




I.T. Annual Newsletter

Academic Year : 2023-24

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 Department of Information Technology,
UIET, Panjab University, Chandigarh, 160014

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Panjab University
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ABOUT U.I.E.T.

UIET : A CAMPUS LANDMARK

UIET lies in the southern campus of Panjab University, Sector 25, Chandigarh. There are three academic blocks, which include various labs, offices, library, and lecture halls catering to the present day requirements.

FOSTERING ALL-ROUND GROWTH

Apart from a healthy academic atmosphere and renowned faculty, the institute provides ample exposure to students for an all rounded growth through various technical and cultural committees and clubs.



Source: UIET PU Official (Facebook Cover Image)

UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY

PANJAB UNIVERSITY,
SECTOR-25,
CHANDIGARH

University Institute of Engineering and Technology (UIET) is the department of engineering and technology at Panjab University, Chandigarh, which is recognized as a Tier-1 institute by NIRF. UIET has prospered by leaps and bounds over the years achieving great academic heights besides continuously producing quality engineers that go on to contribute in different areas of life.

CULTIVATING INNOVATION AND RESILIENCE

UIET has empowered students to take on rigorous challenges in their upcoming lives. The atmosphere of creativity and the enterprising attitude of the students have promoted a spirit of innovation, which has further strengthened its fundamentals in a short span of time.

About I.T. Department

Vision

The Department of Information Technology aims to develop Information Technology engineers who work professionally and creatively for the advancement of technology and betterment of society.

Mission

- To impart quality education by developing information technology facilities, faculty and resources that generate professionals who are leaders for a dynamic information society.
- To develop a collaborative culture, so as to nurture an environment of increased research amongst the students and faculty.
- To encourage hands-on learning by fostering industrial partnerships to create real-world solutions through innovation, product development, entrepreneurship and consultancy services.
- To enhance human potential by encouraging transparency and accountability amongst all stakeholders, in order to nurture ethical values in students.

The IT Editorial Committee

INSPIRE | INFORM | IMPACT



The IT Editorial Committee at UIET, Punjab University, is a team dedicated to bringing students the latest insights, trends, and stories, highlighting the achievements and activities of the Information Technology department. The committee's mission is to inspire, inform, and positively impact students by showcasing accomplishments in technology, sports, and personal projects.

It encourages excellence, recognizes individual efforts, and strengthens the department's culture, motivating students to excel in the field. A key aspect of the committee's work is covering a wide range of student achievements, including technological innovations, sports accomplishments, club involvement, personal projects, and entrepreneurial efforts.

Keeping readers informed on the latest developments in the tech world is another priority. The committee provides information on new trends, discoveries and career opportunities, helping students stay informed about the real world happenings.

It fosters collaboration and continuous growth, contributing to the department's reputation as a centre of innovation and excellence in IT education while also inspiring students to reach their full potential.

Through these efforts, The IT Editorial Committee works to build a strong sense of community within UIET.

Words from 3rd-Year Editorial Leads

**Aru
Sharma**

UE228024



“

As we move through another academic year, it's exciting to see the energy and creativity in our college. Each of us brings something unique, and together, we make our community stronger. This magazine captures various experiences, challenges, and successes of various individuals. Let it inspire us to keep growing, trying new things, and supporting each other. I hope you enjoy reading it and feel motivated to make this year the best it can be!

**Pragya
Sharma**

UE228079



”

Crafted with clarity, creativity, and inspiration, this edition is designed to highlight key updates and achievements within our community. From the latest placement statistics to introductions of our IT branch teaching staff and celebrations of student accomplishments, this newsletter aims to provide an engaging and informative overview. We hope it not only informs but also inspires our readers. Enjoy exploring the latest insights and updates!

Words from 2nd-Year Editorial Leads

**Sanya
Gupta**

UE238091



“

I am proud to present the latest edition of our IT department's annual newsletter. It beautifully captures the vibrant and memorable moments of college life, celebrates the hard earned achievements of our peers and provides valuable insights into placement statistics of the year. This edition serves as a source of inspiration, allowing the upcoming students to learn from the accomplishments of their seniors and strive for greater success. The newsletter is the result of the collective efforts and persistent dedication of our entire team. I hope that every UIETian enjoys reading the IT Editorials Annual Newsletter 2023-24!

**Jasleen
Kaur**

UE238042



”

As we release the latest edition of our newsletter, it is an attempt to bring forward the achievements of the students of our department in various fields, be it academic, technical, or co-curricular. We hope it motivates our readers to keep doing good and bringing laurels to the university. Enjoy reading it and watching our college mates doing great things!

Faculty

Co-ordinator : Prof. Dr. Amandeep Verma

Professor : Prof. Dr. Krishan Kumar
Prof. Dr. Roopali Garg
Prof. Dr. Inderdeep Kaur
Prof. Dr. Veenu Mangat
Prof. Dr. Mandeep Kaur
Prof. Dr. Amandeep Kaur

Associate Professor : Dr. Monika
Dr. Sukeksha Sharma
Dr. Raj Kumari

Assistant Professor : Dr. Neelam Goel
Dr. Rajni Sobti
Dr. Sukhvir Singh
Dr. Rajneesh Singla

Programming Team : Mr. Arun Dhawan
Scientific Officer
Dr. Vikas Bali
Assistant Technical Officer



Student
Publication

Fused framework for glaucoma diagnosis using Optical Coherence Tomography (OCT) images

Co-Authored By :

Janmejai Singh Minhas (UE198048)

Name of Journal:

Expert Systems With Applications

Year of Publication:

September 2022

Publisher :

Elsevier

Scan the QR code
to access the full
article :



Source: EyeMantra (<https://eyemantra.in/retina/optical-coherence-tomography/>)

Abstract

Glaucoma is the second leading cause of vision loss induced by impairment of the optic nerve. Manual procedure for diagnosing glaucoma is associated with several challenges such as human error and time consumption, due to which an alternative technology assisted diagnosis methodology is preferable. The preponderance of research involves machine learning or deep learning for classification of glaucoma, and employs the commonly used imaging modalities, fundus imaging and Optical Coherence Tomography (OCT) for classification of an eye as Normal or Glaucomatous. A fused framework has been proposed for the same, which involves fusion of predicted classes from machine learning and deep learning techniques using Major Voting and Weighted Decision Fusion. This research work further explores the variability in predicted classes and identifies an optimum prediction threshold for comparison with existing techniques. Based on experimentation performed, a Precision of 0.95, Recall of 0.97 and F1-Score of 0.96 have been observed for the proposed Major Voting Fusion Framework, which outperformed k-Nearest Neighbours (0.93, 0.97, 0.95), Random Forest Classifier (0.94, 0.92, 0.93), Support Vector Machines (0.92, 0.94, 0.93) and 3D-Convolutional Neural Network (0.91, 0.91, 0.91) based deep learning approach. Gradient Weighted Class Activation Maps (Grad-CAMs) are also plotted to assist medical experts in diagnosis. The proposed framework could be beneficial for examining glaucomatous patients using OCT images. The higher F1 Score also indicates robustness of our approach on an uneven number of normal and abnormal samples in the dataset as well.



Student
Publication

A Piano Tune Generation Model Using Deep Learning

Co-Authored By :

Tushar Srivastava (UE168113), Yuvraj (UE168119),
Monika (UE168068)

Name of Book : Proceedings of the 14th
International Conference on Soft Computing
and Pattern Recognition (SoCPaR 2022)

Year of Publication : December 2022

Publisher : Springer

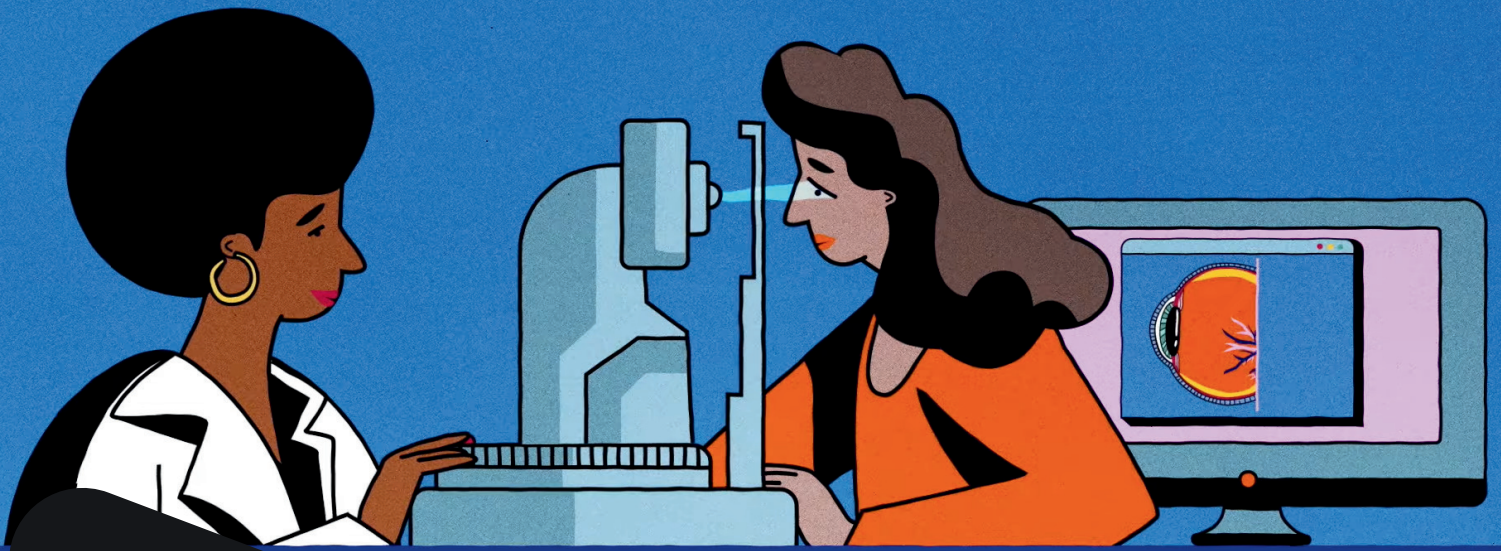
Source: AI-generated via ChatGPT

Abstract

Among all signal streams, music is one of the most dominating signals. Due to this, the techniques used for extracting and reproducing musical structure have attracted the attention of many researchers around the world. Deep learning techniques that can be applied for music generation have potential not only for academics but also for commercial applications. In music, every melody contains a temporal structure which can be defined with the help of a meter. A number of deep learning techniques are used to learn these temporal structures. One such technique is recurrent neural network which is suitable for this task. However, the standard recurrent neural network has certain limitations due to which LSTM is used in this work for music generation. In this paper, a piano tune generation model is proposed based on bidirectional LSTM. The proposed model is trained separately to handle three different genres namely: ragtime, Christmas, and rap. Different experiments are conducted to test the performance of the model. The training accuracy achieved for each genre is above 95%. The proposed model can be used to generate new piece of piano music which further can be utilized for commercial purposes.

Scan the QR code
to access the full
conference paper :





Student
Publication

Autoencoder-based dense denoiser and block-based wiener filter for noise reduction of optical coherence tomography

Co-Authored By :

Shatabarto Bhattacharya (UE208097)

Name of Journal :

Computers and Electrical Engineering

Year of Publication :

May 2023

Publisher :

Elsevier

Scan the QR code
to access the full
article :

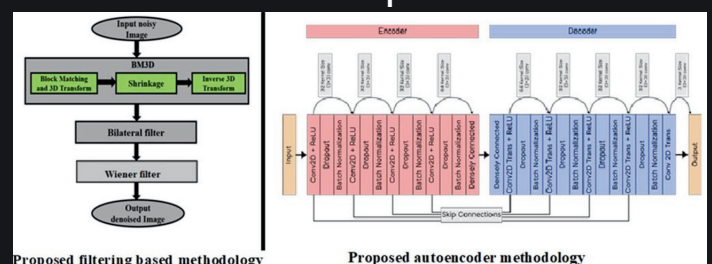


Source: Screenshot from "Optical Coherence Tomography: A New Way of Seeing" by Albert and Mary Lasker Foundation (YouTube).

Abstract

Optical Coherence Tomography (OCT) is an advanced imaging modality used for diagnosis of retinal abnormalities. OCT is acquired using low coherence light waves, typically infra-red waves having resolution in micrometres so as to capture the retinal layers present in the eye. Analysing variation in thickness of different retinal layers using OCT can be used for diagnosis. However, these layers are not clearly visible due to the presence of varying amounts of speckle noise, due to which the efficacy of further diagnosis gets compromised. Despite multiple approaches being available for denoising of OCT images, an undesirable over smoothing of images, leads to loss of structural edge details, thereby leading to inaccurate diagnosis. Thus, an efficient approach that removes speckle noise, without compromising on the significant image details, is preferred. This paper presents an approach to eliminate the speckle noise from OCT images using an Autoencoder-based Dense Denoiser (ADD) neural network and Block-based Wiener Filter (BBWF).

Graphical Abstract



Source: Image from Autoencoder-based dense denoiser and block-based Wiener filter for noise reduction of optical coherence tomography by Mamta Juneja, Gurunamoh Singh Chhatwal, Shatabarto Bhattacharya, Niharika Thakur, Prashant Jindal, published in Computers and Electrical Engineering (Vol. 108, May 2023, 108708), ScienceDirect.

Student
Publication

Denoising of magnetic resonance images of brain tumor using BT-Autonet

Co-Authored By :

Raag Bhutani (UE208080)

Name of Journal :

Biomedical Signal Processing and Control

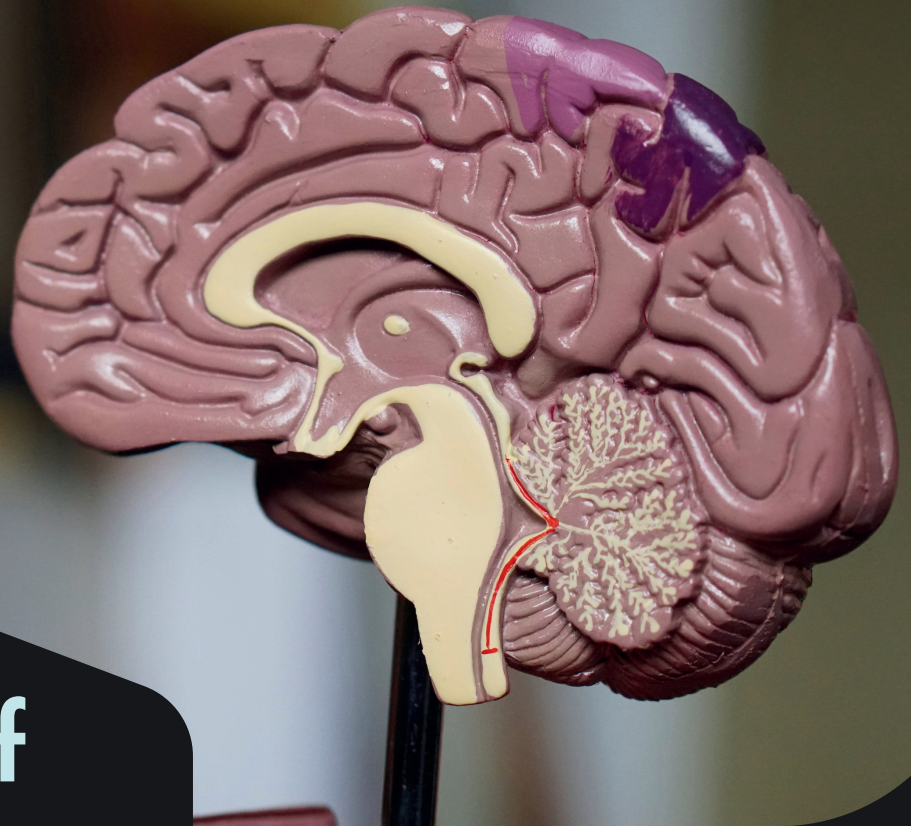
Year of Publication :

January 2024

Publisher :

Elsevier

Scan the QR code
to access the full
article :



Source: Unsplash | Photographer: Robina Weermeijer

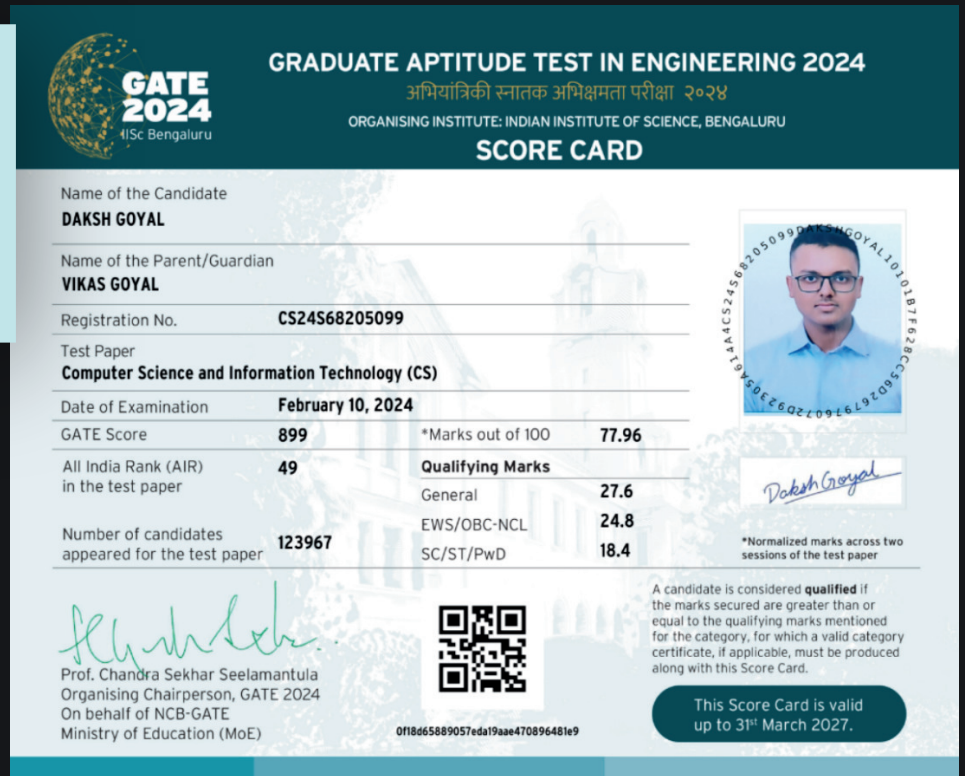
Abstract

While obtaining medical images from sources such as Magnetic Resonance Imaging (MRI), Computed Tomography(CT), and ultrasound, noise is observed within images obtained from real world situations. Often this noise is caused due to vibrations of magnetic coils caused by quick electrical pulses, random thermal motion of protons in the tissue, reverberation and refraction artifacts. Denoising technique is one of the critical aspects in the Computer-aided Diagnosis (CAD) system, since MRI is susceptible to noises like Gaussian, Rician and Rayleigh. Traditional methods for MRI denoising are prone to challenges such as loss of information, loss caused during compression and retention of edge features. Hence, this paper presents a comparative analysis of various image denoising methods and hence, proposes an autoencoder based network Brain Tumor (BT)-Autonet for the removal of noise from brain MRI. Further, the performance analysis of the various denoising approaches is measured using different metrics. The proposed network BT-Autonet for 128×128 image dataset achieves a Peak Signal-to-Noise Ratio (PSNR) of 30.788, Mean Square Error(MSE) of 25.179, Structural Similarity Index Measure(SSIM) of 0.9 for Gaussian Dataset. It achieves a PSNR of 27.952, MSE of 23.129, SSIM of 0.861 for Rician Dataset and PSNR of 25.329, MSE of 44.378, SSIM of 0.873 for Rayleigh Dataset with an execution time of 10.5 s for Gaussian Dataset, 11 s for Rician Dataset and 11 s for Rayleigh Dataset. For 256×256 image dataset, BT-Autonet achieves a PSNR of 30.452, MSE of 30.036, SSIM of 0.816 for Gaussian Dataset while PSNR of 29.64, MSE of 41.684, SSIM of 0.809 for Rician Dataset and PSNR of 12.818, MSE of 67.219, SSIM 0.279 for Rayleigh Dataset with an execution time of 25 s for Gaussian Dataset, 27 s for Rician Dataset and 26 s for Rayleigh Dataset during the examination. Therefore, the proposed network outperformed the existing models in PSNR, SSIM, MSE and execution time.

Curricular Achievements

1

Daksh Goyal
(UE208029)
secured AIR 49 in
GATE CSIT 2024.



GATE 2024
IISc Bengaluru

GRADUATE APTITUDE TEST IN ENGINEERING 2024
अभियांत्रिकी स्नातक अभिक्षमता परीक्षा २०२४
ORGANISING INSTITUTE: INDIAN INSTITUTE OF SCIENCE, BENGALURU
SCORE CARD

Name of the Candidate
DAKSH GOYAL

Name of the Parent/Guardian
VIKAS GOYAL

Registration No. **CS24S68205099**

Test Paper
Computer Science and Information Technology (CS)

Date of Examination **February 10, 2024**

GATE Score	899	*Marks out of 100	77.96
All India Rank (AIR) in the test paper	49	Qualifying Marks	
		General	27.6
		EWS/OBC-NCL	24.8
		SC/ST/PwD	18.4

Number of candidates appeared for the test paper **123967**

*Normalized marks across two sessions of the test paper

A candidate is considered **qualified** if the marks secured are greater than or equal to the qualifying marks mentioned for the category, for which a valid category certificate, if applicable, must be produced along with this Score Card.

This Score Card is valid up to 31st March 2027.

Prof. Chandra Sekhar Seelamantula
Organising Chairperson, GATE 2024
On behalf of NCB-GATE
Ministry of Education (MoE)

018d65889057eda19aae470896481e9



2

Shatabarto Bhattacharya

(UE208097)

Contributed in GSOC 2022 at MetaBrainz and mentored a project for GSOC 2023.

Currently leading the Tech and Quants Team at LlamaRisk

Working as a Senior Risk Analyst at Block Analitica .

Curricular Achievements



3

Jasjeet Singh

(UE218049)

got accepted in **Google Summer of Code 2023** in MetaBrainz, contributing to the feed section in their android app.

Co-Curricular Achievements

Bharat Kumar
(UE238026)

Achieved the Bronze medal in 42nd North Zone Shooting Championships at 25 Meter Standard Pistol Junior Men held from 26th August to 8th September, 2023.



2



Samridhi Chopra
(UE238087)

Won 1st position in Senior Panjab state & Inter district Badminton Championship held from 8-11 November, 2023 at SBS Nagar, Punjab.



3

Harsh Sagwal

(UE218123)

Represented Punjab University for army attachment NCC Army Attachment Camp and participated in a visit to 5 Dogra regiment learning their livelihood in August, 2023.

4

Anirudh Jaggi

(UE238013)

Got second place in 10 meter Air Pistol Inter University Shooting Championship 2024.



5

Disha Thakral

(UE238032)

1. Secured 2nd position in the TINKER@JUGAAD- Mechamaze, held from 20th to 28th Feb 2024 at UIET
2. 1ST Position in UIET vs UILS Basketball Match
3. Got special mention in IPPC at UIET MUN 8.0 held on 6th and 7th April 2024

Arush's ton guides Terrace Zone to trophy

Tribune News Service Chandigarh, September 5 A brilliant ton by Arush Bhandari (156 runs) helped Terrace Zone to beat Rock Zone by 34 runs and win the first edition of the UTCA Domestic U-19 Cricket Tournament, today. Terrace Zone won...

Source: Screenshot from "Arush's ton guides Terrace Zone to trophy" - The Tribune.

1. Represented the Under-23 Chandigarh cricket team at Nationals in 2024
2. The best delegate in IPPC at UIET MUN 8.0
3. Best reply speaker at NITK, APD held in April 2024

6

Aarush Bhandari

(UE238001)

Placement Statistics

Annual Placement Packages from 2019 to 2024



On-Campus



Off-Campus





Events

S.F.D.

Software Freedom Day

On October 7 and 8, a two-day event was organised to celebrate 'Software Freedom Day'. The event aimed to raise awareness about 'free' and 'open source software' (FOSS) amongst the students. Various speakers, including entrepreneurs, college alumni and students shared their valuable insights with the attendees, imparting their knowledge of essential skills and inspiring them with their journeys. The program also encompassed sessions on FOSS, Linux, GSoC (Google Summer of Code), Android development, blockchain technology, and backend engineering. The speaker session, led by Mr Ashish Bansal served as a source of inspiration for all the participants, encouraging them to explore their true potential in the software industry. The event also featured engaging quiz sessions with exciting prizes and Q&A segments, providing students with the opportunity to seek guidance from experienced professionals on overcoming career-related challenges. The enthusiasm for the software industry exhibited by both the participants and the contributors was truly inspiring.

LEGACY



The Cultural Fest

'LEGACY' is a yearly cultural festival organised by the Brand Promotion Club (BPC) of UIET. Students from all branches participated in various cultural activities and entertaining events, creating memorable experiences. In 2023, BPC collaborated with different clubs of UIET to organise LEGACY 6.0. Each club set up stalls offering a variety of enjoyable games and exhibitions. Exciting activities such as Roll and Goal, Futsal 5v5, Code Connect (a hackathon), and Coffee N' Code attracted sports and tech enthusiasts.



Interactive Games

Additionally, interactive games like Jackson's Syndrome, Toon Trivia, Murder Mystery, and Rat in The Maze, Art Competition received active participation. The evening brought entertaining shows such as UIET's Got Talent, stand-up comedy, dance performances, drama presentations, and musical performances, all impeccably organised by the committee.



Events

Alumni Meet 2023

The Alumni Meet 2023 marked a great event for the college as the Alumni Affair Cell welcomed back the esteemed alumni for an unforgettable meetup.

From tech innovators to corporate leaders, our distinguished guests shared candid accounts of their post-college journeys, offering loads of insights and advice.

The event was a vibrant blend of nostalgia, with alumni reminiscing about their college days while serving as a source of inspiration for the students to evolve professionally.

The alumni enjoyed playing various games, indulging in delicious food and taking a trip down memory lanes, remembering their college days.





Events

- 'GOONJ' is the annual cultural festival of UIET organised by the college students. GOONJ 2024 provided students with a wide range of opportunities for exploration by conducting a wide range of events in various domains. Some of the events from multiple domains included:
- Cultural Events: Groove Up (Dance Competition), Bhangra Wars, Comedy Hunt, Solo Singing, Monologue, Garjan: Nukkad Natak

- Fun Events: Online Fifa Tournament, Valorant Tournament, IPL Auction, 2v2 Cricket, 3v3 Basketball, Human Ludo.
- Technical Events: Debug Quest, Market Me Strange, Technovate: 24-hour Hackathon, Ideathon, Dementia, ML Ware
- Quizzes: Anime Quiz, Tech Trivia, Politia and many more!

Goonj 2024

Along with the events, the stage was lit up by standup comedy shows, Kavi Sammelan, melodious songs and enthralling dance performances that enlightened the atmosphere. Where on one hand, the stand-up comedian Parvinder Singh expanded the waves of laughter among the audience on the other end singer Kulwinder Billa made the audience make their moves on the ground with his energising performance.



UIETMUN 8.0 was a 2-day debating event organised by the debating society of UIET. The event was aimed at imparting knowledge about diplomacy, international relations, and the functioning of the United Nations. The event saw enthusiastic participants as they engaged in in-depth discussions on a wide array of pertinent issues across various committees

THE UIET MUN 8.0



The Improving bilateral relations with emphasis on geopolitical, economical and cultural issues was discussed and debated upon in the The Indo-Pak Peace Committee.

United Nations Human Right Council (UNHRC) focused on the agenda of Promotion and Protection of refugee rights, with special emphasis on Ukraine, Afghanistan, and Palestine.

The agenda for United Nations Security Council (UNSC) was Balancing the principle of state sovereignty with the responsibility to protect the population from war crimes and crimes against humanity.

United Nations General Assembly (UNGA) laid emphasis on Addressing the criminal accountability of United Nations officials and experts on missions.

Lok Sabha was centered around Reviewing last five years of NDA Government in context of then upcoming Lok Sabha Elections.

Acknowledgments

This newsletter has been developed under the esteemed guidance of **Dr. Amandeep Verma**, (Coordinator, Information Technology) , along with **Dr. Mandeep Kaur and Dr. Raj Kumari** , Faculty Incharges, Student Activities.

We extend our heartfelt appreciation to **Keerat Punia (UE238044)** for her exceptional vision and dedication in designing the entire layout of this newsletter.

A special thanks to **Arindam Gupta (UE238018)**, **Divyam Goyal (UE238033)**, **Gourav(UE238037)** and **Raghav Gupta (UE238075)** for their meticulous efforts in curating and formatting the content with precision.

We sincerely acknowledge the contributions of all IT Editorial Committee members whose dedication and teamwork have been instrumental in bringing this edition to life.

Lastly, we express our gratitude to **Imagen**, the Photography Society of UIET, for their unwavering support in capturing and providing media coverage for all college events.

Gratitude is extended to everyone whose efforts contributed to the successful completion of this publication.

Recent updates and news are invited for inclusion in the upcoming edition of the Annual Newsletter.

Please share your contributions via email with the **IT Editorial Committee** at iteditorialuiet@gmail.com

or directly with

Dr. Mandeep (Faculty Incharge Student Activities) at mandeep@pu.ac.in and

Dr. Raj Kumari (Faculty Incharge Student Activities) at rajkumari@pu.ac.in .

Technology evolves, and so do we.
Stay tuned for the next version !



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Sector 25, South Campus, Panjab University

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