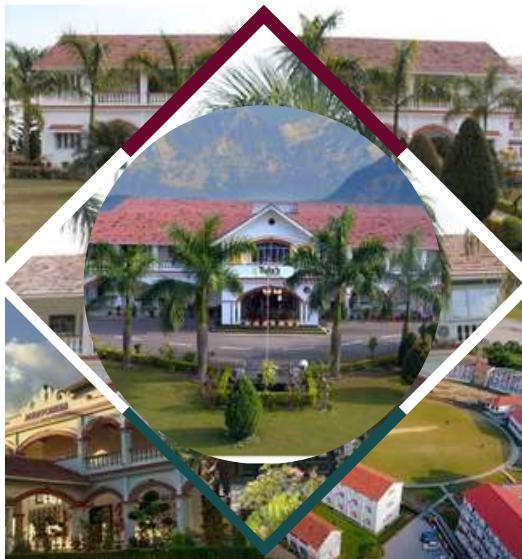TULA'S DEHRADUN | NAAC A+

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

डिजिटल DRISHTi

JULY-SEP (2023-2024)

OUTLINE

About The Department

The Department of Computer Science and Engineering is committed to giving its students access to the greatest resources available. Our goal is to establish a friendly environment where students can flourish under the direction and support of knowledgeable staff members who have access to cutting-edge resources. The department is dedicated to providing the greatest facilities in order to guarantee that the students receive a high-quality education. In a timely manner, our department scheduled several workshops, additional certificate courses, guest speakers, etc. This edition showcases our renowned faculty members notable accomplishments. **Dr. Sandip Vijay, Dr. Sanjeev Kumar, Dr. Priya Matta, and Mr. Girish Bisht** are all highly accomplished and have recently published research publications. **Workshops on MATLAB programming, Uipath and RPA, and cybercrime** were organised by the department. The department of computer science and engineering is leading the charge in promoting professionalism and education in computer science. The focal point of the organisation is the Department of Computer Science and Engineering. According to the department, education is the foundation of all holistic development and the only path that India can take to become a developed nation.

Department Vision:

To become the centre of excellence in teaching, research and innovative practices for computing.

Department Mission :

DM 1: To provide a learning ambience to enhance programming skills for problem solving.

DM 2: To integrate the software industry and academia in order to utilise technology for research, innovation and entrepreneurship.

DM 3: To develop professionals with a solid foundation who can think outside the box to adapt green computing solution.

DM 4: To provide a comprehensive computing environment that meets the highest global standards for higher education and lifelong learning.

DM 5: To create ethical, skilled engineers. through theoretical understanding and practical implementations.

Dr.Nishant Saxena
(Dean of Academics)

I sincerely appreciate the tremendous amount of work you put into the most current edition of "डिजिटल-Drishti." Your unwavering commitment, remarkable work, and boundless creativity are apparent in every detail of this newsletter. The information is incredibly fascinating and educational, and it serves as a memorial to our research pursuits and academic accomplishments. The exquisite design and meticulous attention to detail further highlight the dedication of our team. I extend my heartfelt gratitude to the team for their indispensable role in upholding the knowledgeable and interconnected nature of our academic community. "डिजिटल-Drishti" has unquestionably grown into a helpful instrument in which we can all take pleasure. I appreciate how committed you are to excellence, and I eagerly await your insightful newsletters on a regular basis.

Dr. Anand Kumar Gupta
(HOD CSE Department)

I congratulate and convey My best wishes to the Department of Computer Science and Engineering and the entire editorial team on the launch of the current edition of newsletter "डिजिटल-Drishti". As we stand on the threshold of a new academic year, it is with great enthusiasm that I share some creative thoughts and aspirations for our esteemed department. In the dynamic landscape of technology and academia, our CSE department has consistently strived for excellence, nurturing the brightest minds and pushing the boundaries of innovation. It has been only possible due to the sincere efforts of the energetic and hardworking team. I am confident this newsletter will provide a great platform for the interchange and collaboration of ideas to build a digitalized India.
Happy Reading!

Yamini Goyal
(Editor)

I'm excited to consider the department's overall accomplishments as well as the combined accomplishments of our editorial team as we wrap up another fruitful quarter. We have worked ceaselessly for the past three months to generate content that educates, captivates, and motivates our audience. Despite the obstacles encountered, we have successfully surmounted them by means of collaboration, perseverance, and a collective dedication to achieving the highest standards. I would like to express my sincere gratitude to every individual within our team for their diligent efforts and valuable contributions within the department. Collectively, we have shown the potential that can be attained when we unite with a shared objective. As we anticipate the next quarter, I am enthusiastic about seeing our ongoing growth and collaborative innovation. I express my gratitude to the whole department for their ongoing support, effort, and enthusiasm.

Dr. Sandip Vijay

Dr. Raghav Garg

Dr. Sanjeev Kumar

Dr.Sandeep Kumar

Dr.Ashish Gupta

Dr. Priya Matta

Dr.Ahmad Jamal

Dr. Bharti Kalra

Dr. Shikha Tayal Aeron

Dr. Musheer Vaqar

Dr.Nirmendra Singh

Mr. Brajendra Sharma

Mrs.Priya Bhardwaj

Mrs. Ritu Pal

Ms. Riya Kukreti

Ms. Vaibhavi Painuly

Mr. Gaurav Gupta

Mr.Anuj Singh

Mrs. Shivali Pundir

Mr.Prashant

Mr. Sharad Singh

Mr. Devendra Sood

Mr.Siddhartha

Mr. Aizaz Ahmad

Mr. Girish Singh Bisht

Ms.Akanksha Srivastav

Ms.Rimpi Upadhyay

Mrs. Suchi Jain

Ms.Divya Negi

Ms.Nisha Gupta

Ms. Priya Vishkarma

Mrs.Neha Chauhan

Mr. Gaurav Mittal

Mr. Javed

Mrs.Arti Goel

Mrs.Santwana Goel

Mr. Yashpal

Mrs. Jigyasha Chandok

EDITORIAL TEAM

Hafeez Pathan
(B.tech CSE 3rd Year)

Rupam Kumar
(BCA 3rd Year)

Sakshi Pandey
(B.tech CSE 3rd Year)

Mrs. Shivali Pundir
(Faculty Coordinator

Mr. Yamini Goyal
(Faculty Coordinator)

DEPARTMENTAL EVENTS

Workshop on Uipath and RPA

UIpath and RPA five-day certification programm in association with Ritusha Consultants Pvt. Ltd., organized by the Department of Computer Science and Engineering from 19 to 24 June 2023. The event was coordinated by Dr. Anand Gupta and Dr. Sandeep Kumar.

This workshop focused on honing expertise in UiPath & RPA, aiming to equip participants with vital skills for enterprise automation. Led by skilled professionals, it aimed to empower attendees to establish expansive capabilities within enterprises, fostering utilization of UiPath & RPA for seamless project execution.

Participants from all years of B.Tech, BCA and MCA attended this workshop and engaged in practical applications like web and email automation and advanced data extraction, within a collaborative setting with industry professionals. This hands-on approach ensured through grasp and interaction, preparing attendees to effectively employ UiPath and RPA in future projects.

The workshop imparted a comprehensive understanding of UiPath and RPA, emphasizing practical applications for automation creation. The acquired knowledge and practical skills position the participants to apply UiPath and RPA effectively, ensuring streamlined project execution and enhanced enterprise automation capabilities in their future endeavors.

Workshop on the MATLAB Programming

Department of Computer Science & Engineering organized a workshop on Matlab from **20 July to 22 July 2023**. This workshop was coordinated by **Dr.Sunil Semwal**(Dean of Research) & **Dr Anand Gupta (**HOD C.S.E)

Matlab serves diverse disciplines, enabling tasks from data analysis to control system design. Integration with C, C++ and Python expands functionality. MathWorks toolboxes extend capabilities to fields like machine learning and digital image processing ensuring adaptability and applicability.
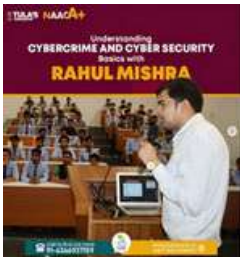

Mr.**Manoj Kumar** Sr.Application Engineer, Design Tech Systems Pvt. Ltd. **Dr.Dhruv Chandel,** Education Team at MathWorks provided the knowledge how Matlab stands as a powerful and versatile tool that plays a crucial role in academia- industry and research across various domains. Experts highlight Matlab's pivotal role in academia-industry, and research. Its user-friendly interface, extensive functions, and specialized toolboxes empower students, researchers, engineers, and scientists to tackle complex challenges, fostering exploration and innovation. Matlab's user-friendly interface, extensive functions, and specialized toolboxes position it as the choice for complex challenges. It empowers users across academia, industry, and research, enabling exploration, innovation, and excellence in diverse fields.

Workshop on Cyber Crime

The Computer Science & Engineering Department orchestrated a five-day **"Cyber Crime"** workshop from 16 September 2023 to 20 September 2023, led by **Mr. Rahul Mishra Cyber Security Advisor, U.P Police.** To immerse students in digital security it covered various cybercrime types, focusing on hands-on learning through practical exercises and digital forensics exploration for a comprehensive understanding.

Engaged in discussions on legal, ethical dimensions, and digital forensics techniques, students actively interacted under Mr. Rahul Mishra's guidance. This interactive approach cultivated a holistic learning environment, enriching their comprehension of cybercrime intricacies.

Balancing technical skills with ethical awareness, the workshop provided a well-rounded education. Equipped with responsible digital navigation skills, students emerged confident in tackling evolving cyber threats, prepared to navigate the dynamic digital landscape responsibly and securely.

One of the workshop focal points was digital forensics where participants from B.Tech and BCA gained initiatives into the Techniques used to investigate cybercrimes moreover the workshop facilitated in-depth discussion on the legal and ethical aspects of cybercrime ensuring that students not only understand the technical denunciation but also the border of implementation of their action and digital reliance

The department hosted an exhilarating hackathon on 19 September 2023. This vibrant social coding spectacle drew students enthusiasts, igniting creativity to refine or build software within set confines. Year-spanning participants, including B.Tech and BCA students, alongside talents from various institutions, showcased their prowess.

The thrill culminated in a stellar win for **Sarthak Sahni, Preet, Anil Maharshi, and Naman Bajpayi,** all third-year students mentored by **Ms. Akanksha Shrivastava,** securing the prestigious second prize. Their collaborative brilliance shone, epitomizing innovation and excellence amidst this captivating hackathon saga.

The Objective was to develop a new approach to solving problems or completing large projects that required collaboration and create functional software or hardware by the end of the event.

HACKTHON 2023

1.Research Papers & Certificate

Dr. Sanjeev Kumar

The 2nd International Conference on Communication, Security and Artificial Intelligence (ICCSAI-2023) is being organized by Galgotias University, India on November 23-25, 2023. In this Professor Sanjeev Kumar was the Session Chair and presented his paper **" Edge Intelligence: Advancements in Big Data Analytics for Edge Devices"**.

The paper presents several use cases of edge data analytics across diverse domains, including smart manufacturing, healthcare monitoring, autonomous vehicles, and environmental monitoring. These case studies demonstrate the practical applications of edge analytics and highlight the potential benefits of decentralized data processing. As the IoT ecosystem continues to expand, embracing edge analytics becomes imperative for unleashing the full potential of the data-driven future.

Pandey, C., Sharma, S., & **Matta, P**. (2023, July). Routing Techniques in Body Sensor Network System for Healthcare: Applications, Challenges, and Research Trends. In 2023 World Conference on Communication & amp; Computing (WCONF)(pp. 1-5). IEEE.

This paper will discuss many research projects based on various BSN routing techniques. The author described innovative work completed for effective information transmission in a BSN and demonstrated a comparison study based on six crucial parameters: stability, network lifetime, energy efficiency, reliability, network delay, and throughput. The author also discusses various challenges and research trends that have been reported by various authors throughout their research.

Dr. Priya Matta

Mrs.Jigayasa Chanhok

2.Vyas, M., Vijayaganth, R., **Chandhok, J.**, Srivastava, A., Arumugam, S., & Tiwari, M. (2023, July).Revolutionizing IoT Network Security with Deep Learning-Anomaly Detection Model. In 2023 4th International Conference on Electronics and Sustainable Communication Systems (ICESC) (pp. 1533-1538). IEEE.

The industrial revolution 4.0 marks that the world is currently very advanced where all activities can be done digitally by utilizing the sophistication of technology and information. The development of technology and information also plays an important role in the world of education. But on the other hand, education in Indonesia is still relatively low in the use of creative and innovative learning media. The purpose of this research is to develop learning media to help introduce material about the Internet of Things technology, to determine the feasibility of learning media to introduce the Internet of Things, to provide understanding to students, and also to assist teachers in explaining the material being taught. The method used to develop the media is Research and Development with the ADDIE model. The first stage is to do a needs analysis. The second stage is the design of the learning media application for the introduction of the Internet of Things. The third stage is the development of the design into the form of a software program. The fourth stage is implementation and application testing to ensure the quality of the developed media. The fifth stage is the evaluation where product testing is carried out by media experts and material experts. The results of this study found that the learning media for the introduction of the Android-based Internet of Things was feasible to be used in learning activities. However, there are still some aspects that need to be improved and developed, such as materials, videos, and quizzes.

INNOVATION & RESEARCH COLLABORATION

1.Research Papers & Certificate

Has successfully completed the course Data Science for Engineers with a consolidated score of 66% from NPTEL.

GIRISH SINGH BISHT

2.Patent

Dr.Ashish Gupta

Dr.Sandeep Kumar

Mr.Girish Bisht

Dr.Ashish Gupta, Dr.Sandeep Kumar and Mr. Girish Bisht have published a National Patent on **"Crime Prediction Using Blockchain"** With Application Number 202311039793 on date 10/06/2023

Mrs.Shivali Pundir

Ms. Riya Kukreti

Mrs. Ritu Pal

Mrs. Shivali Pundir, Ms.Riya Kukreti and Mrs.Ritu Pal have published International Patents on **"Multiplayer Game Using Unity"** & **"Interactive Game Using Maze"** With Application Numbers 202341039603 A & 202341039480 A on date 30/06/2023

Hafeez Pathan
(B.Tech CSE 3rd Year Sec - B)

"Guardians of the Virtual Realm"

Navigating the Unseen Landscape of Cybersecurity

In a world where our lives are increasingly intertwined with the digital realm, the guardians of our virtual safety, known as cybersecurity experts, work tirelessly to protect us from unseen threats. This article invites you to explore the fascinating and critical world of cybersecurity.

1. The Digital Battlefield: Understanding Cyber Threats
Delve into the evolving landscape of cyber threats, from traditional viruses to sophisticated ransomware and phishing attacks. Paint a vivid picture of the digital battlefield that cybersecurity professionals navigate.

2. Cybersecurity Heroes: The Silent Guardians
Introduce the unsung heroes of the digital age – cybersecurity professionals. Share stories of real-life cybersecurity experts who have thwarted cyber-attacks and discuss the skills and mindset required for this crucial role.

3. The Price of Ignorance: Cybersecurity for Individuals
Examine the common misconceptions and practices that leave individuals vulnerable to cyber threats. Provide practical tips for readers to enhance their own cybersecurity, making the topic relatable and actionable.

4. Beyond the Firewall: Corporate Cybersecurity Challenges
Explore the unique challenges faced by businesses in securing their digital assets. Discuss recent high- profile cyber-attacks on corporations, emphasizing the far-reaching consequences of breaches and the importance of robust cybersecurity measures.

5. Innovations in Cybersecurity: Staying Ahead of the Game
Highlight cutting-edge technologies and strategies employed in the world of cybersecurity, such as artificial intelligence for threat detection and blockchain for secure transactions. Showcase how the field is constantly evolving to stay one step ahead of cybercriminals.

6. Ethical Hacking: A Force for Good
Introduce the concept of ethical hacking and how cybersecurity professionals use it to identify and fix vulnerabilities before malicious hackers can exploit them. Highlight the ethical dilemmas faced in the pursuit of digital security.

Summarize the importance of cybersecurity in our interconnected world and express gratitude for the dedicated professionals working behind the scenes. Encourage readers to take an active role in their own digital safety and stay informed about cybersecurity developments. Provide links to reputable cybersecurity resources, encourage readers to follow cybersecurity best practices, and share the article with friends and family to promote digital literacy.

Nikhil
(B.Tech CSE 3rd Year Sec - B)

"Unleashing the Power of AI"

"From Sci-Fi Dreams to Everyday Reality"

In the fast-paced world of technology, one concept is consistently making headlines—Artificial Intelligence (AI). But beyond the buzzwords and futuristic depictions, what does AI really mean for the average person? Let's embark on a journey to demystify AI, exploring its unique applications and unraveling the profound impact it has on our daily lives.

1. The AI Revolution: A Reality Check
Begin by providing a brief overview of what AI is and dispelling common myths. Showcase how AI is not just a concept confined to science fiction but an integral part of our present and future.

2. Everyday AI: How It Shapes Your Life
Explore the various ways AI integrates into our daily routines, from personalized
recommendations on streaming platforms to smart home devices that adapt to our preferences. Emphasize the convenience and efficiency AI brings to mundane tasks.

3. Behind the Scenes: Understanding Machine Learning
Demystify the technical aspect of AI by delving into machine learning, the driving force behind many AI applications. Use simple analogies to make complex concepts accessible to a broad audience.

4. AI in Healthcare: Transforming Patient Care
Highlight the remarkable strides AI has made in healthcare, from early disease detection to personalized treatment plans. Discuss real-world examples that demonstrate how AI is saving lives and improving the quality of healthcare.

5. The Ethical Quandaries: Navigating the AI Landscape
Acknowledge the ethical considerations surrounding AI, such as bias in algorithms and privacy concerns. Discuss ongoing efforts to address these issues and the importance of responsible AI development.

6. The Future Awaits: What's Next for AI?
Offer a glimpse into the future of AI, discussing potential advancements and their implications. This could include topics like AI-driven creativity, enhanced human-computer collaboration, and
the role of AI in addressing global challenges.

Wrap up the article by emphasizing the undeniable impact of AI on our lives and the exciting possibilities it holds. Invite readers to stay curious, as the AI journey is just beginning.

Nitish Singh
(B.Tech CSE 2nd Year Sec - B)

"Education knows no bounds in the Digital Era"

The Internet is a system architecture that has revolutionized communications and methods of commerce by allowing various computer networks around the world to Interconnect. It has become an indispensable part of our life. Its profound influence extends beyond convenience, fundamentally reshaping how we acquire knowledge and learn.

For many users of the Internet, it has always been an inherently educational tool. Today, the younger Generation, especially the millennials, can no longer talk about the internet as a discrete entity but rather as a normal way of life. The internet seems to be slowly positioning itself as one of the basic needs, much like water and electricity.

The Internet is a huge source of information from which we can gather some ideas and knowledge. It helps students around the world to increase their thinking capability, build some skills, and share their thoughts on a certain topic.
The Education implications of the internet are understandable and often described in grand terms.

"The Internet isn't just a powerful tool for communication. It's arguably the most potent force for learning and innovation since the printing press."

Dr. Anand Kumar Gupta
(HOD CSE Department)

Ms. Yamini Goyal
Assistant Professor

ये कैसी इंसानियत

माँ बेटे की एक वीडियो इंटरनेट पर आज वायरल थी
बेटे के भोलापन को देख हर माँ की ममता घायल थी

माँ दुनिया छोड़ चुकी थी और बेटा वहीं खेल रहा था
दोषी पूरा समाज था पर बच्चा अकेले झेल रहा था

कैसे कैमरा ऑन हुआ मैं में सोच भी नहीं पा रहा था
इंसानियत को ताक पे रख कोई वीडियो बना रहा था

हर कोई वो वीडियो देख अफ़सोस जताए जा रहा था
पर क्या हुआ उस बच्चे का कोई नहीं बता पा रहा था

शर्मसार मानवता थी और देख द्रवित सब हो रहे थे
जब मदद की बारी थी तब सब आंख मूंद रहे थे

किसी ने भूख से मौत तो किसी ने बीमार बताया
कुछ ने राजनीति और सिस्टम को ही लाचार पाया

सबने अपनी तरफ से किसी ना किसी को दोष दिया
मजात किसी ने खुद को देख एक बार भी शेष किया

नहीं जानता भूखी थी या फिर वो माँ बीमार थी
जैसे उसकी लाश पड़ी थी वे मानवता की हार थी

जीते जी इस माँ बेटे के कभी कोई काम ना आया
वीडियो देख लगभग सबने घड़ियाली आँसु बहाया

इंसान बिन इंसानियत के ये समाज हमने ही बनाई है
दुःख दर्द इंसानियत सिर्फ वीडियो तक सिमटायी है

बस इसीलिए लोगों की बेबसी में को अवसर देखते हैं
कुछ लोग लाशों के वीडियो बना इंसानियत बेचते हैं

The Daughter of the Earth.

I am the daughter of the Earth.
I alter my three appearances
such as a day convert into
Dawn, noon and dusk .
In the morning I am the little girl child
With bright eyes and breezy
Full of ambition and ardent .
I worn out with my work at noon
And feel myself as an old lady
Where I lose my power and passion
Yet bless others from my experiences.
As the dusk comes
I dress up elegantly with gleaming stars
To look for new arrival.

Nandni Sharma
(B.Tech CSE 3rd Year Sec - C)

Grudge for Studies

Never know how to get rid of them heavy bags with knowledgeable brains no pictures no comics not even a game Oh! books you all are just a vain compass, sharpeners, erasers, pencil. Oh! the geometry just goes to hell wasting our precious time I'm books no one knows how bad this equation looks.
I tried my best to write good but only verdicts as I hate your books!!!
Now exam time approaches you are my friend and well-wisher please fit into my mind as easily as you can.

Akanksha Chauhan
(B.Tech CSE 2nd Year Sec - A)

The Books

The books have given a field,
To a reader, whole life to yield,
Given a stage, where mankind
Dwells in imagination with a creative mind.
Books make us literate and educated,
'cause of these great personalities were created.
There is no way of losing through books,
The personality of a person develops, as he looks.
Cultures, philosophies, and realizations,
Were kept alive by the books of all generations.
Happiness, unity, prosperity everything binds,
Grateful for all this to books of all kinds.

Pourush Siddharth
(B.Tech CSE 3rd Year Sec - C)

लकड़ी

बचपन के खेल अब समाप्त हो गए,
अब तुम्हें बड़ा हो जाना होगा।
सफर में तुम अकेले हो, तुम्हें अपना ही साथी बनना होगा।
आज समुद्र में तूफान आया है, लेकिन नाव को तुम्हें पार करना होगा।
जो लड़ गया वही इंसान है, वरना इस ज़माने से तुम्हें भी हारना होगा।
बचपन के खेल अब समाप्त हो गए,
अब तुम्हें बड़ा हो जाना होगा।
बचपन के खेल अब समाप्त हो गए,
अब तुम्हें बड़ा हो जाना होगा।

Mohit Pant
(B.Tech CSE 3rd Year Sec - A)

Sakshi Pandey
(B.Tech CSE 3rd Year Sec - B)

MadhuLikha Choudhary
(B.Tech CSE 2nd Year Sec - B)

Supriya Yadav
(B.Tech CSE 3rd Year Sec - B)

Hafeez Pathan
(B.Tech CSE 3rd Year Sec - B)

Hafeez Pathan
(B.Tech CSE 3rd Year Sec - B)

Army Attachment Camp (GIRLS)

- It was a 12-day camp attended by three NCC cadets from Tula's Institute.
- Duration: 01-08-2023 to 12-08-2023.
- Under Officer Akanksha Chauhan won a silver medal in 400m relay and a silver medal in kho-kho competition.
- Cadet Siya won a silver medal in the 400m relay and a silver medal in kho-kho competition.
- Cadet Sugandh a silver medal in kho-kho competition.
- Under Officer Akanksha Chauhan also got selected for anchoring in the cultural event.

Army Attachment Camp (BOYS)

- It was a 12-day camp attended by three NCC cadets from Tula's Institute.
- Duration: 01-08-2023 to 12-08-2023
- Cadet Luv Dagur won gold in football.
- Cadet Aashish Pal , Cadet Arpit Tyagi , Cadet Luv Dagur won gold in volleyball.

- **10 Students of B.Tech CSE were placed on 2nd September 2023 at MAMSYS with 4LPA.**
- **2 Students of B.Tech CSE were placed on 16th September 2023 at ARTECH with 4.58LPA.**