# MACET MYSTICA



# MAULANA AZAD COLLEGE OF ENGINEERING & TECHNOLOGY

## EDITORIAL

Student Centred learning have been proven to be more effective than teacher centred teaching process. This system of teaching enables students to build a sense of involvement in decision making and making them lead as they themselves become the directors of their projects.

Encouraging students to ask questions is another important tool of student centric environment. The process of asking questions help students to realize others ideas, evaluate their own progress, monitor learning process and arouse curiosity and interest on the topic.

The teaching learning process needs to see and implement these changes as the quotation goes, it is better to think of education as "a fire to be kindled as opposed to a vessel to be filled".

EDITOR

SAIMA FARZEEN

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# Power of Data Structure & Algorithm

*Asst. Prof. Mazhar Eqbal, CSE Department*

Data structures play a crucial role in various aspects of software development and computer science. Having a solid understanding of data structures can greatly enhance your skills as a programmer and make you more attractive to potential employers. Here are some ways in which data structure knowledge can help you in getting jobs:

1. **Technical Interviews:** Many companies, especially in the field of software engineering, include data structure and algorithm questions in their technical interviews. By having a strong understanding of data structures, you'll be able to solve these questions more efficiently, showcase your problem-solving abilities, and increase your chances of securing a job offer.

2. **Efficient Problem Solving:** Data structures provide efficient ways to organize and manipulate data. They allow you to store, retrieve, and process information in optimized ways, which is crucial for developing efficient algorithms and solving complex problems. Employers value candidates who can develop efficient and scalable solutions, and a solid grasp of data structures can demonstrate your ability in this regard.

3. **Performance Optimization:** Understanding data structures enables you to analyze the time and space complexity of algorithms. This knowledge helps you make informed decisions about choosing the most suitable data structures for specific tasks, which can significantly improve the performance of your software. Employers often seek candidates who can optimize code and design efficient systems, and proficiency in data structures is essential for achieving these goals.

4. **Real-world Application Development:** Data structures are fundamental building blocks used in various software applications. Whether you're developing web applications, databases, mobile apps, or any other type of software, knowing how to leverage data structures appropriately can enhance the design and functionality of your applications. This expertise makes you more versatile and valuable to potential employers.

5. **Collaboration and Teamwork:** Understanding data structures enables you to communicate effectively with other developers and understand their code more easily. When working on collaborative projects, being familiar with commonly used data structures facilitates seamless integration and cooperation with your teammates. This skill is highly valued in a team-oriented work environment.

Overall, a strong understanding of data structures demonstrates your technical competence, problem-solving abilities, and the potential to write efficient code. It enhances your chances of success in technical interviews, improves your performance as a developer, and makes you a more desirable candidate for a wide range of job opportunities in the software industry.

# "10 AI Amazing Tools" Makes Your Work Easy

*Zaffar Abbas, CSE Department*

1. **Lexica.art** - is a digital art generator that combines blockchain technology with generative art and artificial intelligence. It aims to create unique and collectible digital art pieces called "Lexica." Each Lexica artwork is generated using complex algorithms and AI models, resulting in intricate and visually captivating designs.

2. **Super MEME** - is a platform and community dedicated to the creation, sharing, and enjoyment of internet memes. It embraces the humor and cultural significance of memes and provides a space for meme enthusiasts to engage, collaborate, and explore the world of viral content.

3. **Mubert.com** - is an innovative platform that harnesses the power of artificial intelligence (AI) to create and stream dynamic, algorithmically-generated music. It combines cutting-edge technology with a deep understanding of music theory to deliver a unique and immersive audio experience.

4. **Replicate.com** - makes it easy to run machine learning models in the cloud from your own code. You can run open-source models, or **run your own public and private models**. One of the best model of this is used for "Image Restoration".

5. **NVIDIA Canvas** - is a software application developed by NVIDIA, a leading technology company known for its graphics processing units (GPUs) and artificial intelligence (AI) technologies. NVIDIA Canvas is designed to assist digital artists and designers in creating artwork by utilizing AI-based tools. It can turn your simple brush strokes into a realistic landscape image.

6. **Kaiber** - is a video generation engine that allows you to transform your ideas into **AI** generated videos using your own images or text descriptions.

7. **Descript.com** - is a web-based platform that offers a range of audio and video editing tools, transcription services, and collaborative features. One of the standout features of Descript.com is its advanced transcription capabilities. The platform uses automatic speech recognition (ASR) technology to transcribe audio and video files into text. Users can then edit the text transcript as if they were editing a document, and the changes are automatically reflected in the corresponding media. This allows for quick and easy editing of spoken content, eliminating the need for manual timecode-based editing.

8. **Lumalabs.AI** - is a new way to create incredible lifelike 3D with AI using your iPhone. Easily capture products, objects, landscapes and scenes wherever you are. From your captures create cinematic product videos, impossible camera moves for TikTok, or just relive the moment.

9. **Nerfstudio** – You can capture anything in 3D using this AI tool with Nerfstudio. It works for Android phones.

10. **Uberduck** – You can turn your lyrics into a final outcome using this AI tool. You can generate your lyrics using chatGPT.

# FDPs / Research Papers

## ECE Department

**Mr. Md. Nadeem Enam**

- Participated in Webinar "*Latest Trends in Electronic Warfare & Radar Systems (Focused on Drone & UAV Applications)*" organized by IETE Hyderabad on 28th May 2023.
- Participated in Webinar on "*Industry-Academia Interaction with Decathlon Sports India*" organized by Innovation Lab Leader, 9th May 2023.
- Successfully Completed "*Create Computer Vision Solutions with Azure Cognitive Services*" conducted by Microsoft, on 9th June 2023.
- Successfully Completed "*Monitor & Troubleshoot an IoT Solution by using Azure Monitor*" conducted by Microsoft, on 29th June 2023.
- Completed FDP on "*Data Science & Engineering*" organized by NITTTR, Kolkata from 5th June to 9th June 2023.
- Participated in 2 days online workshop on "*Foundations of Deep Learning & its Applications*" organized by VIT, Chennai, from 19th June to 20th June 2023.
- Participated in 2 days online workshop on "*Data Analytics & Machine Learning Through Zero Coding*" organized by VIT, Chennai, from 26th June to 27th June 2023.
- Participated in 4 days online workshop on "*Advanced Technologies (AWS, AR/VR, Block Chain, Ethical Hacking)*" organized by C-DAC, Patna & ATC C-DAC, from 23rd June to 26th June 2023.

**Shahid Aziz**

- Presented the paper entitled "Performance Evaluation of Recurrent Neural Networks – LSTM AND GRU For Automatic Speech Recognition" through online-mode in the International Conference on Computer, Electronics and Electrical Engineering and their Applications (IC2E3-2023), held from 8th to 9th June, 2023 at National Institute of Technology Uttarakhand, India.
- Received an invitation for Technical Reviewer for the IEEE International Conference on Artificial Intelligence in Engineering and Technology (IICAIET 2023), to be held in Malaysia from 12th -14th September 2023.

## Civil Engineering Department

Attended FDP on Commentary IS: 456-2000 with expected modification in the Forthcoming Revision organised by NITTTR Kolkata from 12th June 2023 to 16th June 2023.

- **Sarfraz Akhter**
- **Zeeshan Farooque**

## Mechanical Engineering Department

**One week online FDP Course** on "*Role of Technical Institutions in Community Development*" from 08 to 12 May, 2023 has been completed by:

- Dr. Syed Shahbaz Anjum
- Dr. Md Reyaz
- Mr. Syed Moazzam Hussain
- Mr. Md Shabbeer Ansari
- Mr. Ali Nezam
- Mr. Quaiser Suhail
- Ms. Saima Farzeen
- Dr. Naushad Hasin Khan
- Mr. Kashif Faridi
- Mr. Md Taslim Raza
- Mr. Firoz Alam
- Mr. Md Irshad Alam Ansari
- Mr. Md Mojahid

## Computer Science & Engineering Department

**Zaffar Abbas**

- Participated in 5 Days Online International FDP on "Data Analyst" organized by Andhra Pradesh State Skill Development Corporation (APSSDC) in Collaboration with ExcelR from 19th June 2023 to 23rd June 2023.

# News Update

## New Courses Launched MCA and Diploma Engineering

✓ Introduction of Master of Computer Application Course (MCA) from the Session 2023 has been started. MCA is a two Years Professional Post Graduate Program for the candidates who want to make a fantastic career in the world of Computer Application. This course is affiliated to Aryabhatta Knowledge University (AKU), Bihar and Approved by AICTE, New Delhi, Govt. of India.



**ADMISSION OPEN**
SESSION: 2023-24

✓ Introduction of Diploma Engineering from the Session 2023 has been started. This course is affiliated to State Board of Technical Education, Bihar and Approved by AICTE, New Delhi, Govt. of India. The aspirants willing to pursue a career in Diploma Engineering after $10^{th}$ will now have the chance to take admission in Diploma in following branches:

- **Diploma in Civil Engineering**
- **Diploma in Computer Science**
- **Diploma in Electrical Engineering**

# Mathematics: The God's Order

*Mohammad Fahad Faroghi, ME, 2019 Batch*

Mathematics is the beauty of this universe which tends to eternity. It is not about numbers, neither about patterns nor about algorithms rather mathematics is the way God has chosen to make up the existence of reality.

The symmetry of human body, the cycle of day and night, the momentum of planets, the production of matter, the death of a subject, the frequency of a heart, the vibration of atoms, the mechanics of waves, the presence of ether, the space-time proportionality, the topology of universe, and **tell me a place where you did not find Mathematics?**

*"Mathematics is a sense to search the past, to live the present, and to plan the future. It is the language of the universe and a concept of God".*

History upto present is classified into various Age, and mathematics has been evolving between humans since that time. The Stone Age recorded the simple **counting systems** to keep track of resources. The Bronze and Iron Age rose with calculating **volume and weight of metals**. The Classical Age is accounted for discovery in **geometry**. The Middle Age noted its significant contribution in the field, including **algebra, Arabic numerals, mechanics, astronomy**, etc. The Renaissance period discovered the most fundamental **calculus**. Then came the Age of Exploration which led to **advanced trigonometry and navigation**. The Industrial Age led to machine inventions, **advanced mechanics, statistics and probability theory**, etc. Finally, the Atomic Age has introduced atomic and sub-atomic particles with the discovery of emerging field i.e. **Quantum Physics.**

"Mathematics is the language in which God has written the universe"- *Galileo Galilee*. **But why God chose Mathematics to create everything?**

In search of the answer, a Physicist, *Shad Azmi* stated that- *"Language is the structure of reality. Mathematics is a language or, all languages are algebraic structures".*

Briefing the above statement, God intended to create the reality and reality got structured by language and ultimately all languages are algebraic structures. **The reality came into existence by Algebra (originates from Arabic Al-Jabr i.e. "the reunion of broken parts").**

From finding the area $A = \pi r^2$ upto the series

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left( a_n \cos\frac{n\pi x}{L} + b_n \sin\frac{n\pi x}{L} \right)$$

we are strengthening the existence of reality. These are not the equations, is rather the language to define the nature.

Mathematics is about observing and the more you observe the more deep you dive into the reality. And at this very point you did not read this article, rather you felt the beauty of mathematics.

# GeekyMACET

## Fostering Collaboration, Innovation, and Growth

*Md. AL Fahad Ahmad, CSE, 2022 Batch*

At Maulana Azad College of Engineering and Technology (MACET), the coding culture will play a pivotal role in shaping the mindset and skills of future software developers. Recently, a coding club named GeekyMACET has been formed by the students, with the aim of promoting collaboration, innovation, and growth. In this article, we will explore the significance of a healthy coding culture at MACET and discuss strategies employed by GeekyMACET to foster collaboration, innovation, and growth among students.

MACET has recognized the importance of collaborative spaces for fostering a positive coding culture. The college will establish dedicated coding labs and study areas where students can come together to work on coding projects. These spaces will provide an environment conducive to collaboration, idea sharing, and teamwork, nurturing a sense of community among aspiring programmers at GeekyMACET, the recently formed coding club, will actively encourage students to engage in open source contributions. The club will organize workshops, hackathons, and coding competitions focused on open source projects. By actively involving students in open source initiatives, GeekyMACET will instill values such as collaboration, peer review, and knowledge sharing. Through these activities, MACET students will develop practical skills and gain exposure to real-world coding scenarios.

MACET will emphasize fostering innovation and creativity in its coding culture. GeekyMACET will organize coding competitions, innovation challenges, and project-based courses that encourage students to think beyond conventional approaches. By providing platforms for students to explore new technologies, experiment with different coding paradigms, and solve real-world

problems, MACET will cultivate a culture of innovation that prepares students for the dynamic tech industry.

MACET believes in the value of continuous learning in the ever-evolving field of coding. The college will provide students with resources such as coding libraries, online learning platforms, and access to industry-standard tools and technologies. Additionally, GeekyMACET will organize coding workshops, invite guest speakers from the industry, and facilitate networking opportunities. These initiatives will expose MACET students to diverse perspectives and keep them updated with the latest trends, nurturing a culture of lifelong learning.

## Conclusion:

Maulana Azad College of Engineering and Technology (MACET) understand that a healthy coding culture will shape the success of its students in the software development field. By forming GeekyMACET, a coding club focused on collaboration, innovation, and growth, MACET has taken a step forward in fostering a positive coding culture. Through collaborative spaces, open source contributions, emphasis on innovation, and continuous learning support, MACET and GeekyMACET will prepare students for the challenges they will encounter in their professional lives. These efforts will instill the values that drive the software industry forward and empower MACET students to become successful contributors to the tech community.

# Student's Corner

## "THE POWER OF NETWORKING: UNLOCKING OPPORTUNITIES FOR COLLEGE STUDENTS"

*Shivangi Gupta, CSE, 2022 Batch*

In today's rapid evolving world, college students face increasing pressure to stand out from the crowd and secure a promising future. As the job market becomes more competitive, simply relying on academic achievements may no longer suffice. One of the most effective strategies for success is networking. By forging connections with professionals, peers, and alumni, college students can unlock a myriad of opportunities that extend beyond the classroom. In this article, we will explore the power of networking and provide practical tips for students to maximize their networking potential.

1. EXPANDING HORIZONS: Networking offers college students the chance to broaden their horizons. Engaging with professionals in their field of interest exposes them to diverse perspectives, new ideas, and industry insights. Whether through internships, career fairs, or industry events, networking helps students gain valuable knowledge about their chosen field and develop a deeper understanding of their career path.

2. MENTORSHIP AND GUIDANCE: Networking facilitates the development of mentorship relationships, which can be instrumental in a student's personal and professional growth. Mentors can provide guidance, share their experiences, and offer valuable advice on navigating the complexities of their respective industries.

3. ENHANCING COMMUNICATION AND INTERPERSONAL SKILLS: Students can practice effective communication, learn how to present themselves professionally, and develop strong interpersonal skills through networking interactions. These skills are transferable and will benefit students throughout their personal and professional lives.

## PRACTICAL NETWORKING TIPS FOR COLLEGE STUDENTS:

- Attend career fairs and industry events to meet professionals and explore various career opportunities.
- Join professional organizations and student clubs related to their field of interest to connect with like-minded individuals.
- Utilize online platforms like LinkedIn to create a professional online presence and network with professionals.
- Reach out to alumni from their college who are working in their desired field for guidance and potential opportunities.
- Seek out internships, part-time jobs, or volunteer positions to gain practical experience and expand network.

Networking is a powerful tool that can unlock countless opportunities for college students. By actively engaging in networking activities, students can expand their horizons, open doors to hidden opportunities, gain mentorship and guidance, build a support system, and enhance their communication skills. It is essential for students to recognize the value of networking and take proactive steps to develop their network while in college. By doing so, they will increase their chances of success and create a solid foundation for their future careers.

# Student's Corner

## Paper Published

*Mr. Dhiraj Kumar, ECE, 2019 Batch*

NIT Uttarakhand is organizing an IEEE International Conference on Computer, Electronics & Electrical Engineering and their applications (IC2E3 2023) on 8th-9th June 2023. For this, they invited original research papers from across India and worldwide. More than 1000 papers were received (from 8 countries) and after a rigorous review process and plagiarism check, only 306 manuscripts were selected on the recommendations of the TPC of NIT UK.

We are pleased to inform that one of the papers selected belongs to our own student Mr. Dhiraj Kumar (ECE 2019B,) under the guidance of Mr Shahid Aziz (Asst. Prof, ECE Dept).

# Maulana Azad College of Engineering & Technology

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