TULA'S DEHRADUN | **NAAC A+**

Department of computer science and engineering

डिजिटल **Drishti**

OCT-DEC (2022-2023)

OUTLINE

ABOUT THE DEPARTMENT

The Computer Science and Engineering Department of Tula's Institute is leading initiatives to increase the quality of education and professionalism in the field of computer science and information technology. The Department of Computer Science and Engineering is the nerve center of the institution. The department believes that education is the cornerstone of overall development and that it alone can assist in building India into a developed nation. The department emerged as a powerhouse of innovation and progress within the dynamic landscape of technological evolution, with more than 500 latest-configuration computers with high-speed data processing and networking. The beat of research innovation remains strong in our department, and this edition turns the spotlight on the exceptional achievements of our esteemed faculty. Notably, we showcase Dr. Tripuresh Joshi and Dr. Sunil Semwal, whose recent triumphs include research papers. Our commitment to knowledge exchange and collaboration was evident in the success of the PowerPoint presentation, Horizon 1.O Empowering Futures, and National Mathematics Day, which facilitated valuable insights and fostering connections within our community. We take pride in celebrating the accomplishments of our distinguished students for being placed. Looking forward, an exciting array of events awaits, including a workshop on WordPress, Python programming, and addon courses. The department includes various teaching aids like a smart classroom, a department library, and an internet facility. The various programs offered by the Department of Computer Science and Engineering include B.Tech, MCA, and M.Tech. The students are exposed to core courses on computer algorithms, computer systems, artificial intelligence, etc. The department also focuses on the industry-academia relationship, and for this, the department arranges various workshops, industrial visits, and guest lectures.

COMPUTER SCIENCE AND ENGINEERING

DEPARTMENTAL VISION & MISSION

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.

FROM THE FACULTY'S DESK

**Dr.Ram Bhagwan
(cse hod)**

Reflecting on our journey, it's evident that our department has flourished into a vibrant hub of innovation and academic excellence. From pioneering research endeavours to fostering a collaborative culture, each milestone marks a step toward our collective growth. As we expand our horizons and embrace new challenges, let's take pride in the resilient spirit that defines us. A heartfelt thank you for skilfully crafting our department's newsletter. Your dedication in showcasing our achievements amplifies the collective pride we feel. Your meticulous work not only captures moments of success but also inspires us to strive for greater heights. In each edition, this departmental newsletter bring our accomplishments to life, and fostering a sense of unity. Your role is integral, and we extend our gratitude for being the voice that echoes our triumphs.Together, we've cultivated an environment where ideas flourish, knowledge b.lossoms, and the seeds of progress are sown. Here's to the remarkable growth of our department, and the exciting chapters yet to unfold.

Mr. Brajendra Sharma

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!

LIST OF FACULITY MEMBERS

Dr. Sandip Vijay

Dr. Raghav Garg

Dr. Sanjeev Kumar

Dr.Ram Bhagwan (cse hod)

Dr. Anand Gupta

Dr.Ashish Gupta

Dr.SandeepKumar

Dr.Ahmad Jamal

Dr. Bharti Kalra

Dr.Sunil Semwal

Dr.Tripuresh Joshi

Mr. Brajendra Sharma

Mrs. Ritu Pal

Mrs. Shivali Pundir

Mr. Rakesh Kumar

Ms.Harshita Chaudhary

Ms.Pratibha Dimri

Mrs. Rashmi Mishra

Mr.Arpit Goel

Mr.Yashpal Sinha

Mrs.Suchi Jain

Mrs. Arti Goel

Mrs. Jigyasha Chandhok

Mr. Girish Bisht

Mr.Sanjay Tyagi

Mrs.Neha Chauhan

Ms.Akanksha Srivastav

Ms.Manvi Bohra

Mrs. Suchi Jain

Mrs.Santwana Goel

On October 8th, 2022, the IEEE SB Tula's Institute organized a one-day Tech-Fest, Horizon 1.0, to commemorate IEEE Day, featuring an introduction to IEEE for newcomers. The event aimed to raise awareness about IEEE and its role in career growth, enhance networking, develop skills, promote cultural exchange, and build a sense of community among students from different branches. The event included approximately 7-8 interactive and engaging sessions, blending technical and cultural activities, attracting a total of 170 student participants.

the outcomes of the Horizon 1.0 Tech-Fest include increased awareness about IEEE, career growth opportunities, enhanced networking, skill development, cultural exchange, community building, inspiration, and motivation. The event offered students the opportunity to learn about the various resources, networking opportunities, and professional development avenues available through IEEE membership. Additionally, the event facilitated cross-disciplinary collaboration and enriched experiences among students, inspiring and motivating them to pursue their interests in technology and engineering fields. The student branch successfully celebrated IEEE Day and instilled a sense of pride and belonging among its members.

The PowerPoint presentation

On the 21st of November, 2022, IEEE Students of Tula's Institute organized the PowerPoint presentation event, Cognizance 2.0, at the Conference hall of Tula's Institute, Dehradun. The event started at 2 pm and lasted until 5 pm, with a total of 45 student participants, including 35 IEEE Student Members and 10 non-IEEE members. The event aimed to provide a platform for students to showcase their presentation skills, communication abilities, and body language. The judges assessed the participants based on their body language, PPT content, attitude, knowledge, and confidence level.

The winners of the event were Akanksha Chauhan (1st place), Manas Negi (2nd place), Ajay Jha and Ankit Anand (3rd place), and Karthik (Runner Up). Cognizance 2.0 aimed to create a culture of knowledge sharing and critical thinking, enabling participants to demonstrate their comprehensive understanding, effective communication skills, and confidence in presenting their chosen topic to a diverse audience of faculties and students. The event assessed participants based on several parameters, including content quality, presentation skills, knowledge and understanding, attitude and professionalism, creativity and innovation. The event was a co-curricular activity that provided valuable insights and professional skills to the students beyond their academic curriculum.
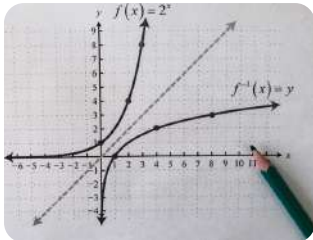
NATIONAL MATHEMATICS DAY

On December 22nd, 2022, IEEE CSE SOCIETY, Tula's Institute organized National Mathematics Day to celebrate the contributions of mathematicians, highlight the importance of mathematics in various fields, and promote mathematical literacy and education. The event was organized by Ritika Singh and Supriya Yadav, with 85 student participants, and aimed to inspire interest in mathematics, encourage students to pursue studies and careers in mathematics-related fields, and foster a culture of innovation and problem-solving through mathematical thinking. The event was held in honor of the legendary Indian mathematician, Srinivasa Ramanujan, and served as a platform to celebrate the beauty, significance, and contributions of mathematics to society.

During the event, a guest lecture cum discussion talk was organized to discuss the importance of mathematics and its applications in various fields. The event highlighted the remarkable **achievements of Srinivasa Ramanujan**, inspiring students and enthusiasts to pursue their interests in mathematics. The event included special lectures, seminars, and discussions, educational workshops and competitions, public awareness campaigns, mathematical exhibitions and demonstrations, and awards and recognitions. The outcomes of the event included celebrating mathematical excellence, honoring the legacy of Srinivasa Ramanujan, and promoting mathematical literacy and awareness across the nation. The event inspired participants to explore the wonders of mathematics, develop their problem-solving skills, and recognize the profound impact of mathematics on society.

Abstract:

A graded-channel double gate junction less FET (GC-DG-JL-FET) is investigated in this paper, to improve switching and RF performance of the device. The channel-region of the proposed structure comprises of two non-overlapping materials. The first region is constructed using Silicon-Germanium (SiGe) , and the second is composed of Silicon (Si), having channel lengths LC1 and LC2 , respectively. The region wise uniform doping concentration profiles are used for this study, which are Nd1 for region one and Nd2 for region two. The Hafnium Oxide (HfO2) is used as gate oxide. The operation of the proposed device assessed using drain current (Ids) , trans-conductance (gm) , trans-conductance generation efficiency (gm/Ids) , unity gain cutoff frequency (ft) . Further, for a fixed channel length (20 nm), the lengths of the two non-overlapping regions (i.e. LC1 and LC2) of GC-DG-JLFET is optimized using 2D-simulations to analyze the effect of the variation in the RF -performance of the structure. It is noted, an increment in LC1 improves electrostatic control of the gate under the OFF state which enhances the RF characteristics of the proposed device. When optimized, the GC-DG-JL-FET for LC1=15 nm offers a peak gm and ft of 1580 μS/μm and 470 GHz, respectively for a total channel length of 20 nm. On account of such results, the GC-DG-JL-FET device structure can be an apropos choice for analog/RF applications.

Abstract:

Through the utilization of the Internet, cloud computing supplies storage and computation resources to deliver services for many sectors. The speed of such systems suffers, though, since delay-sensitive systems, such as smart city and health applications, increasingly need for processing over massive volumes of data transmitted to centralised datacenters. When compared to cloud services, the paradigms of fog as well as edge computing provide innovative solutions by affecting the financial closer to the customer and by having low energy consumption and latency effectiveness. To optimise expense and resource efficiency, enhance QoS, and increase security and privacy, it is crucial to discover the best locations for services and assets inside the 3 IoT. The bipartite graph task scheduling method we provide in this research enhances cost effectiveness in real world applications with strict deadlines. The proposed method's performance in terms of delay, network congestion, as well as cost is deployed and tested to use the iFogSim simulator, an expanded version of CloudSim. The evaluation results demonstrate that the suggested algorithm outperforms Round-Robin and Minimum Response Time methods in terms of both cost as well as throughput.

Student's Articles

Nikhil Mathur

छात्र जीवन का महत्व

विद्यार्थी जीवन हमारे जीवन का सबसे महत्वपूर्ण काल माना जाता है। हमारे भविष्य के सपने, इच्छाएँ और आशाएँ इस पर निर्भर हैं। विद्यार्थी जीवन तैयारियों का काल है। यह शिक्षा का काल है। इस समय हमारा मन मिट्टी के समान है। मिट्टी एक मुलायम चीज है और कुम्हार मिट्टी से विभिन्न चीजें डिजाइन करता है। मिट्टी की तरह, हमारे दिमाग को भी विभिन्न तरीकों से आकार दिया जा सकता है। एक बार बर्तन बन जाने के बाद उनका आकार नहीं बदला जा सकता।

उसी प्रकार हमारे चरित्र एक बार एक प्रकार से बन जाए तो उसे आसानी से बदला नहीं जा सकता। यदि हम विद्यार्थी जीवन में अच्छी शिक्षा प्राप्त कर उसका सही उपयोग करें तो भविष्य में सफल होंगे। दूसरी ओर, यदि हम इस समय गंभीर नहीं हैं, तो हम अपने लक्ष्य प्राप्त नहीं कर सकते। इसलिए, छात्रों को बहुत सावधान रहना चाहिए। हमें अपना हर कदम उठाने से पहले गंभीरता से सोचना चाहिए। हमें इस दौरान जितना हो सके नई चीजें सीखनी चाहिए।

छात्र किसी राष्ट्र के भावी नेता होते हैं। किसी राष्ट्र की समृद्धि उसके छात्रों पर निर्भर करती है। उचित शिक्षा प्राप्त करना, अच्छा

Nikhil Bhardwaj
Eco-Friendly College Room

Creating an eco-friendly college room is an excellent way to reduce your environmental impact and save money. First, start by minimizing your energy consumption. Swap out traditional light bulbs for energy-efficient ones, use power strips to turn off electronics when they're not in use, and choose energy-saving appliances. Second, focus on reducing waste. Use reusable water bottles, coffee mugs, and bags, and avoid buying single-use products. Instead, opt for items with less packaging and buy in bulk. Lastly, consider the materials you use to decorate your room. Choose sustainable, eco-friendly products, and consider buying used or second-hand furniture.

Creating an eco-friendly college room is not only good for the planet, but it can also have positive effects on your mental and physical health. Surrounding yourself with green, natural materials can improve air quality and reduce stress levels. Additionally, using energy-efficient appliances and light bulbs can reduce exposure to harmful toxins and pollutants. By making small changes to your living space, you can make a big difference in your environmental impact and overall well-being.

Remember, creating an eco-friendly college room doesn't have to be expensive or time-consuming. Small changes, such as turning off lights and unplugging electronics, can add up over time and have a significant impact. Encourage your roommates and floormates to join you in your eco-friendly efforts, and make it a fun and engaging experience. By working together, you can create a sustainable and eco-friendly living space that benefits both you and the planet.

Shivya Bharadwaj

कॉलेज जीवन के बारे में

कॉलेज जीवन एक नया शुरुआत है। यह विद्यार्थी का जीवन बदल देता है। नए साथी, नए परिवेश, नए शिक्षण के साथ। कॉलेज जीवन विद्यार्थी को स्वतंत्रता, समझौता, और समान के साथ समाज में प्रवेश करने का मार्ग दिखाता है।

कॉलेज में हमें नए विषयों से जुड़ी चीनी होती है। हमें विभिन्न विषयों के बारे में सोचना, विचार करना, और निर्णय लेना शुरुआती सीख होती है। हमें अपनी राय के बारे में वक्तव्य करना सीखता है और अपने समझ को दूसरों से शेर करता है। कॉलेज जीवन हमें नए सोचने की क्षमता देता है।

कॉलेज जीवन में हमें स्वतंत्रता मिलती है। हम अपने परिवार से अलग हो जाते हैं और अपने अंदर की स्वतंत्रता को स्वीकार करते हैं। हमें अपने को अपने जीवन के निर्देशनकार बनाना होगा। हमें अपनी चुनौतियों को ही सामना करना होगा। कॉलेज जीवन हमें स्वतंत्रता की सीख देता है।

कॉलेज जीवन नए समझौते के साथ भरपूर होता है। हमें अपने समझ और राय को दूसरों के साथ साझा करने की आवश्यकता होगी। हमें अपने समझ के साथ सहमति पानी होगी और अपने विरोध को भी समझना होगा। कॉलेज जीवन हमें सम

Shreya Shrivastava

the power of reading

Reading has the power to improve our mental and emotional well-being, expand our knowledge and creativity, and provide a much-needed escape from the stresses of daily life.

When we read, we engage our minds and improve our memory, concentration, and critical thinking skills. Reading can also be a deeply emotional experience, allowing us to connect with characters and stories in a way that is unique to this medium. By feeling empathy, compassion, and understanding for others, we can broaden our perspectives and gain a better understanding of the world around us.

In addition to these benefits, reading can also be a source of creativity and inspiration. By learning new things, from historical events to scientific concepts, we can challenge our assumptions and come up with new ideas. Whether we are reading for pleasure, learning, or personal growth, the act of reading can be a truly powerful experience.

If you are looking for a way to enrich your life, consider picking up a book and discovering the power of reading for yourself. Whether you prefer fiction or non-fiction, there is a world of knowledge and inspiration waiting for you on the pages of a book. So, make time for reading in your daily routine, and experience the transformative power of reading for yourself.

In short, reading is a powerful tool for personal growth and development. It can improve our mental and emotional well-being, expand our knowledge and creativity, and provide a much-needed escape from the stresses of daily life. Whether you are reading for pleasure, learning, or personal growth, the act of reading can be a truly transformative experience. So, pick up a book and discover the power of reading for yourself.

Placement Opportunities

EDITORIAL TEAM

Mr.Abhishek Pal
B.Tech 3rd Year

Ms. Vaishali Negi
B.Tech 3rd Year

Mrs. Ritu Pal
faculty(coordinator)

Mr.B. K Sharma
(Faculty coordinator)

Announcement

To be announced

International Conference on Advance in Computing Communication and Materials to be decided

Add-on Certificate Program on Cyber Security Jan 30 - Feb 4, 2022

Add-on Certificate Program on WordPressJan 30 - Feb 4, 2022

Add-on Certificate Program on Python to be decided

Workshop on women's Empowerment to be decided

TULAS

WELCOME

2023