



**PANIPAT INSTITUTE OF
ENGINEERING & TECHNOLOGY**

(Approved by AICTE, New Delhi & Affiliated to Kurukshetra University, Kurukshetra)

CSE MESSENGER

2022 || VOL. 7

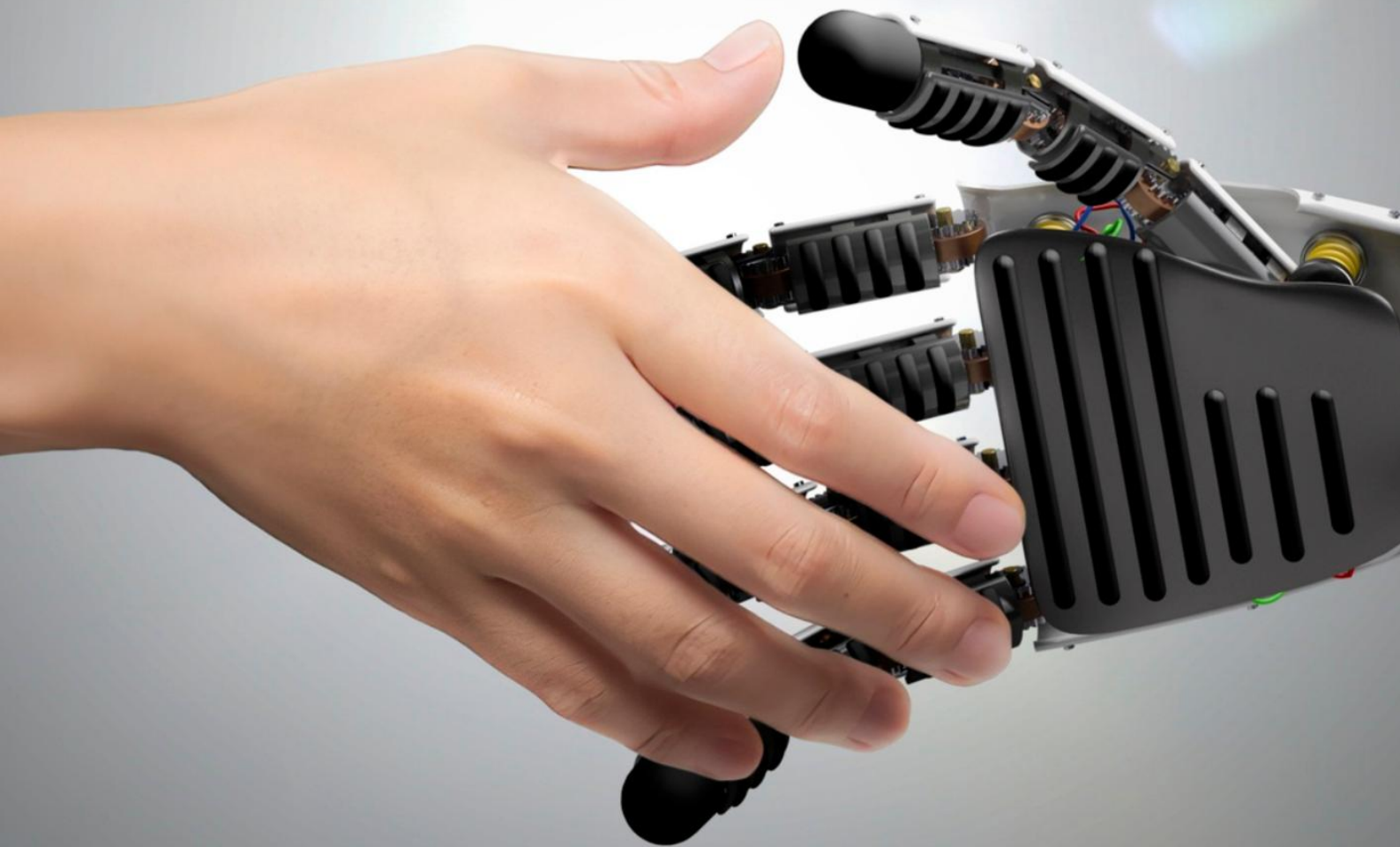


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Vision Of The Department

To be a Centre of excellence in Computer Science & Engineering imparting quality education, competencies, skills, attitudes, and values while fostering research to create professionals capable of analyzing, designing and developing computing systems for a sustainable future of mankind.

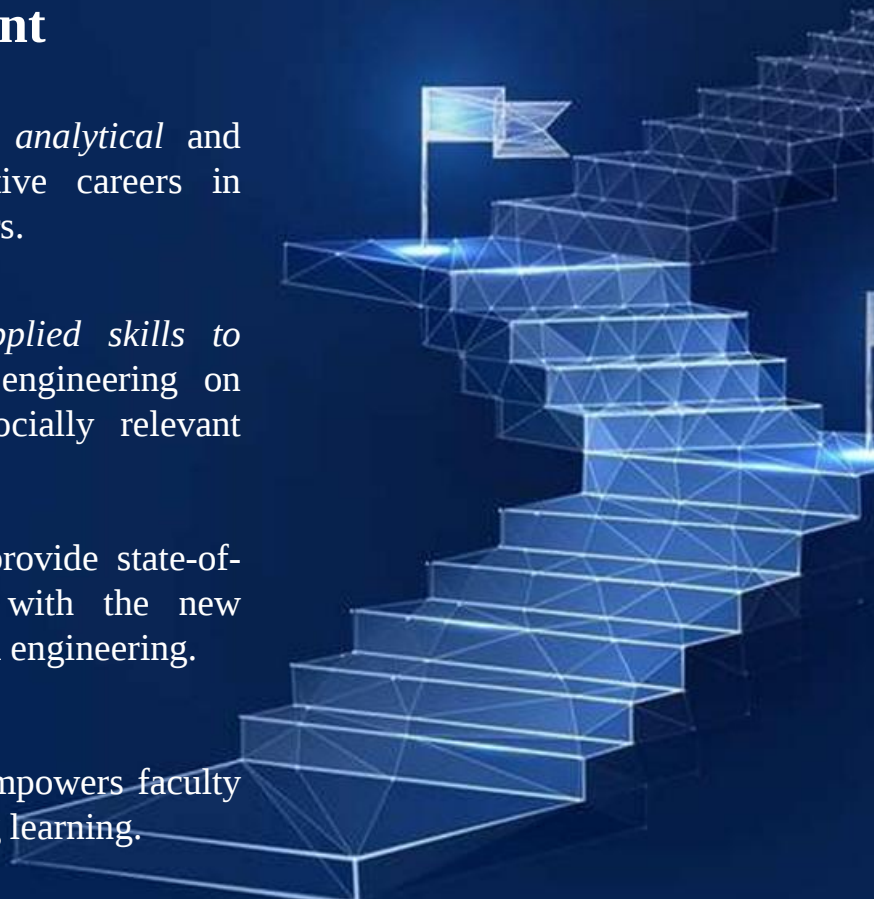
Mission Of The Department

M1: To develop professionals with *analytical* and *technical competencies* for productive careers in industry, academia and as entrepreneurs.

M2: To impart *theoretical and applied skills* to *students* in computer science and engineering on industrially, environmentally, and socially relevant issues.

M3: To continuously improve and provide state-of-the-art laboratories to keep pace with the new advancements in computer science and engineering.

M4: To create an environment that empowers faculty and nurtures students towards life-long learning.



Program Educational Objectives (PEOs)

PEO1

To develop in-depth problem-solving and technical skills in students to establish themselves in industry, academia, entrepreneurial ventures and pursuit of higher studies.

PEO2

To acquire theoretical concepts and applied knowledge to address industrial, environmental, and societal challenges by developing innovative solutions.

PEO3

To adapt emerging technologies by utilizing state-of-the-art laboratories and advanced tools for research, development, and life-long learning.

PEO4

To develop leadership, communication, and teamwork skills while fostering ethical and evolving attitudes to contribute effectively to society.

About Us

The Department of Computer Science and Engineering is enriched with competent and well qualified faculty members to bring out the best in students. Ever since its inception, the Department has always been on a high growth pace with a strong dedication to provide engineering education. The department has well equipped laboratories with internet, web application facilities accessible on LAN and Wi-Fi are available students to provide them hands-on experience on latest soft wares and technology friendly tools used in the industries. Seminars, corporate training, workshops are conducted by experts to prepare students as future software professionals. PDP classes are conducted to pour add-ons to their technical skills. Many of our students graduated through campus, find placements in more than one organizations.

As the CSE engineering graduates are trained to understand the broad social, economic & ethical implications of their work & to be cognizant of their professional responsibilities. In current session department has conducted two international conferences International Conference on Computational Intelligence and Mathematical Applications (ICCIMA 2023) and International Conference On Computational Intelligence and Computing Applications (ICCICA 2024). ICCIMA 2023 is financially sponsored by AICTE and ICCICA 2024 is academically sponsored by AICTE and technically co-sponsored by IEEE.

The Department has also organized various STC programs at PIET in collaboration with NITTTR, Chandigarh. The Institute has also been designated as nodal center by IIT, Delhi for Virtual Labs. Various educational tours, trips are organized by the department at regular intervals.

Message From Director's Desk



It is a pleasure to present to our readers this new edition of our Computer Science magazine, *CSE Messengers*, which reflects the rapidly evolving technological landscape and the bright minds driving its progress.

Computer Science & Engineering continues to transform the way we live, learn, and connect. From breakthroughs in artificial intelligence and advancements in cybersecurity to the promise of emerging fields like quantum computing, the scope of innovation is truly vast. This magazine offers a glimpse into that exciting journey, providing insights, perspectives, and ideas from across our vibrant community.

I extend my sincere gratitude to our editorial team for their exceptional efforts and dedication. Their ability to bring together diverse voices, curate relevant content, and uphold the quality of this publication is truly commendable. We hope that these pages spark curiosity, provoke thought, and inspire you to explore new frontiers in Computer Science.

Let us continue to innovate, collaborate, and shape the digital future - together.



Prof (Dr) Shakti Kumar
Director

Message From HOD's Desk



It gives me immense pleasure to lead the department of CSE. Our College is one of the premier institutions, unique like a prism reflecting the manifold shades of learning and co-curricular activities. The very motto of department is to provide quality education. The process of learning is extremely important in life. What you learn, how you learn and where you learn play a crucial role in developing one's intellectual capability, besides career. Our curriculum is designed to provide a solid foundation in both theoretical and applied aspects of computer science, with opportunities for students to specialize in areas such as Artificial Intelligence, Data Science, Cyber security, and Software Engineering. We emphasize a hands-on learning approach through industry partnerships, internships, workshops, and project-based learning.

A handwritten signature in blue ink, appearing to read 'S. C. Gupta'.

Prof (Dr) S. C. Gupta
HOD, C.S.E.

Editorial Team



**Mr. Vikas
Sethi**

**ASSISTANT
PROFESSOR**



TRIPTI

2 nd YEAR



VEER

2 nd YEAR

IDEATION WORKSHOP



The AICTE IDEA Lab Sponsored 6-Day Ideation Workshop (Phase 4) at PIET on 11th to 16th April, 2022 was designed to advance the skills of students in innovative thinking and problem-solving. Building on the successes of the previous phases, this workshop aimed to enhance participants' abilities to conceptualize, design, and prototype solutions to real-world challenges. The primary objective of Phase four was to further refine the creative skills of participants, enabling them to transform their ideas into tangible prototypes. The workshop focused on bridging the gap between theory and practice, emphasizing the importance of innovation in today's rapidly evolving technological landscape. The participants were supported by faculty mentors, who provided guidance and encouragement throughout the workshop.



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Twitter sentiment analysis using ensemble based deep learning model towards COVID-19 in India and European countries

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ABSTRACT

As of November 2021, more than 24.80 crore people are diagnosed with the coronavirus in that around 50.20 lakhs people lost their lives, because of this infectious disease. By understanding the people's sentiment's expressed in their social media (Facebook, Twitter, Instagram etc.) helps their governments in controlling, monitoring, and eradicating the coronavirus. Compared to other social media's, the twitter data are indispensable in the extraction of useful awareness information related to any crisis. In this article, a sentiment analysis model is proposed to analyze the real time tweets, which are related to coronavirus. Initially, around 3100 Indian and European people's tweets are collected between the time period of 23.03.2020 to 01.11.2021. Next, the data pre-processing and exploratory investigation are accomplished for better understanding of the collected data. Further, the feature extraction is performed using Term Frequency-Inverse Document Frequency (TF-IDF), GloVe, pre-trained Word2Vec, and fast text embedding's. The obtained feature vectors are fed to the ensemble classifier (Gated Recurrent Unit (GRU) and Capsule Neural Network (CapsNet)) for classifying the user's sentiment's as anger, sad, joy, and fear. The obtained experimental outcomes showed that the proposed model achieved 97.28% and 95.20% of prediction accuracy in classifying the both Indian and European people's sentiments.

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1. Introduction

COVID-19 is a novel viral disease, where the first case is observed in china during December 2019, and it infected over 24.80 crore people worldwide by November 2021, causing an estimated deaths of 50.20 lakhs people [1–3]. Many strategies are followed to decrease the number of infected people such as business closures, self-quarantines, travel bans, and social distancing measures that significantly transforms the society structures all around the world [4]. The vaccination procedure started in several nations for preventing their people from serious ill with COVID-19 disease [5]. In this pandemic circumstance, the social media platforms such as Twitter, Instagram, Facebook, WhatsApp, etc. helps in gathering insightful information related to COVID-19 disease [6–8]. The content about medical services, epidemic sign and the communities affected by COVID-19 disease outbreaks [9]. Compared to other

social media sites, the twitter is effective in sharing informative messages with a length of 280 characters. Active users tweets has multiple insightful information about location and travel history of the patients, cases recovered, suspected and confirmed, and the symptoms of the patients like body pains, running nose, headache, fever and cold [10]. The COVID 19 related tweets are labelled as 'informative' tweets, and the irrelevant user tweets are labelled as 'uninformative' tweets [11,12]. The objectives of this study are given as follows: (i) automatically finds European and Indian people's sentiments expressed on Twitter platform related to COVID-19, and (ii) identifies the most discussed topics by the twitter users while expressing their emotions about COVID-19 [13–15]. The major contributions of this study are determined below:

- After real-time twitter data collection, the data pre-processing is accomplished to eliminate special characters, punctuations, numbers, repeated words, non-English characters, hashtag symbols, un-necessary spaces, tabs and newlines from the tweets for better user's sentiment prediction.
- Further, the exploratory investigation: key word trend investigation and topic modeling is carried out for better understanding of the collected data. In addition, the feature extraction is

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Beta Up Your Mind



**PANIPAT INSTITUTE OF
ENGINEERING & TECHNOLOGY**

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DATA SCIENCE SQUAD (Datalytics)
presents

BETA UP YOUR MIND

AN INTER-COLLEGE PROJECT DEMONSTRATION COMPETITION



26th April, 2022



**PANIPAT INSTITUTE OF ENGINEERING AND
TECHNOLOGY, SAMALKHA, PANIPAT.**

WE WELCOME YOUR INNOVATIVE PROJECTS BASED ON DATA SCIENCE, DATA ANALYSIS, IoT, AIML, and CS, EACH OF THESE EMERGING TECHNOLOGY DISCIPLINES HAS ITS OWN EXCELLENCE. STATISTICIANS BRING RIGOR, ML ENGINEERS BRING PERFORMANCE AND ANALYSTS BRING SPEED.

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STUDENT COORDINATOR
SUJAL SETHI (8869819865)
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An inter college project demonstration competition "Beta-up your mind" was organized by the members of Data Science club (Datalytics) on April 26, 2022. Various teams from Haryana, Delhi-NCR participated in the event. The aim of this competition was to get better understanding of emerging technology discipline & discover new and innovative ideas using them that has its own excellence so that they will be converted it a novel idea. They presented exclusive and different ideas and at last 10 teams were finalized

World Youth Skills Day



The Institute Of Innovation Council (IIC) and AICTE IDEA LAB at the Panipat Institute of Engineering and Technology, Samalkha, Haryana celebrated World Youth Skills Day on 15 July, 2022 in its esteemed premises.

“Learning new skills can often be life-changing”, was the primary theme of the session and it was truly emphasized in the form of an expert talk delivered by Dr. Saurabh Garg, Chairperson, Entrepreneurship Development Cell, PIET.

A total of 20 faculty members and more than **80** students from the institution attended the session and benefitted out of it in multiple ways.

He motivated the audience by sharing various statistics about the kind of future skills required and skill enhancement resources. The session was highly effective for the young and the budding engineers and faculty in fetching extra-ordinary work opportunities.

FDP

No: ATAL/2021/1629183862



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AICTE Training and Learning (ATAL) Academy

Certificate

This is certified that ANJU, Professor of panipat institute of engineering and technology participated & completed successfully AICTE Training And Learning (ATAL) Academy Offline Elementary FDP on "IDEA LAB FDP - Basic" from 23/08/2021 to 27/08/2021 at Ajay Kumar Garg Engineering College.

Advisor-I, ATAL Academy
Mamta Rani Agarwal



Coordinator

Interaction Session With Alumni

**PANIPAT INSTITUTE OF
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READYme

LIVE
**INTERACTION
SESSION WITH
PIET ALUMNI
(B.TECH CSE)**

Mr. Harpreet Singh

on
**HOW TO GET
SELECTED IN SAP LABS ?**

Date
12th September, 2022
Time
06:00 pm.






Engineers Day



The poster for National Engineers Day features a dark blue background with a gear icon on the left and a blue paperclip at the top. It includes logos for PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY (P.I.E.T.), IECCE, and PIET STUDENT BRANCH. The main title 'NATIONAL ENGINEERS DAY' is in large yellow letters, with the date '15th SEPTEMBER, 2022' below it. A 'HIGHLIGHTS' box lists three items: an expert talk by Prof. (Dr) J.S Saini, a live interaction with Mr. Vikrant Chauhan, and a technical quiz. The event is scheduled for 11:00 am. to 12:00 pm. at Dr. A.P.J Abdul Kalam Auditorium. Contact information 'piet.co.in | 1800 120 6884' is at the bottom.

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IECCE PIET STUDENT BRANCH

NATIONAL ENGINEERS DAY

15th SEPTEMBER, 2022

HIGHLIGHTS

- Expert Talk on "Smart Industries" by Prof.(Dr) J.S Saini, Dean Engineering
- Live Interaction with Alumni Mr. Vikrant Chauhan
- Technical Quiz

11:00 am. to 12:00 pm. Dr. A.P.J Abdul Kalam Auditorium

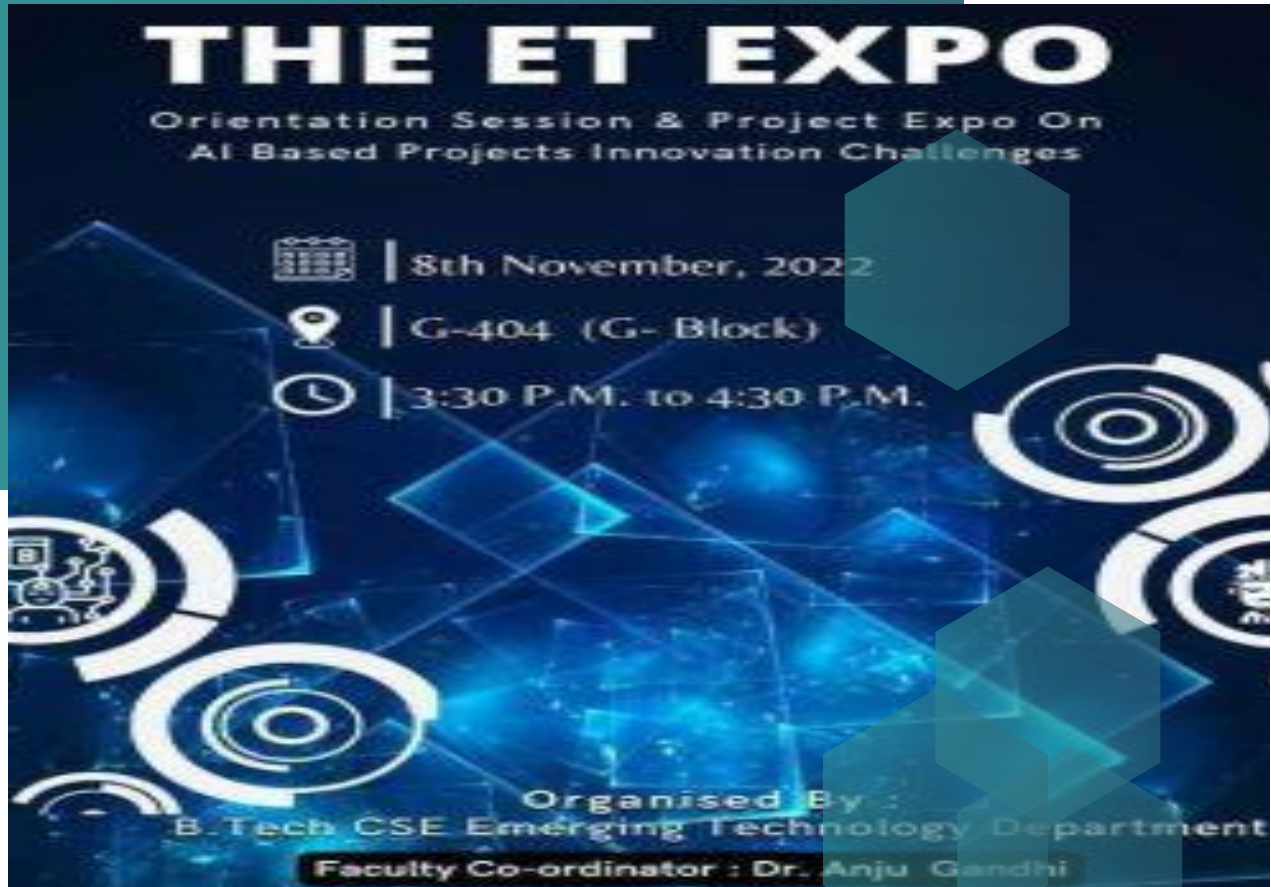
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According to "India Vision 2020 for transforming nation into developed country" of honourable former president of India Dr. APJ Abdul Kalam, not only engineers but everyone should have the ambition to live in a developed country, and for this each one of us show that integrity towards the development of nation.

With this thought, PIET celebrated National Engineer's Day on September 15, 2022 with expert session, talk with an Innovator and Technical Quiz.



THE ET EXPO



Orientation Session & Project Expo on AI Based Projects Innovation Challenges “THE IT EXPO” was intended to introduce emerging research perspectives in the area of machine learning, pattern recognition and soft computing. Innovation Challenges served to be a great platform for students and researchers to upgrade their knowledge and skills. It also aimed to give participants a broader vision.

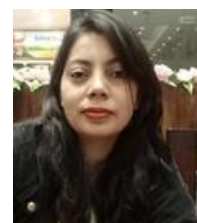
It is a platform for students and researchers to showcase innovative solutions in artificial intelligence. It highlights projects in machine learning, computer vision, NLP, and robotics, encouraging creativity and technical growth. The event fosters collaboration, critical thinking, and practical exposure while bridging the gap between academia and industry. Participants gain insights through expert feedback, workshops, and networking opportunities. Innovation Challenges push individuals to explore real-world problems using AI, helping them upgrade skills and broaden perspectives. Overall, the expo promotes research, entrepreneurship, and the future potential of AI-driven technologies.



The Expanding Role of Virtual and Augmented Reality (VR/AR) in 2023

Big Data and Deep Learning algorithms combined with enormous computing power have paved ways for significant technological advancements. Technology is evolving to anticipate, understand and address our unmet needs. However, to fully meet human needs, machines or computers must deeply understand human behavior including emotions. Emotions are physiological states generated in humans as a reaction to internal or external events.

They are complex and studied across numerous fields including computer science. As humans, on reading “Why don't you ever text me!”, we can either interpret it as a sad or an angry emotion and the same ambiguity exists for machines as well. Lack of facial expressions and voice modulations make detecting emotions in text a challenging problem. However, in today's online world, humans are increasingly communicating using text messaging applications and digital agents. Hence, it is imperative for machines to understand emotions in textual dialogue to provide emotionally aware responses to users. In this paper, we propose a novel Deep Learning based approach to detect emotions - Happy, Sad and Angry in textual dialogues. The essence of our approach lies in combining both semantic and sentiment-based representations for more accurate emotion detection. We use semi-automated techniques to gather large scale training data with diverse ways of expressing emotions to train our model. Evaluation of our approach on real world dialogue datasets reveals that it significantly outperforms traditional Machine Learning baselines as well as other off-the-shelf Deep Learning models.



Ms Deepti Dhingra





FACULTY ARTICLES

Cyber security: Protecting the Digital World

Cyber security has become a critical aspect of modern society, driven by our increasing dependence on digital systems for communication, business, healthcare, and essential services. As the digital world continues to evolve, so do the threats that target sensitive information and disrupt services. Cyber security refers to the comprehensive measures and practices designed to protect computers, servers, networks, and data from unauthorized access, theft, damage, and attacks by malicious entities. In today's interconnected landscape, the significance of cyber security cannot be overstated. It plays a pivotal role in safeguarding sensitive data, such as personal information, financial records, and health details, from being compromised or misused. With cyber criminals continuously developing new tactics, individuals and organizations must stay ahead by employing robust security measures. Effective cyber security is also crucial in ensuring privacy, as it prevents unauthorized entities from accessing and exploiting personal data for illicit purposes. Moreover, cyber security is essential in maintaining business operations. Cyber attacks like ransom ware, data breaches, and Distributed Denial of Service (DDoS) attacks can cripple organizations, causing downtime, financial losses, and damage to reputation. In an age of growing cyber threats, a proactive approach to cyber security is essential for safeguarding the digital future and ensuring global stability.



Tannu
Sharma

PIETian's Bagged 1st Prize in Smart India Hackathon

A complete solution to health-related problems

PIET STUDENTS
CREATED THE
AYURVEDIC APP
AyurAtmik

App makes diet chart on the basis of Vata, Kapha, Pitta, which helps in getting healthy. Medical experts convinced of accurate testing of the app, won the Centre's Smart India Hackathon competition.

Division Of Work : The Success Mantra

Vishal, Akshay Bhardwaj, Naman Narang, Himanshu Kalita, Shashank Joshi and Yashika Sharma played dynamic roles. Everyone played their role and fulfilled their part with complete zeal and enthusiasm. Some worked on data science, some on AI, Shashank focused on app technology. Achieved success while coding continuously for 36 hours in Ranchi.

The Smart India Hackathon (SIH) 2022 was a nationwide initiative aimed at encouraging innovation and problem-solving among students by challenging them with real-world issues presented by various government departments and industries. One of the significant projects undertaken during SIH 2022 was the development of a Face Recognition-Based Attendance System. This project aimed to automate the traditional attendance process and enhance institutional security using cutting-edge technology. The system leveraged machine learning and facial recognition algorithms to identify and verify individuals in real time, reducing reliance on manual entries or biometric fingerprint systems. Designed to be user-friendly and efficient, it ensured accurate recognition even under varying lighting conditions and diverse facial attributes. The project also emphasized seamless integration with institutional databases for automated record management and analytics. Through this project, students demonstrated the practical application of artificial intelligence in solving day-to-day administrative challenges. It not only reduced time and effort but also minimized the chances of proxy attendance and data manipulation. The hackathon provided a valuable opportunity for participants to collaborate, innovate, and contribute to nation-building through technology. Overall, the project exemplified how student-driven solutions can address critical problems, offering scalable and efficient alternatives to traditional methods.

Six students of computer engineering have made such a thing from artificial intelligence and data science, which will predict what disease you have. What kind of diet should you take in the morning, afternoon and night? This app, named AyurAtmik App, was tested on more than fifty people. The information received through the app in the test has been accurate. In the Smart India Hackathon (SIH) competition of the Central Government, this project received the first prize of One Lakh Rupees in cash. Smart India Hackathon (SIH) was started in the year 2017. It is a nationwide initiative to provide a platform to the students in solving the grave issues of social organizations and government. The innovators who built the app are students of Panipat Institute of Engineering & Technology (PIET) in Samalkha. The script for the creation of this app was written when the All India Council for Technical Education (AICTE) decided the topics for SIH and asked students from across the country for ideas on those subjects. PIET's students chose the subject of fitness and sports. The subject was selected by 91 teams from across the country. The team got expert guidance from Professor R.K. Aggarwal, Ayurveda specialist of NIT Kurukshetra.

Contd. On Next page



AI base predictions

As soon as someone logs into the app, they will be asked some questions. Like how much is your weight, what is your height, how is your mood at this time, what do you like to eat, do you get angry very often. Based on similar questions and data, artificial intelligence reveals the nature of Vayu, Pitta and Kapha in the body.

What is the standard for detecting mental stress?

The app will track your mood. Whenever you open the app, it will ask you questions regarding mood. Based on the data of a week, it will tell at what level of mental stress you are. If you score negative marks up to 60% in the total time then you are advised to see a psychiatrist.

Will bring to market soon

Team leader Vishal disclosed that this app will be brought in the market soon. Some improvements are being made in it. Patent process has been initiated.

Psychiatric Advice

The app also predicts whether a psychiatrist's advice is required or not. Questions are asked thrice a day morning, afternoon and evening slots respectively. The AI detects the tension level. If the tension is up to 65 percent, then it is advisable to visit a psychiatrist.

Box for web Test results are accurate

Dr. Deepak Prabhakar Bhagwat, Principal of the Pharmacy Department of PIET and CPCSEA nominee of IIT Ropar, also enlightened the masses in general about the impact of the increase in stomach diseases due to Vata dosha. You understand it like we take oxygen. Air cannot be taken out in the same proportion. Vata dosha increases due to not eating food on time, not sleeping on time. Have some hot food immediately after drinking cold water. The body is affected by such habits. Pitta dosha is bad for the liver. Those who take non-vegetarian diet and alcohol are prone to pitta dosha. The results of the app made by the students have been highly accurate.



REACH US

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