PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

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

Department of Computer Applications-PG

Master of Computer Applications

NEWSLETTER

July-December 2022

Vision , Mission and PEOs Statements

Vision of the Department

To be recognized as a centre of excellence for academic repute to create competent, ethical, and responsible Computer Applications professionals with the abilities to contribute globally to the industry, environment and the society at large.

Mission of the Department

M1: Equip students with knowledge and practical skills in computer applications in line with the needs of the industry.

M2: Foster research and innovation capabilities, imbibe ethics and values, and instill leadership in students to support sustainable development.

M3: To develop students with an analytical mindset and the competence to solve real-life problems.

M4: Facilitate linkages with industry and professional bodies, provide experiential learning opportunities, and develop responsible students with abilities to learn and work independently.

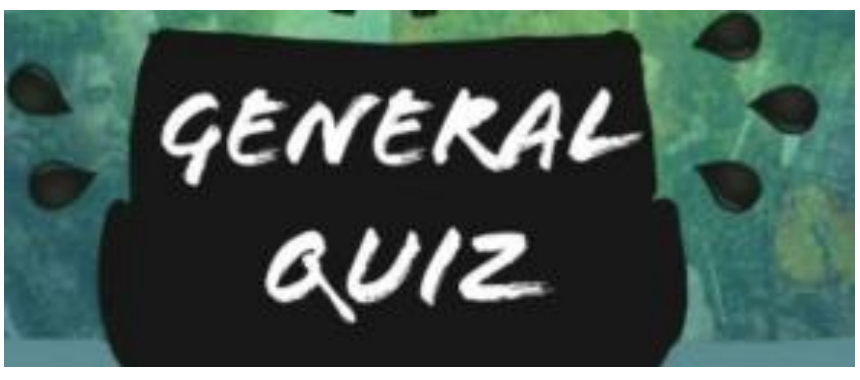
Program Educational Objectives (PEOs)

PEO1: Demonstrate analytical abilities, design skills, multidisciplinary competence, critical thinking, and the ability to foster innovations.

PEO2: Demonstrate leadership and supportive roles in the dynamic work environment with ethical behavior and responsibility in their professions.

PEO3: To excel in careers in the diverse domains of computer applications, higher education, and entrepreneurship.

PEO4: Adapt to evolving technologies with the ability to learn independently.



Q=> Where was Christopher Columbus born?
Q=> Which actress has won the most Oscars?
Q=> Which is the rarest blood type in humans?
Q=> Which state is the biggest in the US?
Q=> How many people have walked on the Moon?
Q=> In which country Halloween was originated?
Q=> Name the Largest Dam of the World

Children's Day Celebration

Children's Day was celebrated with enthusiasm at the premises of Panipat Institute of Engineering and Technology (PIET) by Department of Computer Applications – PG. The event paid homage to Pandit Jawaharlal Nehru's vision of fostering creativity and freedom among children.

The event featured vibrant performances by MCA students, adding a festive spirit to the occasion. The celebration concluded with Dr. Dinesh Verma expressing gratitude to the dignitaries, staff, and students, and presenting tokens of appreciation to the attendees.

Edge Tech-2022

The Department of Computer Applications-PG organized **Edge Tech-2022**, a PowerPoint presentation competition focused on emerging technologies.

The competition aimed to enhance students corporate communication, public speaking, and self-learning skills by encouraging them to explore and present cutting-edge technological advancements. Participants demonstrated their knowledge and creativity by delivering insightful presentations on various emerging technology trends.

The event provided a platform for students to share their ideas, improve their presentation skills, and gain valuable exposure to public speaking. Faculty members appreciated the participants' efforts and encouraged them to stay updated on technological innovations.

Value-Added Course on "Introduction to Data Science"

The **Department of Computer Applications (PG)** proudly announced the successful completion of the value-added course titled **"Introduction to Data Science"**, which was conducted from **September 17, 2022, to December 17, 2022**.The curriculum covered essential topics such as data analysis, visualization techniques, statistical modeling, and introductory machine learning concepts. Students had the opportunity to engage in hands-on exercises, applying their knowledge to solve real-world problems under the guidance of expert faculty members. Participants expressed their appreciation for the well-structured course, which not only enhanced their technical skills but also prepared them for future academic and industry challenges. The successful completion of this course underscores the department's commitment to academic excellence and its focus on equipping students with cutting-edge skills in emerging fields.

International Conference on Futuristic Computation Techniques

The International Conference on Futuristic Computation Techniques: Approaches, Implementations, and Applications was held on **16th and 17th December 2022**, bringing together a diverse group of participants, including undergraduate and postgraduate students, research scholars, faculty members, and industry experts. Chaired by Dr. Dinesh C. Verma, with Dr. Monika as the Convener and Dr. Neha Goyal as the Co-Convener, the conference provided a vibrant platform for practitioners and educators from engineering and industrial fields to share their latest rese arch, innovative ideas, and best practices.

The two-day event focused on the rapidly evolving field of computational technologies, which are transforming industries with their growing demand for computational power. Participants explored the critical role these technologies play in revolutionizing science and technology, with discussions centered on futuristic computational techniques, their approaches, implementations, and diverse applications. Key areas of focus included healthcare, education, image processing, artificial intelligence, and robotics, showcasing the potential of computational advancements to address real-world challenges and shape a better future.

In addition to providing a forum for exchanging knowledge, the conference facilitated valuable networking opportunities, enabling delegates to share new ideas and application experiences while fostering research and business collaborations. The event successfully highlighted the transformative impact of computational technologies, leaving participants inspired and equipped with fresh insights to drive innovation in their respective fields.

Talent Hunt 2K22: A Spectacular Showcase of Creativity

The much-awaited **Talent Hunt 2K22**, organized by the Chill-In Club of the Department of Computer Applications - PG, took place on **September 30, 2022**, with immense enthusiasm and participation. This annual event serves as a vibrant platform for students to showcase their talents in various creative fields, including solo dance, group dance, solo singing, poetry, and anchoring.

The event witnessed an overwhelming response, with **50 students** participating and competing against each other in a spirited display of skill and creativity. The participants mesmerized the audience with their outstanding performances, demonstrating not only their abilities but also inspiring their peers to discover and showcase their hidden potential.

One of the highlights of Talent Hunt 2K22 was the diverse range of performances, which included captivating solo dances, soulful singing, thought-provoking poetry, and a thrilling anchor hunt competition. The event underscored the commitment of the Chill-In Club to provide a platform that nurtures and grooms the personalities of the students, fostering confidence and creativity.

The event concluded on a high note, leaving everyone inspired and looking forward to next year's edition of Talent Hunt. Congratulations to all the participants for their magnificent performances and to the Chill-In Club for organizing yet another successful and memorable event.

Diwali Bash 2K22: A Festive Celebration of Talent and Fun

The **Diwali Bash 2K22**, organized by the Chill-In Club, was held on **21st October 2022**, marking the festive season with vibrant activities and enthusiastic participation. The event featured two key segments – the **Food Without Fire** competition and a series of exciting **Gaming Activities** – creating an enjoyable and memorable celebration for all attendees.

Food Without Fire Competition

Highlighting the culinary creativity of students, the Food Without Fire competition saw 10 teams showcasing their cooking talents without the use of flame. The participants prepared an impressive array of delectable dishes, including Makahana Mix, Mocktails, Mango Pudding, Biscuit Train, Margarita, Oreo Cake, and Bread Pizza Sandwich. The event provided students with an opportunity to explore and enhance their cooking skills in a fun and innovative way.

The winners of the competition were Riya and Manya (B.Com Ist Year), who secured the first position,

Gaming Activities

Adding an adventurous twist to the celebrations, a variety of games were organized, including **Battle Game, Gun Shooting, Throw the Ring, and Roll the Tissue.** These activities encouraged students to test their mental reasoning, patience, and focus while fostering camaraderie and team spirit. Around **40 students** participated, making the event lively and engaging.

The **Diwali Bash 2K22** successfully combined fun, creativity, and festivity, providing students with a platform to showcase their talents and celebrate the spirit of Diwali. The event concluded with smiles, appreciation, and cherished

Machine learning

Machine learning is the Science of Getting computers to learn without being explicitly programmed. Machine learning works on a simple concept that is understanding with experiences.

The primary aim of machine learning is to allow computers to learn automatically without human interaction.

Scope of machine learning

- Machine learning in education
- Machine learning in search engine
- Machine learning in digital marketing
- Machine learning in Healthcare
- Spam protector
- Traffic alert
- Social media
- Google Translate

Limitation of machine learning

- Accuracy depends on training and learning which is not always available.
- It requires large data sets to learn about various topics which might be time taking and require various resources
- Good performance cannot always be guaranteed.
- a Mason needs to have heterogeneity in the data set to learn meaningful Insight.

Types of machine learning

- Supervised learning:
  - in supervised learning, given training explain examples of Input and corresponding output, the machine can predict outputs for new inputs
  - in supervised learning, we train the images with respect to data that is well labeled and with the correct output
- Unsupervised learning:
  - Unsupervised learning deals with the unlabeled data
  - No training data set is provided which means, no training will be given to the machine. Therefore it must work on its own to discover the required information.
  - The machine is trained with unlabelled data.

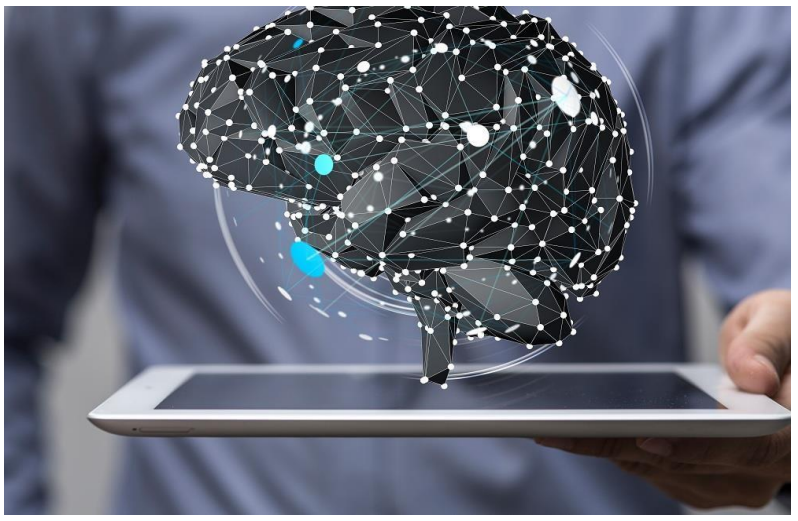
Linear regression

- Linear regression is a machine learning algorithm based on supervised learning
- It is the easiest and most popular machine learning algorithm
- It is used for predictive analysis
- It makes prediction for continuous variable size price of a product or house of salary
- Regression models target prediction values based upon their independent variables.

Artificial Neural Network (ANN)

- An artificial neural network is a computational nonlinear model that is inspired by the brain.
- ANN can perform tasks like classification, prediction, decision-making, visualization, and others just by considering examples.
- It consists of a large collection of artificial neurons of the processing element which operates in parallel
- ANNs Are capable of learning, which takes place by altering values.

Definition of Freedom



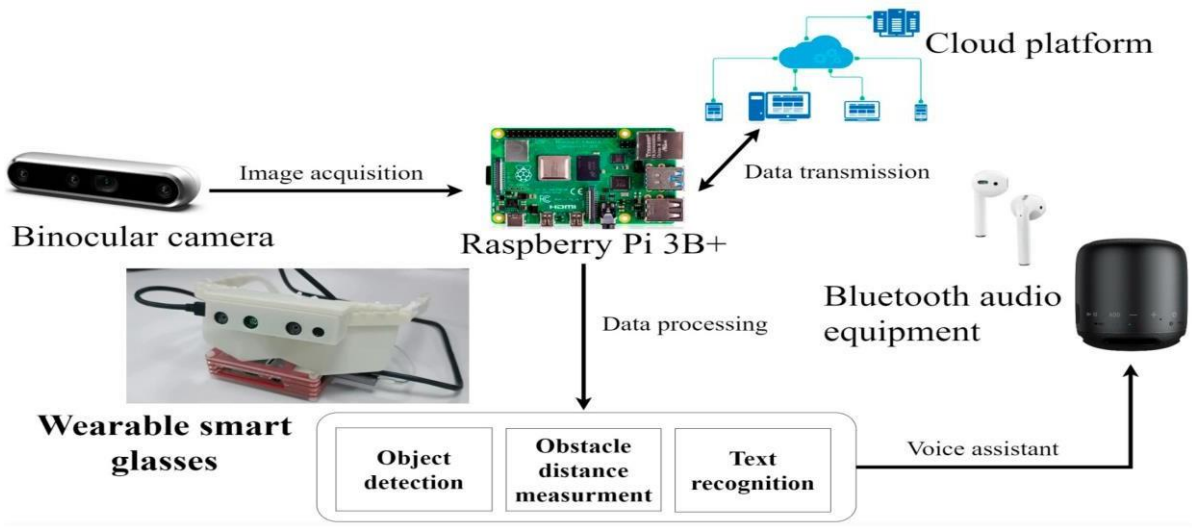
Research Breakthrough by Mr. Rohit Sharma: Revolutionizing Data Storage with AI, ML, and Quantum Computing

Mr. Rohit Sharma, Assistant Professor in the Department of Computer Applications, has recently published an insightful research paper titled *"Artificial Intelligence and Machine Learning Based Programming for Storing Large Databases into a Lesser Memory Using Quantum Computing."* This ground breaking study explores how AI and ML techniques can be integrated with the power of Quantum Computing to optimize data storage, reducing the need for massive memory resources.

By leveraging the potential of quantum mechanics, Mr. Sharma's research opens the door to more efficient ways of handling large databases, offering transformative solutions for industries that rely on big data. This innovative work contributes significantly to the field of computational science, pushing the boundaries of what is possible in data storage and processing.

The paper has been widely appreciated by academic and industry professionals for its forward-thinking approach and potential real-world applications. We look forward to seeing more of Mr. Sharma's research in this exciting and rapidly advancing area of study.

Ms. Mandeep Kaur Publishes Innovative Research on IoT and AI for the Visually Impaired



Ms. Mandeep Kaur has recently published an impactful research paper titled *"IoT and AI-based 'Eyes for Non-Eyes': A Sensor-Based Intelligent System for Blind People."* This cutting-edge study combines the power of Internet of Things (IoT) and Artificial Intelligence (AI) to develop an intelligent system designed to assist visually impaired individuals.

The system uses advanced sensors to navigate the surroundings, providing real-time information and feedback to users, enabling them to interact with their environment more independently. The integration of AI with IoT technologies promises to enhance the lives of blind and visually impaired people, giving them greater freedom and accessibility.

Ms. Kaur's research is a significant step forward in assistive technology, and it is expected to inspire further advancements in the field. Her innovative approach holds great potential for improving the quality of life for those with visual impairments, making everyday activities more manageable and safer.