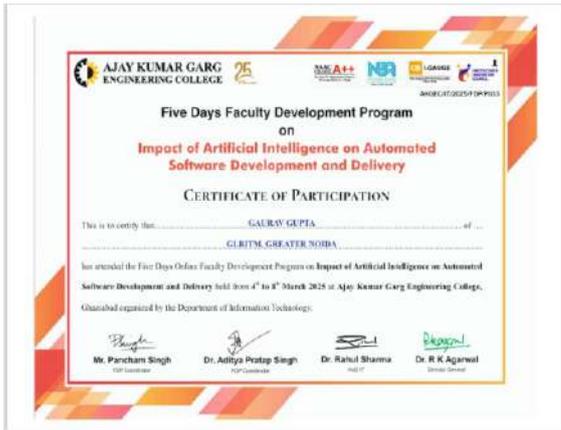

Ms. Diksha Kushwaha from G.L. Bajaj Institute of Technology and Management, Greater Noida, successfully completed a 5-day online Faculty Development Programme on "Inculcating Universal Human Values in Technical Education," organized by AICTE from 16th to 20th December 2024. The FDP aimed to integrate ethical and human values into engineering education.

Dr. Afreen Anjum from G.L. Bajaj Institute of Technology and Management, Greater Noida, successfully completed a one-week AICTE-recognized Faculty Development Programme on "Methods of Research and Publication Ethics," organized by the Education and Educational Management Department, NITTTR Chandigarh, from 17th to 21st February 2025. The FDP aimed to promote ethical research practices and academic excellence.

Mr. Gaurav Gupta from GLBITM, Greater Noida, successfully completed a five-day online Faculty Development Program on "Impact of Artificial Intelligence on Automated Software Development and Delivery," organized by the Department of Information Technology, Ajay Kumar Garg Engineering College, Ghaziabad, from 4th to 8th March 2025. The FDP focused on AI-driven advancements in software automation and delivery processes.

Ms. Geeta Saini from G.L. Bajaj Institute of Technology and Management, Greater Noida, successfully completed a one-week AICTE-recognized Faculty Development Programme on "Indian Knowledge System: Science and Technology," conducted by the Applied Science Department at NITTTR Chandigarh from 3rd to 7th February 2025. The program focused on integrating traditional scientific knowledge with modern educational practices.

Ms. Gurmeet Kaur from G.L. Bajaj Institute of Technology and Management, Greater Noida, successfully completed a one-week AICTE-recognized Faculty Development Programme on "Fuzzy Optimization Techniques: New Trends," conducted by the Applied Science Department at NITTTR Chandigarh from 17th to 21st February 2025. The FDP explored emerging methodologies in fuzzy-based optimization.

Ms. Rachana Singh Sisodia has attended 5-days National Faculty Development Program on Impact on Artificial Intelligence on Automated Software Development and Delivery organised by Ajay Kumar Garg Engineering College from 4.03.2025-8.03.2025 and 6-days International Faculty Development Program on Advances in Computing and IT-Revolution organised by Sharda University from 10.03.2025- 15.03.2025.
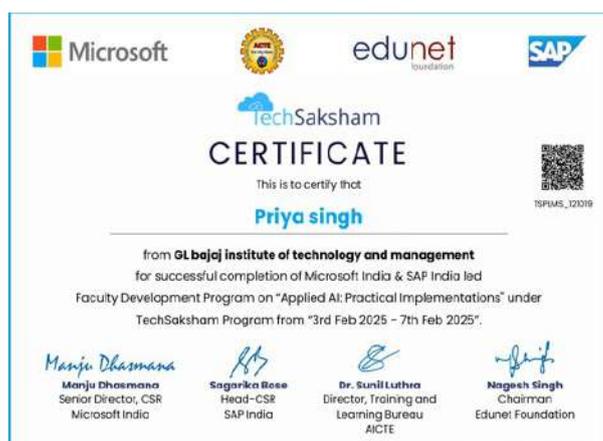
Ms. Priya Singh has participated in the Faculty Development Program (FDP) on "Applied AI: Practical Implementations", conducted under the TechSaksham Program, a joint initiative by Microsoft India and SAP India. The FDP was held from 3rd February 2025 to 7th February 2025, focusing on the practical applications of Artificial Intelligence in real-world scenarios. The program aimed to enhance faculty knowledge and teaching practices by integrating emerging AI technologies into academic and professional

Mr. Karan Siwach has participated in 5-Days International Faculty Development Program (FDP) on "Next-Gen AI and data Analytics: Strategies for the Future", organised by the Astana IT University, Astana, Kazakhstan from 31.03.2025-04.04.2025 and 40 hours through ten days Faculty Development Program on title "Data Sciences for ALL" between February 24th and March 6th, 2025 organized with the fund sanctioned to Electronics & ICT Academy NIT Warangal under the "Scheme of Financial assistance for setting up of Electronics & ICT Academies- Phase II", Ministry of Electronics and Information Technology (MeitY), Government of India, New Delhi and one week Faculty Updation Program on "Information Security and Privacy in Digital World", sponsored by Information Security Education and Awareness (ISEA) Project Phase-III, MeitY held from February 19–23 , 2025 ,organized by Department of Computer Science & Engineering, Motilal Nehru National Institute of Technology Allahabad.
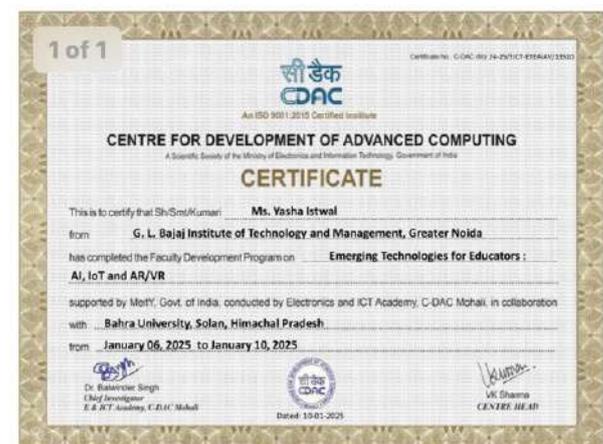
Ms. Yasha Istwal has participated in 5-days Faculty development Program on the title "Emerging Technologies for Educators: AI, IoT and AR/VR" organised by "Centre for Development of Advanced Computing" from 06.01.2025 to 10.01.2025

Ms. Sugandha Chakraverti has participated in 2-Days Faculty Development Program on "Advancing Research Excellence: A Comprehensive Faculty Development Program on Research Methodologies and Data Analysis" organized by Amity University from 23.01.2025 to 24.01.2025.

Ms. Ayesha Malik has participated in 5-Days International Faculty Development Program (FDP) on "Next-Gen AI and data Analytics: Strategies for the Future", organised by the Astana IT University, Astana, Kazakhstan from 31.03.2025-04.04.2025

Dr. Manikant Dubey from G. L. Bajaj Institute of Technology and Management, Greater Noida participated in an AICTE-recognized Faculty Development Program on "Methods of Research and Publication Ethics", organized by the Education and Educational Management Department from 17th to 21st February 2025 at GLBITM.

Mr. Tapas Kumar Mishra (Assistant Professor) actively participated in the International Faculty Development Programme (FDP) titled "Advances in Computing and IT Revolution," organized by Sharda University, Greater Noida. The FDP was held in online mode from 10th to 15th February 2025, featuring expert lectures and interactive sessions. The programme focused on the latest developments in computing technologies, the ongoing IT revolution, and their broader societal implications. In addition, Mr. Mishra also successfully participated in the FDP on "Methods of Research and Publication Ethics", from 17 Feb 2025 -22 Feb 2025, conducted by NITTTR, Chandigarh.

Mr. Adityan Gupta, Md. Sohaib Iqubal, and Ms. Kavya Goswami (Assistant Professor) participated and completed an online FDP titled "Generative AI," organized by the E & ICT Academy, IIT Kanpur, held from 3rd February to 8th February 2025. The objective of this FDP was to explore how Generative AI can automate content creation, enhance personalization, mimic human-like creativity, and support innovation across diverse domains.

Dr Uma Tomar and Ms. Kavya Goswami participated has participated in One-Week Faculty Development Programme on "Artificial Intelligence and Machine Learning" organized by E&ICT Academy IIT Guwahati held from 03rd – 08th February, 2025 in association with Galgotias University (Hub), KIET Group of Institutions (Spoke), Greater Noida Institute of Technology (Spoke), Shoolini University (Spoke), Harlal Institute of Management and Technology (Spoke) and support from

Dr. Jay Singh from G. L. Bajaj Institute of Technology and Management, Greater Noida successfully participated in an AICTE-recognized Faculty Development Program on "Methods of Research and Publication Ethics" conducted by the Education and Educational Management Department from 17th to 21st February 2025.

Mr. Adityan Gupta (Assistant Professor) of IT Department has completed the Faculty Development Program on Machine Learning with Python from 17-02-2025 to 22-02-2025, organized by E & ICT Academy, IIT Kanpur (A Joint initiative of MeitY & IIT Kanpur). This FDP focused on hands-on experience and live demonstrations of Machine Learning (ML) using Python.

Dr. Narendra Singh from G. L. Bajaj Institute of Technology and Management, Greater Noida participated in an AICTE-recognized Faculty Development Program on "Methods of Research and Publication Ethics", conducted by the Education and Educational Management Department from 17th to 21st February 2025 at GLBITM.

Ms. Anjali Kushwaha from G. L. Bajaj Institute of Technology and Management, Greater Noida participated in an AICTE-recognized Faculty Development Program on "Entrepreneurship and Innovation Management for Aatmanirbhar Bharat", organized by the Entrepreneurship Development and Industrial Coordination Department at NITTTR, Chandigarh, held from 27th to 31st January 2025.

Ms. Akanksha Singh from G. L. Bajaj Institute of Technology and Management, Greater Noida participated in an AICTE-recognized Faculty Development Program on "Methods of Research and Publication Ethics", conducted by the Education and Educational Management Department from 17th to 21st February 2025 at GLBITM.

Ms. Surbhi Agarwal from G. L. Bajaj Institute of Technology and Management, Greater Noida participated in an AICTE-recognized Faculty Development Program on "Methods of Research and Publication Ethics", organized by the Education and Educational Management Department from 17th to 21st February 2025, held at GLBITM.

Dr. Swati Raj from G. L. Bajaj College of Technology and Management, Greater Noida participated in an AICTE-recognized Faculty Development Program on "Methods of Research and Publication Ethics", conducted by the Education and Educational Management Department from 17th to 21st February 2025 at GLBITM.

Innovation

1

Effects of temperature and confinement mechanisms on the deformation of selective laser melting 3D printed SS316 using finite element analysis

Ambuj Saxena, Neeraj Mishra, Shashi Prakash Dwivedi, Shubham Sharma, N. Beemkumar, Ankit Kedia, V. Nagabhushana Rao, Parveen Kumar, Abhinav Kumar, Ehab El Sayed Massoud & Jasmina Lozanovic

https://doi.org/10.1038/s41598-025-94333-2

The confined constrained deformation behavior of SLM 3D printed SS316 has been analyzed at room temperature, 200 °C, 400 °C, 600 °C, and 800 °C temperature through static ball indentation finite element analysis technique model (load range 5 kN to 50 kN). The constrained confined deformation behavior analysis of SLM 3D printed SS316L steel specimen through static indentation process helps understand their mechanical response under localized compressive loading. This study helps to understand material plastic flow behavior at the time of low-velocity foreign object strike. Further, the results were analysed in terms of Meyer's hardness (HM), constraint factor (CF), lip height, average strain, strain hardening index (p), and indentation strength coefficient (A). The finite element analysis (FEA) results are validated with the analytical models (Johnson's Expansion cavity model (ECM) and Richmond's fully-plastic model (FPM)) and experimental results. The results revealed that the Meyer's hardness was reduced 10.20%, 21.68%, 42.07% and 66.62% at 200 °C, 400 °C, 600 °C, and 800 °C respectively, compared with room temperature. Further, the lip height was increased by 24.34%, 51.40%, 98.29% and 129.22% at 200 °C, 400 °C, 600 °C, and 800 °C respectively, compared with room temperature. The constraint factor (CF) was 2.539, 2.625, 2.711, 2.961 and 3.211 at room temperature, 200 °C, 400 °C, 600 °C, and 800 °C temperature respectively under confined constrained deformation condition. Further, the CF was increased with increase in the temperature. The yield strength of the investigated material was decreased by 8.60%, 27.08%, 55.44% and 75.45% at the 200 °C, 400 °C, 600 °C, and 800 °C respectively. Further, the compressive strength was decreased by 9.94%, 30.01%, 61.72% and 88.41% at the 200 °C, 400 °C, 600 °C and 800 °C respectively. The FEA model results show the good agreement with the experimental results with less than 5% percentage difference. This shows the good prediction capability of the developed FEA model. The constrained confined deformation behavior study on SLM 3D printed SS316L study is the prime focus of the current investigation which confirms the suitability of material under foreign objects impact conditions like aerospace and defence sector.

2

Evaluation of the mechanical properties of AlSi10Mg composites reinforced with TiB2 particles (wt%) fabricated via selective laser melting (SLM) process

Nagendra Kumar Maurya, Ranjeet Kumar Singh, Deepak Gupta, Rashmi Mishra & Jiyaul Mustafa

https://doi.org/10.1007/s41872-025-00311-y

In this study, the impact of reinforcement (TiB_2) wt% addition in AlSi10Mg on mechanical properties such as tensile strength, hardness and flexural strength fabricated via Selective Laser Melting (SLM) are carried out. Evaluation of the mechanical properties of AlSi10Mg composites reinforced with TiB2 particles (wt %) fabricated via Selective Laser Melting (SLM) are significant, particularly in industries requiring lightweight, high-performance materials. The reinforcement wt% of TiB_2 was varied up to 0.5 wt%, and its effect on the matrix material was analyzed.

The addition of TiB_2 improved the hardness, tensile strength, primarily due to the hard ceramic nature of TiB_2. The optimum level of process parameters i.e. Laser power 140 W, layer thickness of 0.03, scanning speed of 900 mm/s and scanning spacing of 0.08. results reveals that a significant improvement in mechanical properties are obtained when TIB2 is added in small quantity with matrix material. The maximum strength, hardness and flexural strength are obtained i.e. 480.52 MPa, 164.2 hv and 446.9 MPa respectively.

3

A secure and efficient identity-based RFID mutual Authentication scheme for IoT using elliptic curve cryptography

Md Ozaif, Mahfooz Alam, Suhel Mustajab, Mohd Mustaqeem, Nadeem Khan

Existing ECC-based RFID authentication protocols exhibit vulnerabilities to various attacks. A new ECC-based authentication protocol is proposed to address these issues, ensuring mutual authentication, confidentiality, and resistance to SCA. The proposed protocol minimizes computational time and enhances privacy features without additional calculations. Security and privacy comparisons with existing schemes show the improved protocol's effectiveness in mitigating threats. The study emphasizes practical implementation and detailed security analysis, highlighting the protocol's efficiency and security enhancements. Further, it discusses emerging security solutions, including encryption algorithms, secure key exchange protocols, and anomaly detection techniques, to mitigate potential risks and enhance the overall security posture of IoT and RFID systems. By understanding and addressing these security concerns, organizations and individuals can fully leverage the transformative power of IoT and RFID technologies while safeguarding sensitive data and ensuring the integrity and reliability of interconnected systems.

4

Deadline Constrained Based Load Balancing Algorithm for Batch of IoT Tasks on Fog and Edge Computing Environments

Deepak, Manoj Kumar Upadhyay, Mahfooz Alam

Fog and Edge computing have developed as critical technologies for processing data closer to its source, lowering latency, and bandwidth utilization. However, these environments have considerable hurdles in efficiently balancing loads and completing work by the deadline. Load balancing (LB) problem in Fog and Edge computing environments has been proven NP-hard. This work presents a new idea deadline constrained based load balancing (DCLB) algorithm built primarily for a batch of IoT tasks in fog cum edge computing environments. The suggested algorithm dynamically distributes workloads across processing nodes to optimize resource utilization while adhering to severe deadline constraints. The algorithm calculates the Expected Time to Compute (ETC) for each task on available nodes, prioritizing tasks based on deadlines and ensuring that the allocation of tasks to nodes that can complete them within their specified deadlines. Tasks that miss their deadlines on edge nodes are transferred to fog nodes, considering migration costs. A novel middle-task allocation technique is adopted by the REAL approach, ensuring equitable assignment of tasks among nodes and avoiding overloading. According to experimental findings, this algorithm outperforms other algorithms in terms of makespan, utilization of resources, number of tasks migration, and adherence to deadline meets. In the simulation result section, DCLB outperformed REAL by 2.5–2.8% in terms of makespan, and it outperformed other algorithms more when the number of tasks increased. With improvements of 29.53% over REAL and more than 55% over ITSLB and OLB, DCLB also continuously showed the highest proportion of tasks meeting deadlines, the least amount of task migration, and the highest resource utilization (almost 90%).

5

Design and parametric evaluation of multi cavity photonic sensors

Bishwajeet Pandey, Wan Aezwani Wan Abu Bakar, Pushpanjali Pandey, Preeta Sharan

This research aims to design and simulate photonic crystal micro pillar based cavity sensors by varying structural parameters and materials. Configurations studied are single cavity, dual cavity and tri-cavity. Parameters Evaluated are radius 0.14 μm to 0.2 μm and lattice constant 0.9 μm to 0.96 μm. The material used for investigation is Gallium Arsenide (GaAs). Multiple linear regression (MLR) is used to quantify the relationship between design parameters and sensor performance metrics, such as resonance frequency and Q-factor. The key finding is integrating simulation data with predictive modelling providing insights into optimizing sensor designs for enhanced photonic applications. This research offers a robust framework for parameter-driven sensor development, highlighting the potential for improved performance in photonic crystal-based sensors. For GaAs single cavity, MLR data shows the variability in the coefficient estimate. The standard error is 6.57340096, relatively moderate, indicating a fair level of precision in prediction. Further, an F value of 11.1143 indicates that the regression model is statistically significant, meaning that at least one of the predictors is significantly related to the Q factor.

6

Strategic Response to Organizational Crisis: A Bibliometric Approach
Nidhi Kumari, Rohit Raj, Vimal Kumar, Pratima Verma

https://doi.org/10.1111/1468-5973.70046

This bibliometric analysis explores crisis and organization using quantitative dimensions to identify complex patterns, trends and relationships within the academic literature. Understanding crises in organizations in this fast-changing world is significant. This study encompasses 40 years (1983–2023) and includes 246 journals and 363 documents, demonstrating a robust yearly growth rate of 7.42%. These publications last about 7.78 years on average, showing that the research is still important. They are very impactful, with 22.7 citations for each document, which shows the community's commitment, connected through an impressive 18,650 references and 921 author keywords. This effort by 921 authors, working on research and review articles together, helps us better understand the complex topics. It further leads to deeper understanding and highlights the importance of working together to tackle difficult problems, moving knowledge and solutions ahead.

7

Hybrid deep learning model for density and growth rate estimation on weed image dataset
Anand Muni Mishra, Mukund Pratap Singh, Prabhishek Singh, Manoj Diwakar, Indrajeet Gupta, Anchit Bijalwan

https://doi.org/10.1038/s41598-025-86357-5

Agriculture research is particularly essential since crop production is a challenge for farmers in India and around the world. 37% of the crop is impacted by invasive plants (weeds). Those unwelcome plants that interbreed with cultivated crops and decrease the purity of the crops are referred to here as weeds. A total of 2100 weed images were utilized to train the DCNN model in this study, including 500 images from the original dataset and 1600 images from the Crop Weed Field Image Dataset (CWFID), which includes broadleaf, a monocot, and dicot weeds. This research has proposed proposes hybrid Convolutional Neural Network models (HCNN) which have amalgamated the feature of the SegNet and U-Net CNN model for weed image segmentation. This work uses segmentation masks to exclude background and foreground vegetation to investigate weed growth and density estimation. To boost the identification weight of the weed leaf, furthermore, it has presented four distinct modified pooling layers and reduced the pooling layer of the classic segmentation model and loss function. According to the experimental results, our proposed algorithms achieved the best accuracy of 98.95%. The evaluation of financial misfortunes and impact due to weeds in farming is a critical perspective of considering which makes a difference in formulating suitable management methodologies against weeds.

8

Wideband DGS Slot Loaded Patch Antenna for High-Speed mm-wave 5G Applications
A. Rai, J.P. Keshari, M.L. Naidu

https://doi.org/10.21272/jnep.17(2).02019

A wideband antenna has almost or precisely the same operating parameters throughout a very large Passband. It differs from broadband antennas in that the passband is extensive, but the antenna strength and/or emission pattern do not have to remain constant across the passband. DGS refers to the faults or slots on the ground plane of microwave planar circuits. DGS has been designed to improve the performance of numerous devices and increase bandwidth. Current work presents a high-speed DGS-loaded wideband microstrip antenna that can be used in the 5G millimeter wave application in the band of frequency between 24 – 27 GHz having a return loss value of – 28.09 dB with wideband characteristic. The Ansys HFSS v15 has been used to design and measure antenna parameters. The simulation process has been done using low-cost substrate material FR4 whose dielectric constant is 4.4 and has a thickness of 0.8 mm. The designed antenna structure has dimensions of 7 mm 7 mm 0.8 mm. Both measured and simulated results are found to be similar. The gain of the proposed antenna is found to be 2.01 dB while radiation efficiency is measured to be greater than 90 % in the range of frequency (24 – 27 GHz). The designed antenna covers the 5G spectrum and effectively operates in n257, n258 and n261 bands. In this structure wideband has been achieved by making slots onto the patch antenna and a large gain has been achieved by different dimensions of slots onto the ground plane.

9 Quantum blockchain for a greener tomorrow: A survey of emerging applications
Pritam Rani, Prity Rani, Rohit Kumar Sachan

Climate change is one of the most critical challenges, requiring innovative solutions to strengthen environmental resilience. In this paper, we explore the potential of Quantum Blockchain Technology (QBT) as a novel approach to addressing climate change and fostering environmental sustainability. QBT merges the principles of quantum computing with the decentralized and secure nature of blockchain technology, offering promising avenues for revolutionizing various sectors, including energy, transportation, agriculture, and waste management. By harnessing the power of quantum mechanics and the transparency of blockchain, QBT presents opportunities for optimizing resource utilization, reducing carbon emissions, and promoting ecosystem preservation. This paper employs a Systematic Literature Review (SLR) process, covering the period from 2017 to 2024, to provide an in-depth analysis of existing literature and case studies. Through this methodical approach, we elucidate the theoretical foundations, technological advancements, and potential applications of QBT in mitigating climate change and enhancing environmental resilience. Furthermore, We discuss the applications, challenges, risks, and ethical considerations related to the adoption of QBT, along with its future prospects to ensure responsible deployment. Overall, this paper underscores the transformative potential of QBT in navigating the future towards a more sustainable and resilient world amidst the challenges posed by climate change.

Journal articles published

Name of the Faculty	Department	Title of Paper	Name of Journal	Impact Factor	Publisher	Index in Journal
Pritam Rani, Prity Rani, Rohit Kumar	CSE	Quantum blockchain for a greener tomorrow: A survey of emerging applications	Computers and Electrical Engineering	4	Elsevier	SCOPUS
A. Rai, J.P. Keshari, M.L. Naidu	ECE	Wideband DGS Slot Loaded Patch Antenna for High-Speed mm-wave 5G Applications	Journal of Nano- and Electronic Physics	1.4	Sumy State University	SCOPUS
Anand Muni Mishra, Mukund Pratap Singh, Prabhishek Singh, Manoj Diwakar, Indrajeet Gupta, Anchit Bijalwan	IT	Hybrid deep learning model for density and growth rate estimation on weed image dataset	Scientific Report	3.5	Scientific Reports	SCIE
Nidhi Kumari, Rohit Raj, Vimal Kumar, Pratima Verma	MBA	Strategic Response to Organizational Crisis: A Bibliometric Approach	Journal of Contingencies and Crisis Management	2.6/5.4	Wiley	SCOPUS
Bishwajeet Pandey, Wan Aezwani Wan Abu Bakar, Pushpanjali Pandey, Preeta Sharan	MCA	Design and parametric evaluation of multi cavity photonic sensors	Journal of Optics (India)	1.6	Springer Nature	SCOPUS
Deepak, Manoj Kumar Upadhyay, Mahfooz Alam	MCA	Deadline Constrained Based Load Balancing Algorithm for Batch of IoT Tasks on Fog and Edge Computing Environments	Iran Journal of Computer Science	4.2	Springer Nature	SCOPUS
Md Ozaif, Mahfooz Alam, Suhel Mustajab, Mohd Mustaqeem, Nadeem Khan	MCA	A secure and efficient identity-based RFID mutual Authentication scheme for IoT using elliptic curve cryptography	International Journal of Computers and Applications	4.7	Taylor & Francis	SCOPUS
Nagendra Kumar Maurya, Ranjeet Kumar Singh, Deepak Gupta, Rashmi Mishra, Jiyaul Mustafa	ME	Evaluation of the mechanical properties of AlSi10Mg composites reinforced with TiB2 particles (wt%) fabricated via selective laser melting	Life Cycle Reliability and Safety Engineering	0.8	Springer Nature	SCOPUS
Ambuj Saxena, Neeraj Mishra, Shashi Prakash Dwivedi, Shubham Sharma, N. Beemkumar, Ankit Kedia, V. Nagabhushana Rao, Parveen Kumar, Abhinav Kumar, Ehab El Sayed Massoud, Jasmina	ME	Effects of temperature and confinement mechanisms on the deformation of selective laser melting 3D printed SS316 using finite element analysis	Scientific Reports	3.8	Nature	SCI-E

1 Krishna AzithTejaGanti, Venkata and Senthilkumar, K.P. and Robinson L, Thomas and Karunakaran, S. and Pandugula, Chandrashekar and Khatana, Kavita, Energy-Efficient Real-Time Hybrid Deep Learning Framework for Adaptive Iot Intrusion Detection with Scalable and Dynamic Threat Mitigation (November 15, 2024). Proceedings of the 3rd International Conference on Optimization Techniques in the Field of Engineering (ICOFE-2024).

http://dx.doi.org/10.2139/ssrn.5077540

Since its inception, the Internet of Things (IoT) has transformed sectors with its seamless connectivity and automation capabilities. But with its blistering pace of adoption comes an even greater security challenge; IoT networks are now some of the easiest targets for cyberattacks. With static nature, high comotational cost, and non-scalable nature, the traditional intrusion detection systems (IDS) does not satisfy the requirements of modern IoT environments. To address these challenges, this paper describes the Energy-Efficient Real-Time Hybrid Deep Learning (DP) Framework for Intrusion Detection in Adaptive and Dynamic IoT Environment. This architecture combines CNNs, RNNs, and Transformers to provide high accuracy, low latency, and impeachment against false threats. We take care of the energy efficiency by using model compression and dynamic resource allocation which makes the system applicable for resource-constrained devices. These, along with real-time adaptability and explainable AI (XAI), serve to enhance usability and transparency. Experimental Results Show More Than 98.7% Average Accuracy, Less Latency and 35% Less Energy Consumption Than Existing Systems. In contrast, this framework is scalable over traditional and modern IoT

2 Shukla, Abhay and Dubey, Shail and Nithya, P. and Shankar, Bhukya and Vankayalapati, Ravi Kumar and Khatana, Kavita, Edge-Optimized and Explainable Deep Learning Framework for Real-Time Intrusion Detection in Industrial Iot (November 15, 2024). Proceedings of the 3rd International Conference on Optimization Techniques in the Field of Engineering (ICOFE-2024).

http://dx.doi.org/10.2139/ssrn.5077557

More Industry 4.0 feel free to check as well. But by their interconnected nature, IIoT systems are highly vulnerable to cyber-attacks, thereby requiring effective and interpretable intrusion detection mechanisms. We propose Edge-Optimized and Explainable Deep Learning Framework for Real-Time Intrusion Detection in Industrial IoT. To address this, we propose a framework based on a hybrid CNN-LSTM model for anomaly detection that discerns normal and abnormal network behavior on resource-constrained edge devices through model quantization and lightweight architectures. To overcome this hurdle, we implement Explainable AI approaches such as SHAP and LIME, allowing for actionable insights to be delivered that connect the dots between technical detection exposures and operational decision space. Federated Learning Federated Learning is used to improve scalability and data privacy, which allows for secure deployment across different IoT environments. Experimental results confirm that the framework outperforms the state-of-the-art and provides 98.7% accurate detections with low latency (15ms) and 30% more energy efficient than conventional methods. The framework is a considerable leap in the realm of IoT security, integrating real-time efficiency, explainability and scalability to counter the new-age sophisticated cyber threats.

3

P. De, S. Kumar and L. Singh, "IoT-Enabled Smart Helmet for Safety and Accident Detection," 2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS), Bengaluru, India, 2024, pp. 414-418.

10.1109/ICICNIS64247.2024.10823158

An intelligent helmet for the safety of the motor-cycle riders has been developed that incorporate the cutting edge technologies. The helmet has the modules like alcohol detection system having M Q-3 alcohol sensor, RFID based lock system, voice recognition system to open the helmet visor, accident detection through accelerometer which can detect sudden changes in acceleration and GSM enabled accident notification system to send alert notification to the emergency contacts. Different sensors are used in various modules to do the specific task of the modules. A prototype has been prepared by assembling different sensors, servo motor, motor, relay and microcontroller. After assembling, the circuit has been tested to check the performance of the prototype which is quite encouraging. Also, the low power consumption of the microcontroller ensure operating longer without sacrificing the performance.

4

M. Alam, Deepak, B. Pandey, S. Ahmad, M. Shahid and F. Ahmad, "Machine Learning In Cybersecurity: Opportunities and Challenges," 2024 IEEE 16th International Conference on Computational Intelligence and Communication Networks (CICN), Indore, India, 2024, pp. 663-670.

10.1109/CICN63059.2024.10847405

Machine learning (ML) has emerged as an essential tool for increasing cybersecurity defenses, with the ability to automate threat detection, identify weaknesses, and respond to attacks in real-time. Its ability to evaluate large volumes of data and adapt to changing threats makes it an essential tool for combatting modern cyberattacks. However, the integration of ML in cybersecurity introduces several challenges, including data privacy concerns, model bias, explainability, adversarial attacks, and the need for ethical governance. This paper explores the opportunities provided by ML in cybersecurity, such as improved threat intelligence, anomaly detection, and automated incident response, while critically examining the associated challenges. It proposes a framework for addressing ethical issues and securing ML models from adversarial manipulation, ensuring that ML's role in cybersecurity is both effective and responsible.

5

J. Agarwal, A. Saxena, K. Dasari, A. Dutt, S. Singhal and D. N. Sahu, "Harnessing Biomedical Signals: A Modern Fusion of Hadoop Infrastructure, AI, and Fuzzy Logic in Healthcare," 2024 7th International Conference on Contemporary Computing and Informatics (IC3I), Greater Noida, India, 2024, pp. 395-399.

10.1109/IC3I61595.2024.10829048.

Health monitoring and assessment are becoming more difficult tasks for medical professionals and hospitals due to the rising number of patients and the advent of new diseases and symptoms. Indeed, many health-based sensor technologies face significant hurdles due to the analysis of large and heterogeneous data obtained by biological signals, as well as the requirement for patient classification and disease detection. As a result, an approach is developed in this paper to address the problems with physical infrastructure utilizing Hadoop-based systems. The Fuzzy Interface System Algorithm (FISA) is combined with a four-layer model, and data transfers at these layers are accomplished by using comparable health data that has been gathered at different treatment facilities. In this type of technique, an activation function is added in the center, whose performance attempts to minimize the loss of functionalities found in biological signals. A biological signal processing tool is used to simulate the effectiveness of the proposed paradigm. According to the data, FISA operates more effectively in terms of both cost and signal strength.

6

K. Kumar, D. C. Ramasubramanian and B. Pandey, "Low Area Design and Implementation of Lightweight Encryption Algorithm on FPGA for IoT Devices," 2025 IEEE 4th International Conference on AI in Cybersecurity (ICAIC), Houston, TX, USA, 2025, pp. 1-4.

10.1109/ICAIC63015.2025.10849186

The increasing necessity for secure communication in resource-constrained platforms those found in the Internet of Things (IoT), has drawn to a key spike in demand for lightweight symmetric cyphers. However, a number of numerous algorithms and implementation are available and, selecting the best security solution for a given application is still difficult. The implementation of Lightweight Advanced Encryption Standard (LAES) algorithms on hardware is the main concern of this work which will be suited for the IoT devices. In this work LAES is implemented to satisfy the security requirements for the IoT devices. Kintex 7 FPGA (Field Programmable Gate Array) is used for the implementation, and key performance metrices including hardware area utilization are used to assess the performance. The results determine prominent improvements in accomplishing compact, area-efficient designs. There is a decrement of 73.10% in LUT consumption as compared with exiting approaches.

7

B. Pandey, N. Zhakiyev, M. S. Gaur, F. Tumenbayeva, S. Kumar and P. Pandey, "Prediction of False Data Injection Attacks in Smart Grid using AdaBoost, Deep Learning, and KNN," 2025 IEEE 4th International Conference on AI in Cybersecurity (ICAIC), Houston, TX, USA, 2025, pp. 1–4.

10.1109/ICAIC63015.2025.10849233

With the advancement and application of computing in electrical infrastructure, all traditional electrical grids are transforming into Smart Grid. Modern Smart Grid are more efficient than traditional electrical grids but also prone to cyber-attacks due to presence of computing devices and communication protocols. In this work, we are finding a better machine learning algorithm to predict false data injection attacks in smart Grid. We have taken the Smart Grid dataset from Kaggle. In our research, we used AdaBoost, Deep Learning (DL), and K Nearest Neighbor (KNN) machine learning classifier. We observed that KNN is better than Deep Learning, and AdaBoost in all parameters of accuracy, precision, recall, and f1-score.

8

A. Silwal and B. Pandey, "Design of Lightweight Decentralized Secure Communication," 2024 IEEE 16th International Conference on Computational Intelligence and Communication Networks (CICN), Indore, India, 2024, pp. 602–605

10.1109/CICN63059.2024.10847441

This research focuses on developing a Peer-to-Peer Encrypted Chat Application, offering secure, decentralized communication without reliance on centralized servers. Utilizing SSL/TLS (Secure Socket Layers and Transport Layer Security) encryption ensures the confidentiality and integrity of user data. Built with the Qt framework, the application provides a user-friendly interface for establishing encrypted connections, exchanging messages, and managing communication sessions. Another important aspect of the project is the Certificate-based authentication system which further enhancements of security by validating peers. The SSL/TLS encryption mechanism helps to prevent unauthorized access by ensuring that the messages exchanged between peers are encrypted and that only the intended recipients can read the communication. It also protects against Eavesdropping as in a P2P network, the data travels through various intermediate nodes. The TLS encryption ensures that even if an attacker intercepts the data somehow, the captured data cannot be deciphered. Another advantage of this level of security is that data integrity is maintained throughout the system, The communication network remains reliable, and the system remains tamper-proof. This project also demonstrates the ability of peers to connect and communicate without relying on centralized servers and ensures scalability as more users join. A special emphasis is given to its decentralized aspect ensuring benefits such as fault tolerance, the ability to handle high volumes of traffic, and high resilience. We have also ensured intuitive user interface design created with the help of the Qt framework ensuring seamless interactions for even the users that might not have any technical expertise.

9

A. Dixit, A. K. Gupta, G. Kaur, M. Jain, R. K. Pandey and A. Sharma, "Enhancing Voting System Security and Accessibility through Biometric Authentication and IoT Integration," 2024 1st International Conference on Advances in Computing, Communication and Networking (ICAC2N), Greater Noida, India, 2024, pp. 1460-1465.

10.1109/ICAC2N63387.2024.10895036

The accessibility and dependability of voting systems have the potential to be significantly improved by technological improvements. In order to address the problem of providing voters with a reliable and secure identity, the research suggests combining biometric authentication with technology that is connected to the Internet of Things (IoT). Voters may have their identities validated in real time at voting locations using Internet of Things sensors if the devices record distinctive biometric characteristics such as fingerprints, iris patterns, or facial features. Through the utilization of biometric data, secure QR codes, and voter identification cards, this type of multifactor authentication seeks to enhance the level of security. By concealing real biometric data while yet allowing for precise identification matching, biometric template protection can be of assistance in addressing privacy concerns. In order to accommodate a huge number of votes and a variety of users, this system has been developed to be both user-friendly and scalable. The proposed voting system has the goals of reducing the number of instances in which voters pass themselves off as other people, improving accessibility for people of all demographics, and creating a voting environment that is more transparent and trustworthy.

10

V. S. Reddy, P. Pavithra, R. Mishra, S. Agrawal, M. K. Sharma and L. R, "Machine Learning in Workflow Optimization," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-5

10.1109/IC3TES62412.2024.10877591

This paper delves into the integration of machine literacy algorithms to enhance effectiveness, productivity, and decision-making in workflow operations. By using prophetic analytics and real-time data processing, machine literacy models can identify patterns and prognosticate implicit backups, enabling visionary adaptations and resource allocation. This exploration focuses on the operation of supervised and unsupervised literacy ways to streamline complex workflows, reduce functional costs, and ameliorate overall performance. crucial case studies from manufacturing, healthcare, and logistics demonstrate the practical benefits of these technologies. The findings punctuate the transformative eventuality of machine literacy in creating adaptive and intelligent workflow systems that can stoutly respond to changing conditions and demands. This study contributes to the growing body of knowledge on the crossroads of machine literacy and workflow optimization, offering perceptivity and strategies for perpetration in different functional surroundings.

11

M. S. B. Panicker, R. Mohandas, S. Hariharan, K. N. Devi, M. S. K. Chaitanya and R. Mishra, "A Virtual Assistance for Visually Impaired People to Recognize Fabric Pattern and Color Using Human Computer Interaction Logic," 2024 9th International Conference on Communication and Electronics Systems (ICCES), Coimbatore, India, 2024, pp. 01-08.

10.1109/ICCES63552.2024.10860143

Modern advancements in technology have paved the way for innovative solutions to assist visually impaired individuals in their daily lives. This study presents a virtual assistance system designed to recognize fabric patterns and colors using a combination of deep learning and human-computer interaction techniques. The system employs high-quality image acquisition methods, bilateral filtering, and histogram equalization to preprocess images, enhancing their quality for subsequent analysis. Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs) are integrated to form a Hybrid Fabric Pattern Recognition Network (HFPRN) that accurately identifies fabric patterns. Additionally, the system utilizes RGB color space conversion for precise color detection. Voice command capabilities via Amazon Alexa and tactile feedback mechanisms further enhance user interaction. Experimental results demonstrate the proposed system's high accuracy, with the HFPRN achieving 97% accuracy in fabric pattern recognition and 95% accuracy in color detection. This comprehensive solution significantly improves the autonomy and quality of life for visually impaired individuals by providing real-time, accurate feedback on fabric patterns and colors.

12 Sharma, C., Sachan, S., Chowdhury, S., Saxena, R., Saxena, A., Jasim, L.H. (2025). Advanced-Data Analytics for Household Power Consumption Forecasting Using CNN-LSTM Hybrid Network. In: Wen, F., Liu, H., Wen, H., Wang, S. (eds) Proceedings of 2024 International Conference on Smart Electrical Grid and Renewable Energy (SEGRE 2024). SEGRE 2024. Lecture Notes in Electrical Engineering, vol 1336. Springer, Singapore.

10.1109/ICAIC63015.2025.10849186

The motivation for employing time series models stems from their superior performance compared to analysts' long-term wage forecasts, especially for small firms. This study underscores the challenges financial commentators face in making accurate predictions. The primary objective is to evaluate the effectiveness of time series models in forecasting household electricity consumption. This paper presents an advanced data analytics approach using a Convolutional Neural Network-Long Short-Term Memory (CNN-LSTM) hybrid network. Data were collected at a one-minute sampling rate over nearly four years, focusing on the Global Active Power variable. The CNN-LSTM hybrid network leverages the strengths of both CNNs and LSTMs to enhance prediction accuracy. The results demonstrate the network's potential in providing reliable forecasts of household energy consumption, offering valuable insights for efficient energy management and planning. Exploratory analysis using line plots and histograms is conducted to understand data distributions and usage patterns over the four-year period.

13 I. Ahamad, N. Kumar, M. A. Siddiqui, B. Prasad Joshi, M. Alam and A. Singh, "Load Frequency Control in multi area Power System using different Control Schemes," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-6.

10.1109/IC3TES62412.2024.10877655

Power system networks depend on load frequency control (LFC) to maintain load stability. The principal aim of LFC is to regulate generator output in response to fluctuations in tie-line power and system frequencies, encompassing frequency restoration and power exchange with neighbouring areas. This study examines the LFC for a three-area reheat thermal system with generation rate constraints. The results of load frequency have been obtained different controllers like fuzzy cascaded PID, Integral double derivative (IDD), Model Predictive control (MPC) and PID. The Big Bang Big Crunch is employed to enhance the performance of designed controllers except MPC. The controller's responsiveness has been checked using step load perturbation. A comparative study has also been performed on the basis of settling time, overshoot, and undershoot criterion. It is evident form results that the fuzzy cascaded PID controller outperforms other controllers for settling time, except for a few responses that display significant oscillations. Hence, in comparison to other controllers, the fuzzy cascaded PID controller exhibits superior performance in order to keep a balance in generation and load.

14 A. K. Varshney, A. K. Mishra, S. Agarwal, A. Garg, S. Das and S. Tripathi, "Changing Aspects: Examining Financial Market Forecasting via Textual Representation - A Critical Evaluation," 2024 1st International Conference on Advances in Computing, Communication and Networking (ICAC2N), Greater Noida, India, 2024, pp. 1127-1132.

10.1109/ICAC2N63387.2024.10895314

Social media news distribution has a big impact on the financial markets and causes noticeable adjustments. Deep learning-based natural language processing (NLP) methods have recently demonstrated remarkable potential in the analysis of these variations. However, comprehensive textual data must be integrated with financial market information in order to conduct an effective analysis of investor behavior. This research examines more than 150 publications on behavioral finance with an emphasis on combining NLP methods with market data analysis to support financial decision-making. This analysis, in contrast to others, focuses on computer science and artificial intelligence applications, emphasizing the integration of diverse data to assess investor behavior. The paper looks into different approaches to text representation, information retrieval, and sentiment analysis using a variety of data streams. It also looks at the routes that research in text mining and deep learning applications for financial markets is taking right now and in the future. These applications include forecasting, correlation analysis, and recommendation algorithms for a variety of asset classes, such as equities, Forex, and cryptocurrencies. The paper highlights the potential of integrating market data with advanced natural language processing (NLP) to augment our comprehension of investor behavior and streamline financial decision-making procedures by outlining several tactics and methodologies.

Cloud computing is a popular technology that offers virtualized computer resources based on the internet. The performance utilization of the cloud resources depends mainly on the load-balanced resource allocation schemes. Load balancing is the distribution of the dynamic workload among cloud resources maintaining the load shares onto resources to ensure that no resource is overloaded or underloaded. Therefore, an efficient load-balancing strategy improves services and resource utilization. In this paper, an artificial gorilla troop optimization (GTO) based metaheuristic is proposed for load balancing of workflow tasks onto VMs in cloud systems. This method mimics the social behavior of the group of gorillas. The experimental results exhibit the superior performance of GTO on resource utilization than the PSO algorithm for the same objective and environment.

Conference articles published

Name of the Faculty	Department	Title of Paper	Name of conference	Publisher	Index in Journal
Venkata Krishna AzithTejaGanti, K.P. Senthilkumar, Thomas Robinson L, S. Karunakaran, Chandrashekar Pandugula, Kavita	AS	Energy-Efficient Real-Time Hybrid Deep Learning Framework for Adaptive Iot Intrusion Detection with Scalable and Dynamic Threat Mitigation	3rd International Conference on Optimization Techniques in the Field of Engineering (ICOFE-2024)	SSRN	—
Abhay Shukla, Shail Dubey, P. Nithya, Bhukya Shankar, Ravi Kumar Vankayalapati, Kavita Khatana	AS	Edge-Optimized and Explainable Deep Learning Framework for Real-Time Intrusion Detection in Industrial Iot	3rd International Conference on Optimization Techniques in the Field of Engineering (ICOFE-2024)	SSRN	—
Paramita De, Shubham Kumar, Lakshita Singh	IT	IoT-Enabled Smart Helmet for Safety and Accident Detection	2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS)	IEEE	SCOPUS
Mahfooz Alam, Deepak, Bishwajeet Pandey, Shabeer Ahmad, Mohammad Shahid, Faisal Ahmad	MCA	Machine Learning In Cybersecurity: Opportunities and Challenges	2024 IEEE 16th International Conference on Computational Intelligence and Communication Networks (CICN)	IEEE Xplore	—
Jyoti Agarwal, Anu Saxena, Kavitha Dasari, Amit Dutt, Shilpi Singhal, Dilip Narayan Sahu	MCA	Harnessing Biomedical Signals: A Modern Fusion of Hadoop Infrastructure, AI, and Fuzzy Logic in Healthcare	2024 7th International Conference on Contemporary Computing and Informatics (IC3I)	IEEE	SCOPUS
Keshav Kumar, Dr Chinnaiyan Ramasubramanian, Bishwajeet Pandey	MCA	Low Area Design and Implementation of Lightweight Encryption Algorithm on FPGA for IoT Devices	2025 IEEE 4th International Conference on AI in Cybersecurity (ICAIC)	IEEE Xplore	SCOPUS
Bishwajeet Pandey, Nurkhat Zhakiyev, Madhu S Gaur, Fariza Tumenbayeva, Sanjeev Kumar, Pushpanjali Pandey	MCA	Prediction of False Data Injection Attacks in Smart Grid using AdaBoost, Deep Learning, and KNN	2025 IEEE 4th International Conference on AI in Cybersecurity (ICAIC)	IEEE Xplore	SCOPUS

Conference articles published

Name of the Faculty	Department	Title of Paper	Name of conference	Publisher	Index in Journal
Aditya Silwal, Bishwajeet Pandey	MCA	Design of Lightweight Decentralized Secure Communication	2024 IEEE 16th International Conference on Computational Intelligence and Communication Networks (CICN)	IEEE Xplore	—
Ashish Dixit, Avadhesh Kumar Gupta, Gurmeet Kaur, Mradul Jain, Rahul Kumar Pandey, Anubha Sharma	AS	Enhancing Voting System Security and Accessibility through Biometric Authentication and IoT Integration	2024 1st International Conference on Advances in Computing, Communication and Networking (ICAC2N)	IEEE Xplore	SCOPUS
V Srinivasa Reddy, P. Pavithra, Rashmi Mishra, Shital Agrawal, M. K. Sharma, Lakshmikanth R	AS	Machine Learning in Workflow Optimization	2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES)	IEEE Xplore	—
M.S Bravishma Panicker, R. Mohandas, Shanmugasundaram Hariharan, K. Nirmala Devi, M.S.K. Chaitanya, Rashmi Mishra	AS	A Virtual Assistance for Visually Impaired People to Recognize Fabric Pattern and Color Using Human Computer Interaction Logic	2024 9th International Conference on Communication and Electronics Systems (ICCES)	IEEE Xplore	SCOPUS
Chandani Sharma, Smriti Sachan, Sohini Chowdhury, Rini Saxena, Archana Saxena, Laith H. Jasim	ECE	Advanced-Data Analytics for Household Power Consumption Forecasting Using CNN-LSTM Hybrid Network	2nd International Conference on Smart Electrical Grid and Renewable Energy (SEGRE 2024)	Springer Nature	SCOPUS
Isarar Ahamad, Nagendra Kumar, Mohammad Atif Siddiqui, Bhagawati Prasad Joshi, M Alam,	EEE	Load Frequency Control in multi area Power System using different Control Schemes	2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES)	IEEE Xplore	SCOPUS
Ajit Kumar Mishra, Surbhi Agarwal, Ankit Garg, Sanghamitra Das, Swati Tripathi	MBA	Changing Aspects: Examining Financial Market Forecasting via Textual Representation - A Critical Evaluation	1st IEEE International Conference on Advances in Computing, Communication and Networking (ICAC2N 2024)	IEEE Xplore	SCOPUS
Mohammad Shahid, Faraz Hasan, Faisal Ahmad, Mahfooz Alam, Mohammad Sajid, Maria Lapina	MBA	Artificial Gorilla Troop Optimization Based Load Balancing of Workflow Tasks in Cloud Environment	2024 Ivannikov Ispras Open Conference (ISPRAS)	IEEE Xplore	SCOPUS

RESEARCH FACILITIES AVAILABLE IN COMPUTING DEPARTMENTS
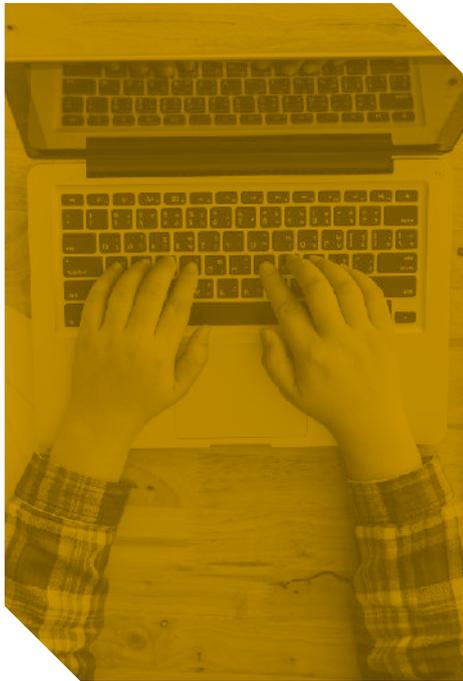
GL Bajaj Institute of Technology and Management offers comprehensive instructions in the mathematical and computational underpinnings of computer science and engineering. It is a dynamic and forward-thinking academic unit focusing on applied mathematics, computer science, and scientific engineering applications. The department is committed to imparting deep knowledge and skills to its students in cutting-edge computational techniques for real-world science and engineering applications to meet industry demand. With experienced faculty and state-of-the-art resources, we strive to nurture the next generation of professionals and drive advancements in this rapidly evolving field.

1. **NVIDIA DGX A – 100 Server Access**

2. **Listing for E-resources**
   - IEEE Xplore Digital Library -
   - https://ieeexplore.ieee.org/browse/periodicals/title
   - Springer - https://link.springer.com/
   - EBSCO Business Source ELite - https://www.ebsco.com
   - Science Direct-https://www.sciencedirect.com/
   - Perlego - https://www.perlego.com/
   - (Please click on the link, a video explaining how to access and manage the account: https://share.vidyard.com/watch/QYaxSrnFppNC4FyF2Pw7fA?)
   - DELNET - https://discovery1.delnet.in/
   - MyLoft - https://app.myloft.xyz/user/login?institute=ck4o420t2s5ya099816x5aby9
   - Knimbus - https://glbitm.knimbus.com/user#/home
   - NDL - https://ndl.iitkgp.ac.in/
   - NPTEL - https://nptel.ac.in/courses

3. **Turnitin: Plagiarism Detection Software**

4. **Research Tools: Anaconda, Scilab, WEKA tool, Draw.io, CISCO Packet Tracer, Wireshark, ORACLE, JDK, Linux, Windows OS, Apache.**

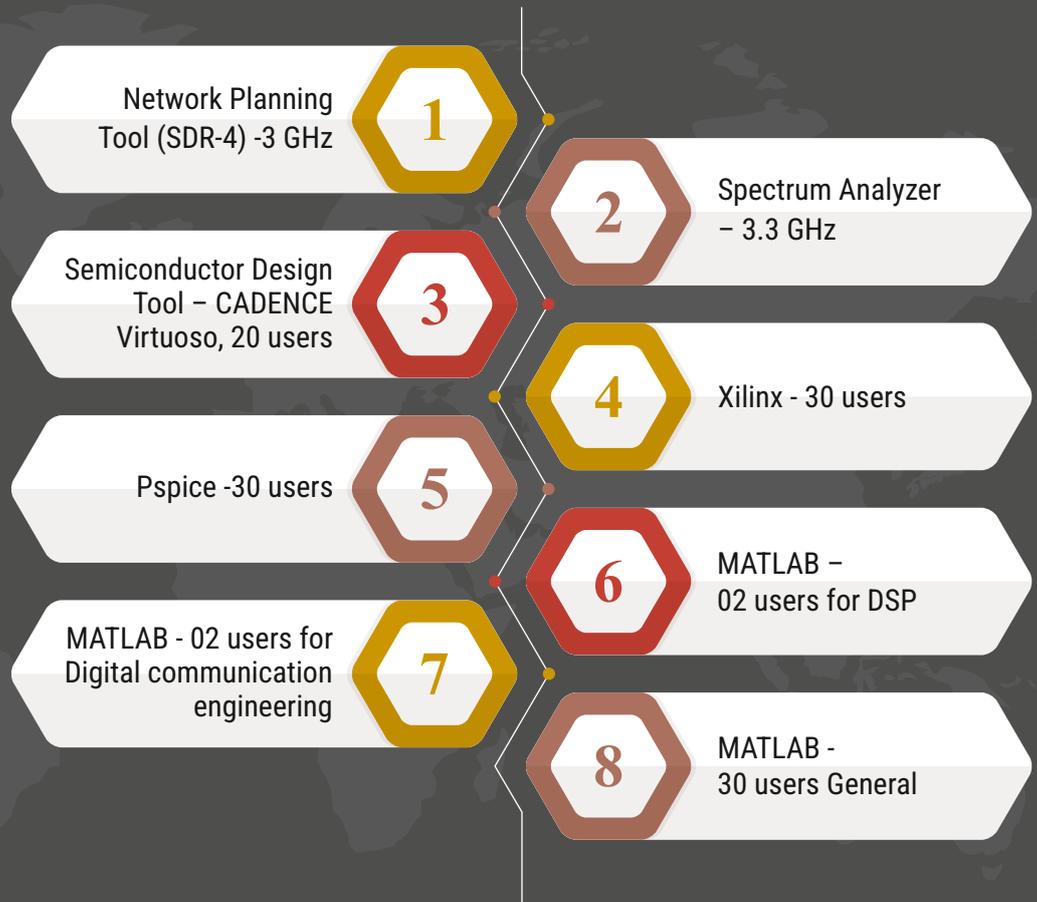# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ECE department was established in the year 2005 with an intake of 60 students. It has progressed to an intake of 180 due to our best support and quality TLP. The whole world is looking for our product in every field of day-to-day needs. Electronic products have completely changed the needs of this universe. Engineering is a rigorous part of the verification process which yields quality products. The application of electronics engineering is diversified. Medical applications are lifesaving elements for all the creatures on this earth. Therefore, accuracy plays a vital role in these applications. We can refer to many such an application as aeronautics, robotics in surgery, welding, automation, etc. Many application of processing needs the highest accuracy hence again verification is on priority. Taking many such an application as a challenge, the department of ECE has started a critical task of learning with an initiative of project/research-based learning.

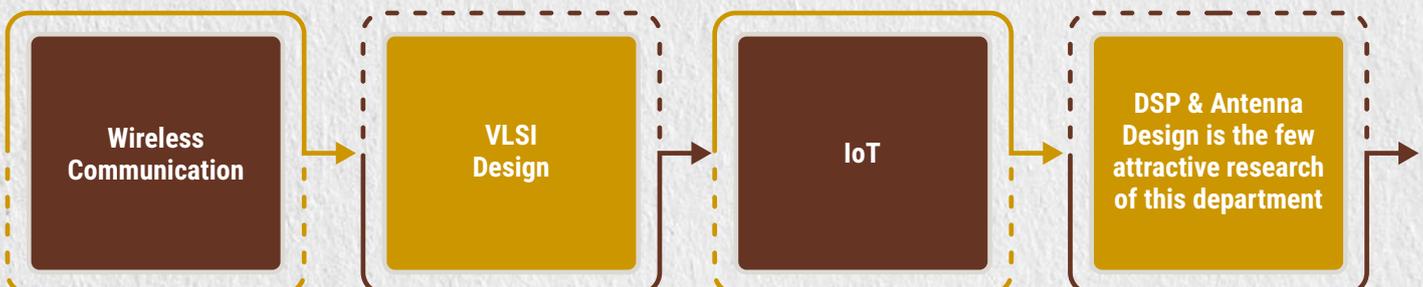Research-based learning needs progressive and computational environments to support research.

RESEARCH FACILITIES

IN THE DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

1. Network Planning Tool (SDR-4) -3 GHz
2. Spectrum Analyzer – 3.3 GHz
3. Semiconductor Design Tool – CADENCE Virtuoso, 20 users
4. Xilinx - 30 users
5. Pspice -30 users
6. MATLAB – 02 users for DSP
7. MATLAB - 02 users for Digital communication engineering
8. MATLAB - 30 users General

Provision of Research Tools facilitated numerous research papers in the department. At present, Total 135 research papers have been published during the last 05 years and many are under review. The department holds a very effective cadre ratio with good researchers.

17 Ph. D.s from very reputed organizations are the research strength of the ECE department. **The area of research strength of this department is as:**

- Wireless Communication
- VLSI Design
- IoT
- **DSP & Antenna Design is the few attractive research of this department**

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

The Department of Electrical and Electronics Engineering at GL Bajaj Institute of Technology & Management was established in the year 2005 with a vision to impart quality education and provide competent professionals to fulfill the needs of industry and society in a global perspective for the sustainable development of industry and society.
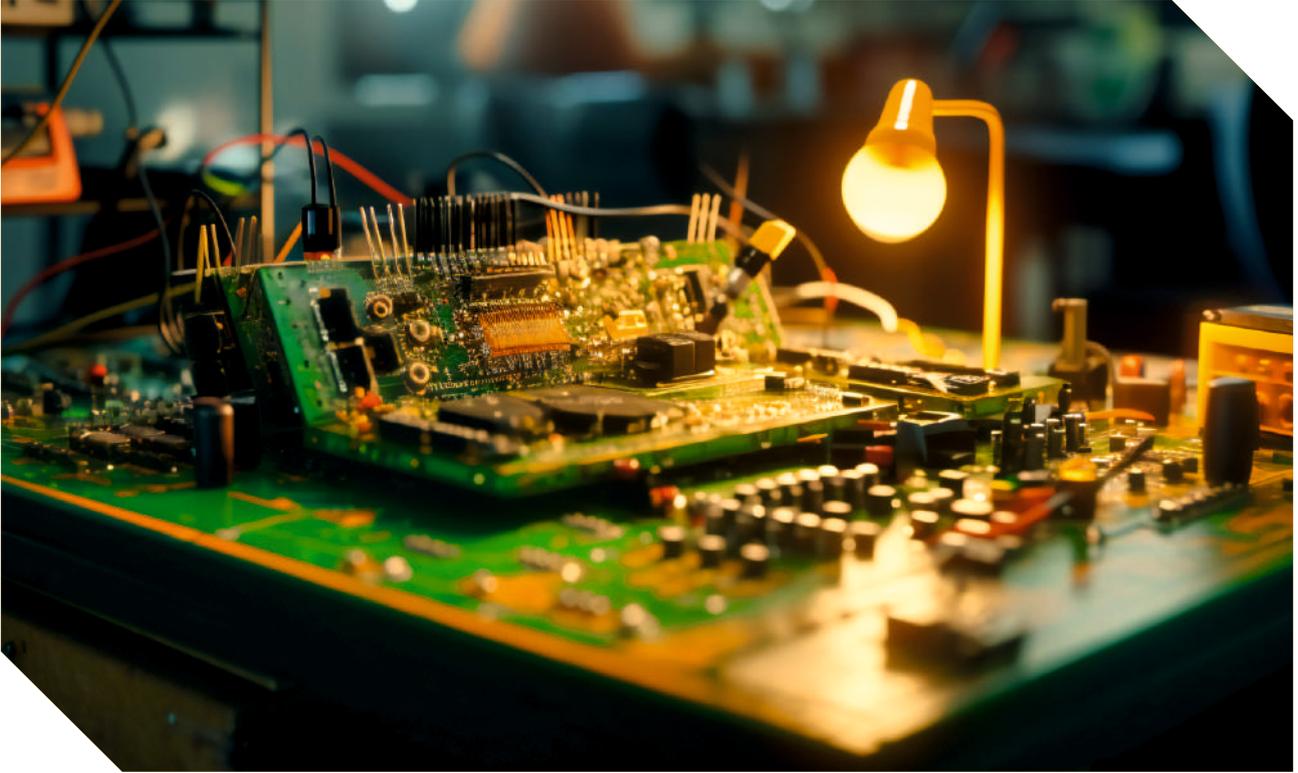
RESEARCH FACILITIES
IN THE DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

MAJOR EQUIPMENT'S

3-D Printer, EV Testing equipment

PLC Wiring Panel, HMI with Enclosures

VFD Panel with motor

DC Regulated Power Supply, DSO

1-3 phase electrical machines with different load arrangements, etc

MAJOR LABS

Workshop Lab

Automation Lab, Software Lab

Power System Lab, Power Electronic Lab

Analog & Digital Electronics Laboratory

Electrical Machine Laboratory, Instrumentation Laboratory

Microprocessor Lab

EV Lab, Idea Lab

DEPARTMENT OF MECHANICAL ENGINEERING

The Department of Mechanical Engineering at GL BAJAJ Institute of Technology & Management, Greater Noida was established in 2005. The department offers 4 year B. Tech. Program in Mechanical Engineering. The department provides a strong foundation for the overall growth and development of the students by enriching them with technical, analytical, quantitative, reasoning, ethical & and linguistic qualities. The department has a pool of well-qualified and experienced faculty having backgrounds from IIT, NIT, and other nationally and internationally recognized institutes in various research areas including Computational Fluid Dynamics, FEM, Rapid prototyping, Smart materials, Combustion, etc.

The following research facilitates have been associated with the department, It would be very beneficial for all of us to club with a central research facility.
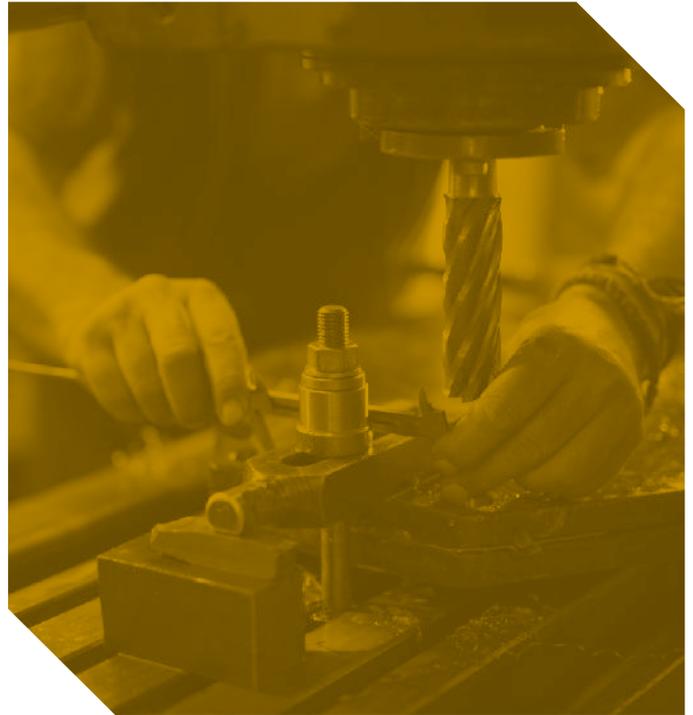
RESEARCH FACILITIES
IN THE DEPARTMENT OF MECHANICAL ENGINEERING

FACILITIES

Conventional Universal testing machine-400kN	Robotic Milling machine
Rockwell hardness testing machine	Robotic welding machine
Impact testing machine	CNC lathe machine
Torsion testing machine	CNC milling machine
Fatigue testing machine	Additive manufacturing set-up (3D printers)
Stir-casting setup	Muffle furnace
Double disc polishing machine	Pallet making machine

Glimpses of
RESEARCH FACILITIES / LABS

CSE / ACSE

EEE

ABB Centre for Robotic Welding

Glimpses of RESEARCH FACILITIES / LABS

BMW Skill Next Automotive Learning Centre

SEIMENS Centre for Mechatronics and Industry 4.0

SEIMENS Centre for Mechatronics and Industry 4.0

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