ECHELON
TRANSFORMING THE EDUCATION

17 YEARS OF EXCELLENCE

ECHELON INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

TECHPULSE

Exploring Digital World 2022–23

TABLE OF CONTENTS

EDITORIAL BOARD

Student Members:
Ayush, Nikita, Ishita

Faculty Advisor:
Ms. Ruchika Aggarwal (Associate Professor)

INTRODUCTION

Welcome to the **Department of Computer Science and Engineering.**

The Department of Computer Science and Engineering is enriched with competent and well-qualified faculty members who strive to bring out the best in students. Since its inception, the department has consistently maintained a high growth pace, driven by a strong dedication to providing exceptional engineering education. The department boasts well-equipped laboratories with internet access, web application facilities available on LAN and Wi-Fi, providing students with hands-on experience on the latest software and technological tools used in industries. To prepare students as future software professionals, the department organizes seminars, corporate training, and workshops conducted by experts. Additionally, PDP classes are conducted to enhance their technical skills further. Many of our students have graduated through campus placements, securing positions in multiple organizations.

MESSAGE FROM HOD'S DESK

I feel very elated and at the same time privileged to share a few words as you go through the pages of the magazine "TECHPULSE". The CSE department endeavors to help students to seek the best from their surroundings. The knowledge thus gained becomes a ladder for them to soar into greater heights. It's often the collective effort that leads to the discovery and fulfillment of aspirations. I feel proud to be a part of TECHPULSE, an instrument in molding the students. We try to shape every sphere of a student's personality in the CSE Department. I take this opportunity to express my sincere thanks to all the members of the faculty and auxiliary staff for their sincere contribution in making this Edition.

Dr. Jugnesh Kumar
Professor & HOD

"

An invitation to the culture of inspiration, exploration, invention & growth.

"
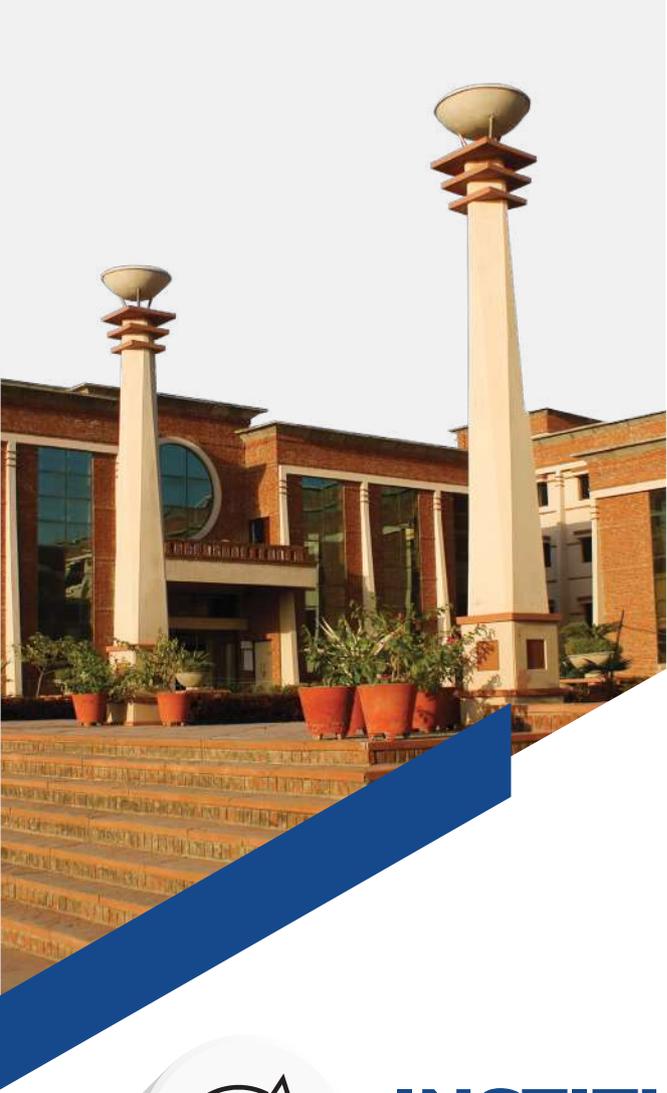
INSTITUTE VISION

"Technical and Management leaders engaged in the evolution of life, being at the frontiers of the continuous technological and administrative breakthroughs, inspired by ongoing exploration of self, society, and nature through self-reflective consciousness by building a culture of inspiration, exploration and growth."

INSTITUTE MISSION

M1 Having a culture of inspiration, exploration and invention through effective, experiential teaching-learning giving rise to ever evolving knowledge and wisdom.

M2 To have self-inspired students ever engaged in continually working upon and sharpening & deepening computational, creative, innovative and leadership consciousness.

M3 Having students established in self - reflective consciousness, committed to personal, social & human integrity an engaged in deep inquiry & conversation, giving rise to shared, inter-subjective human values & consciousness.

DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

DEPARTMENT VISION

"To develop competent computer professionals who solve real-world problems through continuous learning and adaptive to rapid changes in computer science and engineering with ethical, social, and managerial capabilities."

DEPARTMENT MISSION

M1 To produce industry-ready professionals for successful careers in computer science and related domains.

M2 To provide exposure to cutting-edge computational tools in the field of computer science & engineering.

M3 To create competent and ethical computer professionals through quality education, innovative research, and exposure to entrepreneurship.

TECH NEWS

Covering the period from July 2022 to June 2023, the technology sector witnessed a range of significant developments, innovations, and challenges. Here's a summary of key events and trends:

Healthcare Technology

Telehealth and Digital Health: The expansion of telehealth services and digital health technologies, including wearable devices for health monitoring, highlighted the ongoing digital transformation in healthcare.

Remote & Hybrid Work Trends

Evolution of Work Models: The transition to hybrid work models continued, with organizations adopting flexible work policies and tools designed to support collaboration and productivity in a distributed workforce environment.

Cybersecurity Threats and Innovations

Increased Cyber Threats: Cybersecurity remained a critical concern, with an uptick in ransomware attacks, data breaches, and state-sponsored cyber operations.

Advancements in Cyber Defense: In response, there were significant investments in cybersecurity solutions, including AI-based threat detection & secure-by-design frameworks.
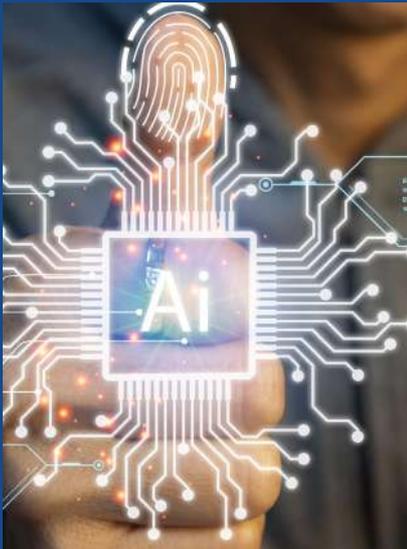
Advancements in Artificial Intelligence (AI)

AI Models and Chatbots: OpenAI, Google, and other tech giants released more advanced AI models, significantly impacting various industries. The capabilities of AI chatbots and language models, like GPT-4, garnered widespread attention for their utility in generating human-like text and solving complex problems. AI in Creative Fields: The emergence of AI-driven tools for art, music, and content creation sparked discussions about creativity, copyright, and the future of work in creative industries.

Cryptocurrency & Blockchain Developments

Market Volatility: The cryptocurrency market experienced significant volatility, with regulatory crackdowns and the collapse of several crypto platforms affecting investor confidence. Blockchain for Sustainability: Projects leveraging blockchain technology for enhancing supply chain transparency and sustainability initiatives gained traction, despite the broader market challenges.

Sustainability in Tech

Renewable Energy in Data Centers: Major tech companies announced initiatives to power data centers with renewable energy, reducing the carbon footprint of cloud computing services.

Eco-friendly Tech Products: The push for sustainable technology products led to the development of more energy-efficient devices and recycling programs for electronic waste.
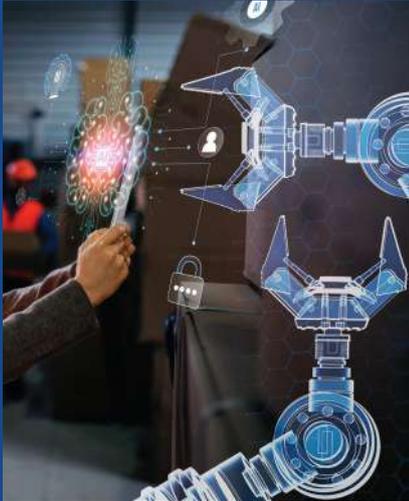
Big Tech Regulation & Industry Dynamics

Antitrust and Privacy: Governments around the world intensified efforts to regulate Big Tech companies, focusing on antitrust issues, data privacy, and digital market competition.

Tech Layoffs: Many technology companies, especially those in the social media and e-commerce sectors, announced layoffs amid economic uncertainties and changing market demands.

Consumer Electronics and Hardware

Innovative Devices: The consumer electronics market saw the release of innovative products, including foldable devices, AR/VR headsets, and wearables with advanced health tracking capabilities.

Semiconductor Industry Recovery: Efforts to address the global semiconductor chip shortage began to bear fruit, with new manufacturing facilities announced & gradual improvements in supply chain issues.

Space Exploration

Commercial Space Travel: Companies like SpaceX continued to advance human spaceflight, including missions to the International Space Station and plans for lunar exploration.

Advancements in Cyber Defense: In response, there were significant investments in cybersecurity solutions, including AI-based threat detection & secure-by-design frameworks.

Looking Ahead

Throughout this period, the technology sector remained at the forefront of addressing global challenges, driving innovation, and shaping the future of society. The advancements in AI and the ongoing discussions around regulation, privacy, and ethics underscored the complex interplay between technology, policy, and human values.

"

An institute of the students, for the students, by the students.

"

GADGET CORNER

Between July 2022 and June 2023, the technology sector continued to evolve rapidly, with numerous product launches, software updates, and influential publications. Here's a curated selection of gadgets, software, and books from that period that captured the attention of tech enthusiasts worldwide.

Tech Gadgets

Apple iPhone 14 Series

Introduced new safety features like Crash Detection and Emergency SOS via satellite. The iPhone 14 Pro models debuted the Dynamic Island, replacing the notch with an interactive, pill-shaped area for notifications and activities.

Google Pixel 7 & Pixel 7 Pro

These phones emphasized advanced AI and machine learning capabilities, including an improved Tensor G2 chip and camera system enhancements, offering features like Photo Unblur exclusively on Google Photos.

Meta Quest Pro

A high-end VR headset aimed at mixed reality & productivity, featuring advanced eye and facial expression tracking. It marked a significant step towards Meta's vision of the metaverse.

Samsung Galaxy Z Fold4 & Z Flip4

The latest in Samsung's foldable lineup, these devices focused on refining the foldable experience with stronger, more durable designs, enhanced camera systems, and more efficient use of their unique form factors.

DJI Mini 3 Pro

A compact yet powerful drone, notable for its lightweight design that doesn't sacrifice on image quality, featuring a tri-directional obstacle sensing system and impressive flight time.

Software & Platforms

Windows 11 2022 Update

The first major update to Windows 11, bringing improvements like enhanced Start menu organization, more Snap layouts, and new accessibility features, aiming to refine the user experience.

ChatGPT

OpenAI launched ChatGPT, a conversational AI built on the GPT-3.5 model, which quickly became a sensation for its ability to generate human-like text responses. It's been used in a wide range of applications, from writing assistance to coding help.

iOS 16

Introduced a customizable Lock Screen, the ability to edit and unsend messages, and new features in Maps and Wallet, among other improvements, offering a more personalized and convenient experience for iPhone users.

Books

Power Play

An inside look at the tumultuous journey of Tesla, offering insights into its daring bet on electric cars and the eccentricities of its CEO, Elon Musk.
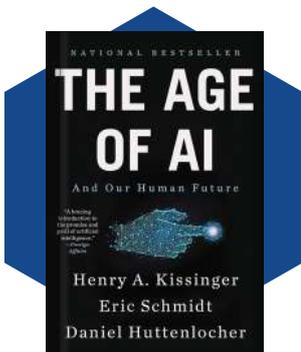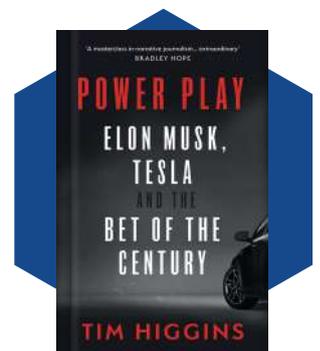
The Age of AI

A deep dive into the implications of AI on society, governance, and human identity, authored by a notable trio with backgrounds in diplomacy, technology, and academia.

Artificial Intelligence

An accessible overview of AI, its history, and its future potential, alongside the philosophical and ethical questions it raises, written for non-experts.
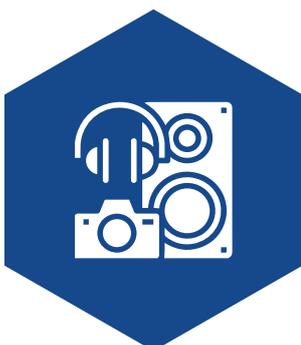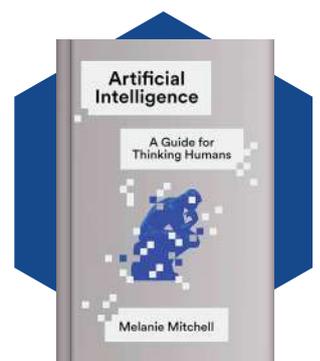
Final Thoughts

This list reflects the diverse and rapidly changing landscape of technology, showcasing how advancements in hardware, software, and theoretical understanding continue to push the boundaries of what's possible, while also prompting important conversations about the future role of technology in society.

FACULTY LIST

CSE

S. No.	Faculty Name	Designation
01	Dr. Sudarshan Goswami	Professor
02	Dr. Vikesh Kumar	Professor
03	Dr. Jugnesh Kumar	Professor
04	Dr. Monica Sankat	Associate Professor
05	Dr. Monika Garg	Associate Professor
06	Mr. Mohammad Danish	Associate Professor
07	Ms. Shefali Madan	Associate Professor
08	Ms. Ruchika Aggarwal	Associate Professor
09	Ms. Lavali	Assistant Professor
10	Mr. Izhar Ahmad	Assistant Professor
11	Ms. Priya Singh	Assistant Professor
12	Ms. Rachna Srivastava	Assistant Professor
13	Mr. Rashid Ali	Assistant Professor
14	Ms. Charu Rohilla	Assistant Professor
15	Mr. Sandeep Mittal	Assistant Professor
16	Ms. Savita	Assistant Professor
17	Ms. Shika Taneja	Assistant Professor
18	Ms. Stuti Saxena	Assistant Professor
19	Ms. Suman	Assistant Professor
20	Mr. Amrendra kumar Singh	Assistant Professor
21	Mr. Trilok Rawat	Assistant Professor
22	Ms. Amita Kumari	Assistant Professor
23	Ms. Lucky Rajpoot	Assistant Professor
24	Ms. Priyanka	Assistant Professor
25	Ms. Priyanka Sharma	Assistant Professor
26	Ms. Kavita	Assistant Professor
27	Ms. Jagriti Malviya	Assistant Professor
28	Ms. Laxmi	Assistant Professor

FIRST YEAR

S. No.	Faculty Name	Designation
01	Ms. Mahima	Assistant Professor
02	Mr. Yogendra	Assistant Professor

M.TECH

S. No.	Faculty Name	Designation
01	Ms. Swati Gupta	Assistant Professor
02	Mr. Ravi Singh Rana	Assistant Professor
03	Mr. Mohammad Aamir	Assistant Professor

MOUs Signed

S. No.	Name of MOU
01	ICT Academy
02	Edwise International
03	CETPA Infotech Pvt. Ltd.
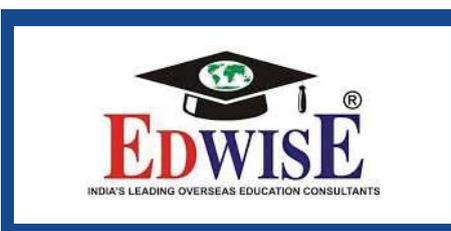
INNOVATIONS AT CAMPUS

Student Corner-Projects

Streamlining Complaint Management: A Comprehensive Project Analysis

Figure 1: Showing administration screen layout
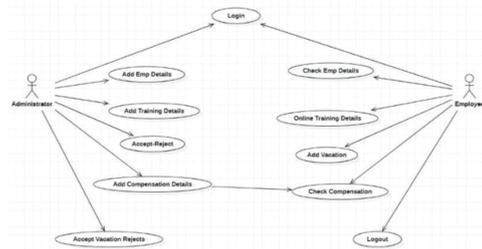
Figure 2: Showing use case diagram of the proposed model

ABSTRACT

The Complaint Management System (CMS) research paper presents a comprehensive solution to address the challenges organizations face in managing customer complaints. By developing an efficient and user-friendly framework, the CMS aims to streamline the entire complaint resolution process. Through a centralized platform, customers can easily submit complaints and track their progress, ensuring timely resolution and enhancing overall satisfaction. The system's web-based interface facilitates seamless communication between customers and support staff, with features such as real-time updates and a dashboard displaying all incoming complaints. Additionally, the CMS incorporates advanced data analysis capabilities, enabling organizations to identify recurring issues and trends, thus empowering them to implement proactive measures for improvement. By leveraging technology to enhance customer support processes, the CMS research paper seeks to revolutionize the way organizations handle complaints, ultimately leading to improved customer experiences and loyalty.

By: Muskan, Mr. Ravi Singh Rana, Ms. Savita
CSE, Echelon Institute of Technology

Advancements In Brain Tumor Detection: A Deep Learning Approach

Figure 1: Showing CNN model components involved in brain tumor detection
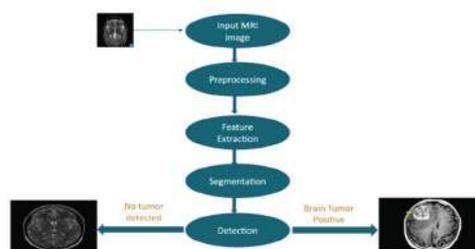
Figure 2: Showing working of proposed model as classifier

ABSTRACT

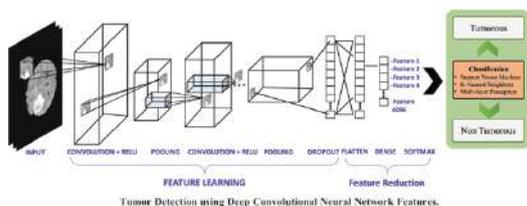A mass forms, grouping abnormal cells in the brain, known as a brain tumor. The cerebrum, safeguarded by the hard skull, faces potential dangers from any growth within its confined space. Brain tumors come in two forms: carcinogenic (dangerous) or benign (harmless). Regardless of type, tumors can escalate pressure within the skull, posing a threat to the brain. Emergencies arise with brain tumors, often leading to fatalities. Each year, approximately 6 lakh individuals in India receive a brain tumor diagnosis. Magnetic Resonance Imaging (MRI) scans are the primary diagnostic tool, revealing the presence of brain tumors. Our focus is on automating brain tumor detection from MRI images using deep learning techniques. Initial steps involve preprocessing, converting RGB images to grayscale and employing noise removal filters to enhance segmentation accuracy. Segmentation proceeds through k-means clustering and active contour methods. Feature extraction follows, utilizing discrete wavelet transform and principal component analysis. Machine learning techniques achieve an impressive 98% accuracy. Further enhancement is achieved through CNN classification, reaching 99.2% accuracy. Comparative analysis favors deep learning over traditional machine learning methods. This automated approach bypasses the need for radiologists, streamlining brain tumor identification. Our proposal introduces a robust system for brain tumor classification using deep learning.

By: Rohit Lamba, Ishita Bhatt, Ms. Shefali Madan, Ms. Suman
CSE, Echelon Institute of Technology

Empowering Deaf Communication: A Computer-Based Solution for American Sign Language Recognition
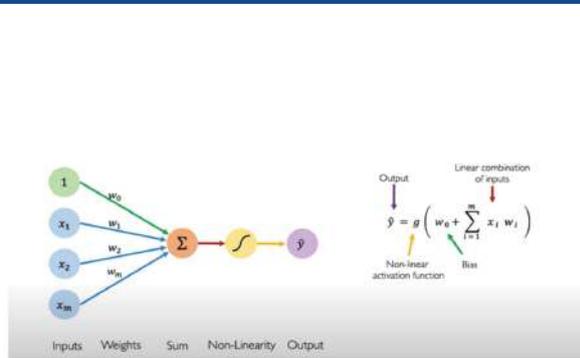
Figure 1: Showing forward propagation perceptron
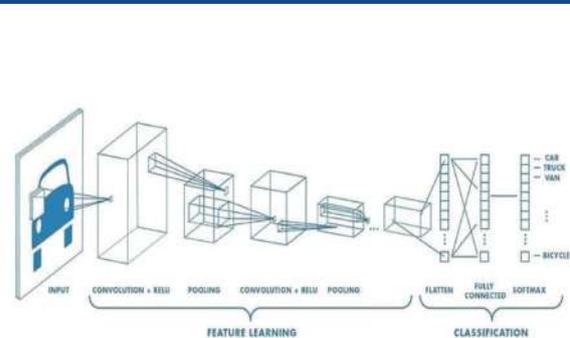
Figure 2: Showing proposed sign language model using CNN

ABSTRACT

A computer-based solution for American Sign Language (ASL) recognition is in significant demand, particularly in this age of advancing technology. Researchers have been working diligently on the problem, and the results are promising. Although voice recognition technologies are emerging, there's currently no commercial solution for sign recognition available on the market. The desire for a computer-based solution for deaf individuals is substantial. Hand gestures play a vital role in communication for the visually impaired. This project introduces a novel approach to address this need. Leveraging Python and the OpenCV module, the system detects and interprets ASL gestures captured through a camera. Image processing and segmentation techniques are utilized to facilitate real-time gesture recognition. The project aims to build a user-independent machine learning model for classifying ASL fingerspelling gestures. Depth images are utilized for training, yielding improved results compared to previous approaches. Supervised machine learning, including Convolutional Neural Networks (CNN), is applied to enhance accuracy. Attempts to pre-train the CNN model on the ImageNet dataset have been made, albeit with challenges due to limited pre-training data. Despite obstacles, this project marks a significant advancement towards inclusive communication for the deaf community.

By: Tanuj Aggarwal, Sargun Singh, Mohd. Athar
CSE, Echelon Institute of Technology

A New Approach to Online Gaming Platfrom
(International Journal of IT & Knowledge Management)

ABSTRACT

Online gaming store sites have become essential platforms for gamers to purchase, download, and access a diverse array of video games conveniently from their homes. This abstract provides an overview of the features, benefits, and impact of these online gaming stores. These digital marketplaces offer a vast collection of games across multiple platforms, including PC, console, and mobile, allowing gamers to browse extensive catalogs, read reviews, and make informed purchasing decisions. The availability of digital downloads eliminates the need for physical copies, enabling immediate access to games.

The benefits of online gaming store sites extend beyond convenience, with frequent discounts, promotions, and special offers making gaming more accessible and affordable. Customer rating systems allow users to share their experiences and help others make informed choices. However, challenges such as digital piracy, account security, and the sustainability of physical retailers need to be addressed to ensure the long-term viability of these platforms.

The online gaming store sites have revolutionized how gamers discover, purchase, and access video games. They offer convenience, affordability, and a wide variety of options while reshaping the distribution landscape of the gaming industry. As the industry continues to evolve, these platforms are set to play a crucial role in its future.

By: Jatin Kumar, Ms. Laxmi, Mr. Izhar Ahmed
CSE, Echelon Institute of Technology

The Eco-Shop: Revolutionzing E-Commerce with Advanced Features

ABSTRACT

This paper presents the development and implementation of "The Ecoshop," a fully-fledged ecommerce platform designed to provide customers with a seamless shopping experience. The platform offers users the ability to search for products by name and category, with robust login and registration functionalities secured through JWT authentication. Two distinct user profiles, admin and customer, are integrated into the system, with admins granted access to additional features for managing both administrative tasks and customer interactions. Email automation features are also incorporated to keep customers informed about order statuses and engage potential clients effectively.

The architecture of the Ecoshop follows a tiered approach, employing backend databases, various frameworks, and libraries such as HTML, CSS, and JavaScript for the front-end, with Node.js serving as the back-end environment. Technologies including multi-tiered architecture, server-client languages and frameworks, and NoSQL databases like MongoDB are essential components of the project.

By: Priyanka, Ms. Amita Kumari, Mr. Izhar Ahmed
CSE, Echelon Institute of Technology

Student Corner-Articles

Applications of Augmented Reality

Augmented Reality is a combination of a real and a computer-generated or virtual world. It is achieved by augmenting computer-generated images in the real world. It is of four types namely marker based, marker less, projection based and superimposition based augmented reality. It has many applications in the real world. AR is used in various fields such as medical, education, manufacturing, robotics and entertainment. Augmented reality comes under the field of mixed reality. It can be considered as an inverse reflection of Virtual Reality. They both have certain similarities and differences. This paper gives information about Augmented Reality and how it started. It analyzes various types of augmented reality, its applications and its advantages and disadvantages. This paper also gives us knowledge regarding those major threats that augmented reality will face in the near future and about its current and future applications. It gives us a comparison between the two related topics, Augmented reality and Virtual reality. The following paper also helps us know about the effect of Augmented Reality on human life.

By: Abhishek Sharma
CSE, Echelon Institute of Technology
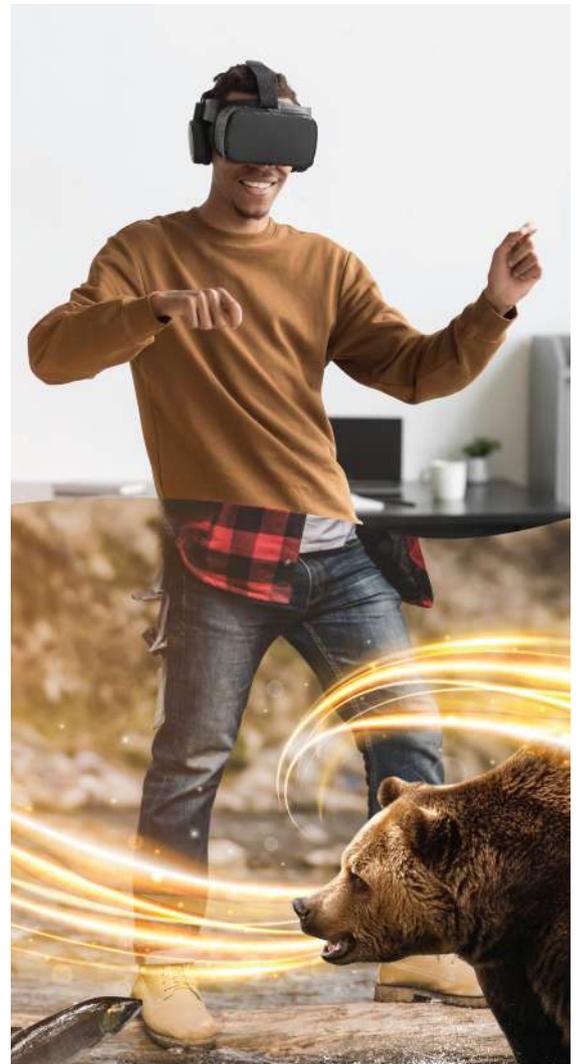
IoT(Internet of Things)

We are entering in a beginning of a new of computing technology i.e. Internet of Things (IOT). IOT is a sort of "universal global neural network" in the cloud which connects various devices. The IOT is an intelligently connected devices and systems which are made up of smart machines interacting and communicating with other machines, environments, objects and infrastructures and the Radio Frequency Identification (RFID) and sensor network technologies will go up to meet this new challenge. As a result, a

very large amount of data is being generated, stored, and that data is being processed into useful actions that can "command and control" the things or devices to make our lives much easier and safer—and to reduce our influence on the environment. This paper gives an overview of Internet of Things (IOT) and brief information about IOT applications and challenges in various fields. The phrase "Internet of Things" was invented by Kevin Ashton in 1999. He worked at his place of employment, Procter & Gamble.

During his time there, Ashton came up with the idea of putting a RFID tag on each lipstick and having them communicate with a radio receiver. He put forward the fact that such data collection can be used to solve lots of problems in the real world. At the moment, a lot of connected devices can talk to the internet and to our smartphones, and maybe even some similar products, but most of them can't talk to one another because of branded hardware and software with differing standards, languages and communication protocols. For most of the current smart household items, you'll need to use a different app or website to interface with the device. Unless they were especially designed by the manufacturer to work together. K. Rose in 2015 gave reasons why IOT is possible. He said it is possible due to the following reasons: Ubiquitous Connectivity, widespread adoption of IP – based networking, computing economics, advances in Data Analytics, rise of Cloud Computing so, the IOT is the conjunction of a variety of computing and connectivity trends that have been evolving for many decades.

By: Apoorva Jha
CSE, Echelon Institute of Technology

Application of AI/Machine Learning

Machine Learning (ML) and Artificial Intelligence (AI) techniques learn models or inference rules from data. Classification, clustering, rule based systems, etc., are some sub categories which learn the latent knowledge of the domain using training data. In early days, limitations in data availability and computing power made them used only for simpler tasks. Recent advances in robust algorithms combined with huge data publicly available and increase in computing power created more successful applications making ML/AI techniques very popular.

Presently, ML/AI techniques are being used in all fields. In this paper, we are going to present a few selected papers in which ML/AI techniques are successfully applied. Data exploratory techniques like PCA and sparse representations are discussed in Signal and Data Processing applications. Section on Human Computer Interaction system explains in detail about OCR for printed and handwritten data of Indic script, Document Image segmentation techniques and text detection in images. Computer system section discusses in detail about performance of cache, schedulers in system performance subsection and about intrusion detection, trust models and replica selection in the subsection system security. Finally, a few different applications using Neural Networks are discussed in the section Applications of Neural Networks.

By: Aniket
CSE, Echelon Institute of Technology

AI Innovations

The period of 2022-2023 has seen groundbreaking advancements in artificial intelligence, significantly impacting diverse sectors. OpenAI's GPT-4 has revolutionized natural language processing, offering superior text generation and understanding capabilities that enhance applications in content creation, customer support, and translation.

Reinforcement learning has progressed, particularly in robotics, enabling machines to learn and adapt through trial and error, thus improving automation. In healthcare, AI's role in diagnostic accuracy and predictive analytics has been transformative. Advanced machine learning models now detect diseases like cancer early and predict patient outcomes, allowing for tailored treatments. AI-driven drug discovery has expedited the identification of potential medications, promising quicker therapeutic developments.

Addressing ethical concerns, researchers have focused on mitigating algorithmic bias and advancing explainable AI (XAI). These efforts aim to create fairer, more transparent AI systems, fostering trust in AI applications in critical areas such as healthcare and finance.

In finance, AI has enhanced fraud detection and personalized financial services. Real-time analysis of transaction patterns helps detect anomalies, while personalized AI platforms offer customized financial advice, improving user engagement. Autonomous systems, including self-driving cars and delivery drones, have advanced significantly, promising to revolutionize transportation and logistics.

These developments underscore the transformative power of AI, highlighting the importance of balancing innovation with ethical considerations to ensure that AI technology benefits society as a whole. As AI continues to evolve, its integration across industries is set to drive unprecedented changes in our daily lives.

By: Abhishek Sharma
CSE, Echelon Institute of Technology

OP-EDs

Cybersecurity:
A Student's Concern for Privacy in the Digital Age

Vidushi Gandhi, a Cybersecurity major, voices his concerns over privacy in our increasingly digital world. He points out that while technology has brought about numerous conveniences, it has also led to significant privacy breaches. Gandhi advocates for stronger data protection laws and increased public awareness of digital hygiene practices. He believes that protecting individual privacy should be a cornerstone of technological advancement.

The Digital Divide:
A Student's Perspective on Inequality in the Tech Era

Ishita, a CSE major, discusses the digital divide and its implications for inequality. She argues that access to technology and the internet has become a significant determinant of educational and economic opportunities. Ishita calls for concerted efforts to bridge this divide, emphasizing the role of government, the tech industry, and community organizations in making technology accessible and affordable for all.
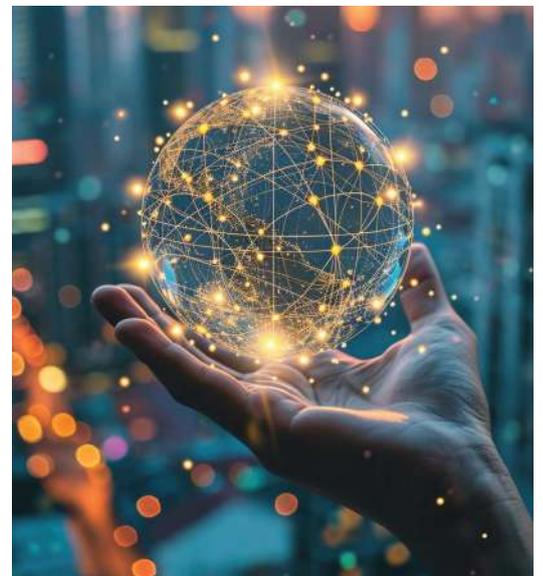
By: Abhishek Sharma
CSE, Echelon Institute of Technology

FACULTY CORNER-RESEARCH

RESEARCH PAPERS

S. No.	Name of the Author	Title of Research Paper	Name of the Journal	Indexed by	Year
01	Ms. Shefali Madan	Analytics and Big Data Management in the Age of Artificial Intelligence	European Chemical Bulletin	SCOPUS	2022-23
02	Ms. Stuti Saxena	Identify fixed American Sign Language by awareness of Convolutional Neural Network	European Chemical Bulletin	SCOPUS	2022-23
03	Mr. Trilok Rawat	Statistical Analysis of Network Traffic Techniques Using ML &Deep Learning Algorithms	International Journal Of Intelligent Systems and Applications In Engineering	SCOPUS	2022-23
04	Ms. Suman, Mr. Ravi Singh Rana	Deep Learning Insight Into The Impact of Leadership Style on Organizational Performance: A Comprehensive Analysis	Journal Of Pharmaceutical Negative Results	SCOPUS	2022-23
05	Mr. Ravi Singh Rana, Ms. Savita	Streamlining Compliant Management: A Comprehensive Project Analysis	Journal Of Pharmaceutical Negative Results	SCOPUS	2022-23
06	Ms. Shefali Madan, Ms. Suman	Advancements In Brain Tumor Detection: A Deep Learning Approach	Journal Of Pharmaceutical Negative Results	SCOPUS	2022-23
07	Mr. Mohammad Danish	Speech Recognition Intelligence System for Desktop voice Assistant by using AI &IoT	International Journal Of Intelligent And Applications In Engineering	SCOPUS	2022-23
08	Ms. Priya Singh	IoT Framework for Precision Agriculture: Machine Learning Crop Prediction	International Journal Of Intelligent And Applications In Engineering	SCOPUS	2022-23
09	Ms. Rachna Srivastava	5g Wireless System Technology	European Chemical Bulletin	SCOPUS	2022-23
10	Ms. Shefali Madan, Ms. Amita Kumari, Ms. Kavita	Quantum Computing enhanced dynamic shuffling (DS) for Cloud Storage With Lightweight Techniques	Webology	SCOPUS	2022-23
11	Ms. Laxmi, Mr. Izhar Ahmed	A New Approach to Online Gaming Platfroms	International Journal Of It & Knowledge Management	DOAJ, Google Scholar	2022-23
12	Ms. Amita Kumari, Mr. Izhar Ahmed	The Eco-Shop: Revolutionzing E-Commerce with Advanced Features	International Journal Of It & Knowledge Management	DOAJ, Google Scholar	2022-23
13	Mr. Mohammad Danish	Empowering Deaf Communication: A Computer-Based Solution for American Sign Recognition	International Journal Of It & Knowledge Management	DOAJ, Google Scholar	2022-23

CONFERENCE PAPER

S. No.	Name of Author	Title of Conference Paper	Name of the Conference	Indexed By	Year
01	Dr. Jugnesh Kumar	Deep Learning and Blockchain for securing 5G enabled IoNT in Big data Environment	International conference on Inventive Computation Technologies	IEEE	2022-23
02	Dr. Jugnesh Kumar	Analysis of Machine Learning technique for crop selection and prediction of crop cultivationt	International conference on Inventive Computation Technologies	IEEE	2022-23

PATENT

S. No.	Author Name	Title of Patent	Country
01	Mr. Mohammad Danish	A System & Method For Inventory Control & Management System Based on RFID	India

Autonomic Resource Management in a Cloud-Based Infrastructure Environment

ABSTRACT

With the advent of cloud platform giants like AWS and Google, small- and mid-scale industries are continuously shifting their infrastructure over these platforms. Since hardware and service management of these platforms are induced with high accuracy and availability, these giants earned a huge reputation in the IT industry. As computing infrastructure is expanding exponentially, resource management is getting complex and challenging day by day. Cloud environment is highly uncertain in terms of resource dispersion and availability. Administrators often experience challenges allocating available resources due to the factors such as sudden failure, dynamism, and heterogeneity. As a matter of fact, the existing frameworks and their resource management mechanisms have been facing multilateral issues and challenges to handle such flexible and unpredictable environments. In such a scenario, a question arises that how to handle and alleviate such issues and challenges efficiently and effectively through effective deployment and management of the computing resources over cloud? Dynamic resource management handles the issues related to deploying, configuring, provisioning, reprovisioning, and releasing related issues by understanding the dynamically scalable on-demand need of the users and their related applications. This chapter presents the broad overview of methodologies and mechanisms of autonomic cloud computing environments. Autonomic computing executes exclusively dynamic allocation resources in such a manner that it reconfigures itself with the availability of resources in real time. This chapter also provides a straightforward approach to the domain researchers in analyzing the paramount characteristics of autonomic resources management and aids research scholars in identifying and characterizing the primary techniques for the application corresponding to the environment in future research perspectives.

By: Mr. MD Danish
Associate Professor, CSE

AI-Driven Model for Accurate Cancer Diagnosis

ABSTRACT

Breast cancer is a fast spreading disease in the world. It arises in the lining cells (epithelium) of the ducts (85%) or lobules (15%) in the glandular tissue of the breast. Initially, the cancerous growth is confined to the duct or lobule ("in situ") where it generally causes no symptoms and has minimal potential for spread (metastasis). Over time, these in situ (stage 0) cancers may progress and invade the surrounding breast tissue (invasive breast cancer) then spread to the nearby lymph nodes (regional metastasis) or to other organs in the body (distant metastasis). If a woman dies from breast cancer, it is because of widespread metastasis. Breast cancer treatment can be highly effective, especially when the disease is identified early. This research discusses an AI model designed to detect breast cancer. The model achieved an impressive accuracy of 98 percent on the used dataset of patients, which indicates its effectiveness in distinguishing between benign and cancerous tumors. This level of accuracy makes it a promising tool for medical professionals and researchers to aid in the identification and diagnosis of tumor-related conditions. The research work demonstrates an advanced application of machine learning in healthcare, showcasing the potential of Artificial Intelligence in achieving high accuracy rates in tumor detection.

By: Dr. Monika Goyal
Associate Professor, CSE

Faculty Corner-Articles

Introduction to IoT(Internet of Things)

The rapid development and implementation of smart and IoT (Internet of Things) based technologies have allowed for various possibilities in technological advancements for different aspects of life. The main goal of IoT technologies is to simplify processes in different fields, to ensure a better efficiency of systems (technologies or specific processes) and finally to improve life quality. Sustainability has become a key issue for the population where the dynamic development of IoT technologies is bringing different useful benefits, but this fast development must be carefully monitored and evaluated from an environmental point of view to limit the presence of harmful impacts and ensure the smart utilization of limited global resources. Significant research efforts are needed in the previous sense to carefully investigate the pros and cons of IoT technologies.

This review editorial is partially directed on the research contributions presented at the 4th International Conference on Smart and Sustainable Technologies held in Split and Bol, Croatia, in 2019 (SpliTech 2019) as well as on recent findings from literature. The SpliTech2019 conference was a valuable event that successfully linked different engineering professions, industrial experts and finally researchers from academia. The focus of the conference was directed towards key conference tracks such as Smart City, Energy/Environment, e-Health and Engineering Modelling.

The research presented and discussed at the SpliTech2019 conference helped to understand the complex and intertwined effects of IoT technologies on societies and their potential effects on sustainability in general. Various application areas of IoT technologies were discussed as well as the progress made. Four main topical areas were discussed in the herein editorial, i.e. latest advancements in the further fields: (i) IoT technologies in Sustainable Energy and Environment, (ii) IoT enabled Smart City, (iii) E-health – Ambient assisted living systems (iv) IoT technologies in Transportation and Low Carbon Products. The main outcomes of the review introductory article contributed to the better understanding of current technological progress in IoT application areas as well as the environmental implications linked with the increased application of IoT products.

By: Ms. Rachna Srivastava
Assistant Professor, CSE

AI Innovations

The years 2022 and 2023 have been marked by significant advancements in artificial intelligence (AI), driving major transformations across various industries.

OpenAI's GPT-4 has revolutionized natural language processing (NLP) by delivering highly sophisticated text generation and comprehension. This leap forward has enhanced applications in automated customer support, content creation, and language translation, making AI interactions more natural and efficient.

AI's influence in healthcare continues to grow, especially in diagnostics and predictive analytics. Advanced AI models now analyze medical images with unprecedented accuracy, facilitating early detection of diseases like cancer. AI-driven predictive analytics provide personalized treatment plans, improving patient outcomes. Furthermore, AI has accelerated the drug discovery process, identifying potential new therapies faster than traditional methods.

With AI becoming increasingly integral to everyday life, tackling algorithmic bias has become a priority. Researchers are focusing on creating fairer AI systems by using diverse datasets & developing techniques to detect and mitigate bias. Advances in explainable AI (XAI) ensure transparency, making AI decisions more understandable and trustworthy, particularly in critical sectors like healthcare and finance.

AI has significantly improved fraud detection and personalized financial services. Real-time analysis of transaction patterns helps detect fraudulent activities, protecting consumers and reducing financial losses. Additionally, AI-driven platforms provide tailored financial advice and planning, enhancing user engagement and satisfaction.

Advances in self-driving cars and autonomous delivery drones are set to revolutionize transportation and logistics. These AI-powered systems navigate complex environments effectively, reducing the need for human intervention and increasing operational efficiency.

In conclusion, the AI advancements of 2022-2023 underscore its transformative potential. Ensuring that innovation is balanced with ethical considerations is crucial for AI to benefit society as a whole.

By: Ms. Priya Singh
Assistant Professor, CSE

APP OF THE YEAR

Copilot

During last year, one app that stood out for its innovation and usefulness in the realm of personal finance and investment is "Copilot." In an era where financial literacy and personal money management have become more crucial than ever, Copilot emerged as a valuable tool for users seeking to take control of their finances through intuitive and insightful means.

OVERVIEW

Copilot is a personal finance tracking app that goes beyond simple budgeting to offer a more holistic view of one's financial health. It distinguishes itself through its ability to aggregate all of a user's financial accounts, including bank accounts, credit cards, investments, and loans, providing a comprehensive overview of their financial situation in real-time.

KEY FEATURES

Account Aggregation: Copilot allows users to link multiple financial accounts, enabling a unified view of their financial status. This comprehensive overview helps users make informed decisions based on their entire financial picture, not just isolated parts of it.

Customizable Budgeting: Unlike many budgeting apps that use generic categories, Copilot offers deeply customizable budget categories and rules, allowing users to tailor the app to their specific spending habits and financial goals. This level of customization enhances user engagement with their budgeting process.

Predictive Analysis: Leveraging machine learning, Copilot can analyze spending patterns to forecast future account balances, helping users anticipate and plan for upcoming expenses or potential shortfalls. This forward-looking approach is particularly useful for managing cash flow and avoiding overdraft fees.

Investment Tracking: Copilot doesn't just focus on day-to-day spending; it also provides insights into users' investments. By tracking investment accounts in real-time, the app offers a holistic view of users' net worth and financial progress over time.

IMPACT AND RECEPTION

Empowering Financial Decisions:

Copilot has been praised for its user-friendly interface and powerful financial insights, empowering users to make more informed and proactive financial decisions. Its comprehensive approach to financial management has made it particularly popular among those seeking to improve their financial literacy and control.

Privacy and Security:

In a financial ecosystem increasingly concerned with data privacy, Copilot has emphasized robust security measures to protect users' financial information, earning trust and ensuring user comfort with linking sensitive financial accounts.

Community and Support:

Copilot has cultivated a strong community of users who appreciate the app's continuous improvements and responsive customer support. The app's development team actively engages with user feedback to refine features and introduce new functionalities that address real user needs.

CONCLUSION

In the span from July 2022 to April 2023, Copilot carved out a significant niche for itself in the crowded personal finance app market by offering a blend of comprehensive financial tracking, customizable budgeting, and insightful analytics. Its focus on empowering users with actionable financial insights and its commitment to privacy and security have set it apart as a particularly innovative and useful tool in personal finance management.

CAREER ADVICE

Navigating a career path in the tech industry requires a multifaceted approach, blending skill development, strategic job searching, and effective networking. Here are consolidated tips and strategies to help you pursue a career in tech, focusing on acing interviews, securing internships, and optimizing your job hunt.

Preparing for Tech Interviews

Understand the Format

Tech interviews often involve a combination of coding challenges, technical questions (related to algorithms, data structures, system design, etc.), and behavioral interviews. Knowing the format ahead of time helps you prepare effectively.

Practice Coding Problems

Regularly solve problems on platforms like LeetCode, HackerRank, and CodeSignal. Focus on understanding the underlying concepts rather than memorizing solutions.

Learn System Design

For roles that involve architecture or backend work, understanding system design principles is crucial. Resources like "Designing Data-Intensive Applications" by Martin Kleppmann can be incredibly helpful.

Mock Interviews

Engage in mock interviews through platforms such as Preamp or interviewing.io. They provide a realistic interview experience and feedback from peers or industry professionals.

Securing Internships in Tech

Start Your Search Early

Begin looking for internships well before your target internship period. Many companies start the recruitment process months in advance.

Build and Showcase Your Projects

Create personal projects or contribute to open-source projects to demonstrate your skills. Make sure your GitHub profile is up-to-date and reflects your work.

Network Actively

Attend tech meetups, industry conferences, and career fairs. Connect with professionals and alumni in your field through LinkedIn. Networking can often lead to referral opportunities which significantly boost your chances.

Customize Your Applications

Tailor your resume and cover letter for each application. Highlight experiences and projects relevant to the job description. Use keywords from the job listing to ensure your application passes through Applicant Tracking Systems (ATS).

Job Hunting Advice for Tech-Related Fields

Keep Skilling Up

The tech industry values current skills. Engage in continuous learning through online courses, boot camps, or certifications. Platforms like Coursera, Udemy, and edX offer courses in various tech domains.

Optimize Your Online Presence

Maintain an active LinkedIn profile, contribute to discussions in tech forums, or start a tech blog. Your online presence can serve as a passive way to attract opportunities.

Leverage Niche Job Boards

In addition to general job boards, look for job listings on tech-specific sites like Stack Overflow Jobs, AngelList (for startups), and GitHub Jobs. These platforms often list unique opportunities not found on more general job search sites.

Prepare for Rejection

The tech job hunt can be competitive. View each rejection as a learning opportunity and seek feedback where possible. Persistence and resilience are key to success.

Consider Contract or Freelance Work

If permanent roles are hard to come by, consider taking on contract or freelance projects. Sites like Upwork and Toptal can be great places to find tech gigs that help build your portfolio and could lead to permanent opportunities.

Embarking on a tech career is an exciting journey filled with learning opportunities. By honing your technical skills, strategically approaching your job search, and actively engaging in the tech community, you can navigate your path to a rewarding career in technology.

Placement of 2022 Batch students

S. No.	Name of the Students	Enrollment No.	Name of the Company/College
1	ABHAY	19015004003	Techcrumb
2	ABHIRAJ SHARMA	19015004004	Amplify Software Solution
3	ABHISHEK PRASAD	19015004005	Avi Root Info Solutions Pvt. Ltd.
4	ADARSH PANDEY	19015004007	Adjecti
5	AKHILESH SAXENA	19015004009	Epic Websoft Techno Solutions LLP
6	ANJALI SUHAG	19015004011	Nagarro
7	ANKIT SHARMA	19015004012	Absolute Erp Pvt. Ltd.
8	ANKIT SHARMA	19015004014	Eazy Erp Technologies Pvt. Ltd.
9	ANUJ MAITHUL	19015004015	Concentrix
10	ANURAG KUMAR	19015004018	Ethicalhat Cyber Security Pvt. Ltd.
11	ANURAG SINGH	19015004020	Xautomation Labs Pvt. Ltd.
12	ASHUTOSH DUBEY	19015004026	Sonar Technology
13	ASHUTOSH PANDA	19015004029	Brickred Systems, Noida
14	AYUSH SHARMA	19015004030	Ml Books International Pvt. Ltd.
15	BIPANSHU	19015004032	Tech Mahindra Ltd.
16	CHIRAG VATS	18015004036	Legato
17	DEBASHISH MANDOL	18015004037	Yatharthriti It Services Pvt. Ltd.
18	DEEPENDRA KUMAR	18015004039	Neotas
19	DINESH SHARMA	18015004042	Yatharthriti It Services Pvt. Ltd.
20	GURUDAYAL	18015004047	Extension Technology Pvt. Ltd.
21	KADAM JAIN	18015004056	Antino Labs
22	KARAMVEER SINGH	18015004058	CPJ Telemedia
23	KUMAR VAIBHAV	18015004060	H3a Buiseness Solutions Pvt. Ltd.
24	LOVESH SINGH	18015004061	Matazone Technology
25	MOHD SAMEER ANSARI	18015004068	Senra Tech Pvt. Ltd.
26	NIKHIL BARMAN	18015004073	Wipro
27	NISHTHA DABAAS	18015004075	Wns Global Pvt. Ltd.
28	NISHU KUMAR MISHRA	18015004076	Yatharthriti It Services Pvt. Ltd.
29	NITIN BAGHEL	18015004077	Provana
30	PIYUSH UPADHYAY	18015004079	The Indian Express
31	RAHUL SINHA	18015004087	Mirketa Software Pvt. Ltd.
32	REETIK RAJAN	18015004089	Techcrumb
33	RITU KAUSHIK	18015004093	Nagaro
34	ROHAN DIXIT	18015004094	Wipro
35	ROSHAN	18015004096	Superwell Services Pvt. Ltd.
36	SACHIN SINGH	18015004097	Superwell Services Pvt. Ltd.
37	SAKSHI	18015004099	Superwell Services Pvt. Ltd.
38	SAURABH SRIVASTAVA	18015004104	Mirketa Software Pvt. Ltd.
39	SHIVAM SHARMA	18015004109	Techbit Solutions Pvt. Ltd.

S. No.	Name of the Students	Enrollment No.	Name of the Company
40	SHYAM KUMAR	18015004113	Ascomp Technpologies Pvt. Ltd.
41	SUSHANT KUMAR	18015004117	Wipro
42	TANMAY	18015004119	TCS
43	UDIT	18015004120	Wipro
44	UJJWAL SHARMA	18015004121	Great Fututre Technology
45	UTKARSH	18015004122	Adjecti
46	VEDANT JHUNTHRA	18015004125	Mittal Software Labs
47	VIJAY KUMAR YADAV	18015004126	Solicon Pvt. Ltd.
48	VIKAS GIRI	18015004127	Legato
49	VISHAL	18015004131	Assocham
50	VANSHIKA SAPROO	19015004501	Volans Informatics Pvt. Ltd.
51	ANJALI	19015004503	Mavericks And Musers Media Pvt. Ltd.
52	NEHA	19015004504	Superwell Services Pvt. Ltd.
53	SANJAY KUMAR	19015004506	Superwell Services Pvt. Ltd.
54	AYSHI JENA	18015004029	College Dekho
55	VIKAS	18015004129	Larsen & Toubro
56	VIKAS PANCHAL	18015004128	Inyxa Information Systems Pvt. Ltd.
57	AYUSH SHARMA	18015004028	Dr. Dy Patil Vidyapeeth, Pune
58	DEEPANSHU GUPTA	18015004038	IIIT, Hyderabad

Students Participation In MOOCs (Our MOOC Toppers)

S. No.	Name	Final Score	Certificate Type
01	Aniroodh Prasad	92	Elite+Gold
02	Manish	87	Elite+Silver
03	Vivek kumar	85	Elite+Silver
04	Harsh Bhadana	83	Elite+Silver
05	Yash	81	Elite+Silver
06	Ayush Kumar	80	Elite+Silver
07	Apoorva Jha	80	Elite+Silver
08	Yatharth Arora	79	Elite+Silver
09	Nikhil Kumar Tiwari	79	Elite+Silver
10	Karan Singh Bisht	77	Elite+Silver
11	Rohit Lamba	76	Elite+Silver
12	Khush	76	Elite+Silver
13	Vipin Kumar Verma	76	Elite+Silver
14	Hemant	75	Elite+Silver
15	Ashish Sharma	75	Elite+Silver

Professional Societies & Technical Clubs In The Department

S. No.	Professional Society Name	Membership Number
01	ISTE Institutional Membership	IM1814
02	ISTE Student Chapter	HR27
03	ICT Academy	141640

Technical Club Categorised As

Google Developer Club	Open-Source Development Club	Big Data Hadoop Club	Adobe Club

Students Participation in Inter-College Events

Roll No.	Student Name	Name of the Event	Location	Award
21-CSE-062	Jatin	Sports – Track Event	DCTM	1st
21-CSE-047	Gaurav Chaudhary	Sports – Track Event	DCTM	2nd
21-CSE-062	Jatin	Javelin	DCTM	1st
21-CSE-119	Sahil Ali	Seminar On Innovative Technology	EIT	1st
22-CSE-022	Ayushnegi	Innovative Technical Project Exhibition	EIT	2nd
22-CSE-012	Ankit Singh	Innovative Technical Project Exhibition	EIT	2nd
22-CSE-011	Ankit Malik	Innovative Technical Project Exhibition	EIT	2nd
21-CSE-104	Radheshyam	Poster Making	EIT	Participated
21-CSE-097	Prateek	Poster Making	EIT	Participated
22-CSE-104	Pranav Banga	Poster Making	EIT	Participated
22-CSE-066	Khushi Mittal	Poster Competition	EIT	Participated
22-CSE-023	Ayushi Dabaas	Poster Competition	EIT	Participated
22-CSE-025	Chhavi Baweja	Poster Competition	EIT	Participated
22-CSE-027	Dev Goyal	Poster Competition	EIT	Participated
22-CSE-035	Disha Vashishtha	Poster Competition	EIT	Participated

GLIMPSES OF THE ORGANIZED EVENTS

ECHELON
TRANSFORMING THE EDUCATION

17 YEARS OF
*** EXCELLENCE ***

Approved by AICTE, Ministry of Education, Govt. Of India & DTE, Haryana and affiliated to J.C. Bose University of Science & Technology, YMCA, Faridabad – A Haryana State Govt. University – Accredited A+ by NAAC

Affiliated To Shri Vishwakarma Skill University (Palwal) |1st Government Skill University Of India, Set Up By The Government of Haryana

CONTACT US:

📞 +91 9999753763   ✉ info@eitfaridabad.com   🌐 www.eitfaridabad.com

🏠 Jasana–Manjhawali Road, Kaboolpur, Naharpar, Faridabad, Haryana 121101