



Estd. 1994

SEPTEMBER 2024



'Storm

Data Science, AI & Beyond

**Future-Tech
Breakthroughs**

**What to Know
About AI in 2024**

K.L.N. College of Engineering
Department of Information Technology



K.L.N. College of Engineering

i'Storm

Department of Information Technology



PRINCIPAL MESSAGE



It is a matter of great pride and satisfaction for K.L.N. COLLEGE OF ENGINEERING to bring out the News Letter 'I'STORM' Released from the Department of Information Technology. The College has made tremendous progress in all areas—academic, non-academics, capacity building relevant to staff and students. The College has achieved another milestone in getting NBA (National Board of Accreditation). I am confident that this issue of Department News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities. A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by a Department and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editorial Board of this News Letter who have played wonderful role in accomplishing the task in Record time. I express my deep sense of gratitude to Dr. P.Ganesh Kumar, HOD/IT under whose guidance this Technical work has been undertaken and completed within the stipulated time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best wishes.

PRINCIPAL

Dr. A.V. RAMPRASAD

THE EDITOR'S DESK



It gives me immense pleasure to note that response to this newsletter of our department i'STORM has been overwhelming. The wide-spectrum of articles in different sections gives me a sense of pride that our students and professors possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. I applaud the contributors for their stimulated thoughts and varied hues in articles contributed by them. Commendable job has also been done by the Editorial Board in planning for and producing the Newsletter. My congratulations to the team who took the responsibility for the arduous task most effectively. I am hopeful that this small piece of technical work shall not only develop the taste for reading among students but also develop a sense belonging to the institution as well.

H.O.D(IT)

Dr. P. GANESH KUMAR

NEWS LETTER EDITORIAL BOARD EDITOR-IN-CHIEF:

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S.Karthikeyan(1st year)

OUR COLLEGE:

Vision

To become a Centre of Excellence in Technical Education and Research in producing Competent and Ethical professionals to the society.

Mission

To impart Value and Need based curriculum to the students with enriched skill development in the field of Engineering, Technology, Management and Entrepreneurship and to nurture their character with social concern and to pursue their career in the areas of Research and Industry.

OUR DEPARTMENT:

Vision

To emerge as a center of excellence through innovative technical education and research in Information Technology.

Mission

To produce competent Information Technology professionals to face the industrial and societal challenges by imparting quality education with ethical values.

K.L.N.COLLEGE OF ENGINEERING

POTTAPALAYAM, SIVAGANGA DISTRICT, TAMILNADU

AN AUTONOMOUS INSTITUTION | ACCREDITED BY NAAC

(APPROVED BY AICTE, NEW DELHI & AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

1. *Engineering knowledge*: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. *Problem analysis*: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development.
3. *Design/development of solutions*: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required.
4. *Conduct investigations of complex problems*: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modeling, analysis & interpretation of data to provide valid conclusions.
5. *Engineering tool usage*: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems.
6. *The engineer and the world*: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment.
7. *Ethics*: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws.
8. *Individual and Collaborative team work*: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
9. *Communication*: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences.
10. *Project management and finance*: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
11. *Life-long learning*: Recognize the need for, and have the preparation and ability for
 - i) independent and life-long learning
 - ii) adaptability to new and emerging technologies and
 - iii) critical thinking in the broadest context of technological change.

Program Educational Objectives

1. *To excel in industrial or graduate work in Information Technology and multi-disciplinary Environments.*
2. *To adapt to ever changing technologies by applying Engineering Principles.*
3. *To practice professionalism conforming to ethical values, team work and Leadership.*

Program Specific Outcomes

1. *To create better learning environment in line with technological updation and research progress.*
2. *To give industry exposure through research and consultancy in Information and Communication Technologies.*

MACHINE LEARNING

Machine Learning is a branch of Artificial Intelligence that enables computer systems to learn from data, identify patterns, and make decisions with minimal human intervention. It focuses on developing algorithms and statistical models that allow systems to improve their performance automatically through experience, without being explicitly programmed for every task.

key areas of MACHINE LEARNING:

Supervised Learning:

Learning from labeled data to make predictions or classifications.

Unsupervised Learning:

Identifying hidden patterns or structures in unlabeled data.

Reinforcement Learning:

Learning through trial and error using rewards and penalties.

Feature Extraction and Selection:

Identifying important input variables that improve model performance.

Model Training and Testing:

Training algorithms on data and evaluating their accuracy using test datasets.

Prediction and Decision Making:

Using trained models to make accurate predictions or automated decisions.

Continuous Improvement:

Improving performance automatically as more data becomes available.



Geoffrey Hinton



Geoffrey Hinton: Known as the "Godfather of Deep Learning," he is a cognitive psychologist and computer scientist recognized for his work on artificial neural networks, backpropagation, and Boltzmann machines. He is a professor emeritus at the University of Toronto and a former researcher at Google Brain.

Key Contributions:

1. Backpropagation Popularization

Hinton helped popularize the backpropagation algorithm in the 1980s for training neural networks. This became the foundation of modern deep learning.

2. Deep Neural Networks

He strongly advocated multi-layer neural networks when most researchers had given up on them. Turns out... he was right. Deep learning now powers AI systems worldwide.

Yann LeCun:



Yann LeCun: Chief AI Scientist at Meta (Facebook) and professor at NYU. He is a pioneer in computer vision and the creator of Convolutional Neural Networks (CNNs), which are fundamental to modern image recognition.

Key Contributions:

Invention of LeNet (1989–1990s): While at Bell Labs, LeCun developed the first practical CNN, known as LeNet, specifically designed for handwritten digit recognition.

Real-world Deployment: His work enabled the first widely deployed neural network, which was used by banks to read over 10% of all checks in the US in the late 1990s and early 2000s.

Key Architectural Insights: He introduced critical concepts such as local receptive fields, shared weights, and spatial pooling, which are now standard in computer vision.

Yoshua Bengio



Yoshua Bengio is a renowned computer scientist, professor at the [Université de Montréal](#), and founder of [Mila](#), the Quebec AI Institute, pioneering deep learning and neural networks. Recognized as a "founding father" of deep learning, he won the 2018 [ACM A.M. Turing Award](#) for breakthroughs in artificial neural networks.

Andrew Ng



Co-founder of Coursera and DeepLearning.AI, and former head of Google Brain and Chief Scientist at Baidu. He is a prominent researcher in deep learning and a major force in AI education.

1. Google Brain Co-Founder (2011)

Andrew Ng co-founded Google Brain, one of the first large-scale deep learning research projects at Google. It proved neural networks could learn high-level features from massive data.

2. Online AI Education Revolution

He co-founded Coursera and later DeepLearning.AI, making AI and ML education accessible to millions worldwide. His Machine Learning course is one of the most enrolled technical courses ever.

Fei-Fei Li



Kevin Mitnick was a *Creator of ImageNet dataset.*

ImageNet made large-scale image recognition possible and enabled the 2012 deep learning breakthrough. Strong voice in human-centered and ethical AI.

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1. Creation of ImageNet (2009)

Fei-Fei Li led the development of ImageNet, a dataset containing over 14 million labeled images across thousands of categories. Before ImageNet, computer vision models were trained on small datasets. ImageNet made large-scale supervised learning possible.

John McAfee



John McAfee was a pioneer in cybersecurity, best known for founding McAfee Antivirus, one of the first commercial antivirus software programs.

1. McAfee Antivirus (1987)
– One of the earliest and most popular antivirus programs, helping protect computers from malware.

2. Cybersecurity Awareness – Advocated for digital privacy and security.

3. Entrepreneurship – Founded McAfee Associates, later becoming a major cybersecurity company.

Key Features Of Machine Learning

Machine Learning is a branch of Artificial Intelligence where computers are designed to learn patterns from data and improve their performance over time without being explicitly programmed for every single task. Instead of writing detailed instructions telling a computer exactly what to do in every possible situation, we provide it with large amounts of data and algorithms that allow it to detect relationships, trends, and structures within that data.



1. Automation of Decision Making

Machine Learning enables systems to make decisions automatically without being explicitly programmed for every rule.

◆ 2. Pattern Recognition

It identifies hidden patterns in large datasets, which humans cannot easily detect.

◆ 3. Predictive Analytics

ML models can predict future outcomes based on historical data, widely used in finance, healthcare, and business forecasting.

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◆ 3. Advancement in Computer Vision

Her research focuses on:

Object recognition

Scene understanding

Visual intelligence in machines

She helped move AI from simple pattern detection to more meaningful visual interpretation.

.. 4. Stanford Leadership

She is a Professor at Stanford and Co-

Director of the Stanford Human-Centered AI Institute.

Her work emphasizes designing AI systems that serve and respect human values.

5. Ethical & Human-Centered AI – Fei-Fei Li's Perspective

Fei-Fei Li strongly advocates for ethical and human-centered AI, emphasizing that artificial intelligence should be developed responsibly and designed to benefit society. She believes AI systems must be safe, transparent, and carefully evaluated before deployment to avoid unintended harm. A major part of her work focuses on fairness and bias awareness, highlighting that AI models can inherit biases present in training data, which may lead to discrimination in areas such as hiring, lending, or facial recognition.

3. Diversity in AI Research

*She strongly supports increasing diversity in:
AI researchers*

Engineers

Decision-makers

Why? Because if only a narrow group builds AI, their blind spots become embedded in the technology.

More diverse teams lead to:

Broader perspectives

Fairer systems

Better societal impact

4. Human-Centered AI Concept

At Stanford's Human-Centered AI Institute, the idea is simple:

AI should:

Augment humans, not replace them blindly

Respect privacy

Protect human dignity

Serve society's long-term interests

The goal is not just smarter machines.

It's better outcomes for people.

5. Autonomous Systems

Machine Learning plays a crucial role in enabling autonomous systems such as self-driving cars, drones, and intelligent robots to operate independently without constant human control. These systems use Machine Learning algorithms to analyze real-time data collected from sensors, cameras, radar, and GPS to understand their environment. By recognizing objects, detecting obstacles, interpreting traffic signals, and predicting the movement of other vehicles or pedestrians, ML allows machines to make safe and accurate decisions instantly

Benefits Of Machine Learning

1. Reduces Human Effort

Machine Learning automates repetitive and complex tasks, reducing the need for constant human supervision.

◆ 2. Handles Large Volumes of Data

It can analyze massive datasets quickly and efficiently, something humans simply cannot do at scale.

◆ 3. Improves Decision Accuracy

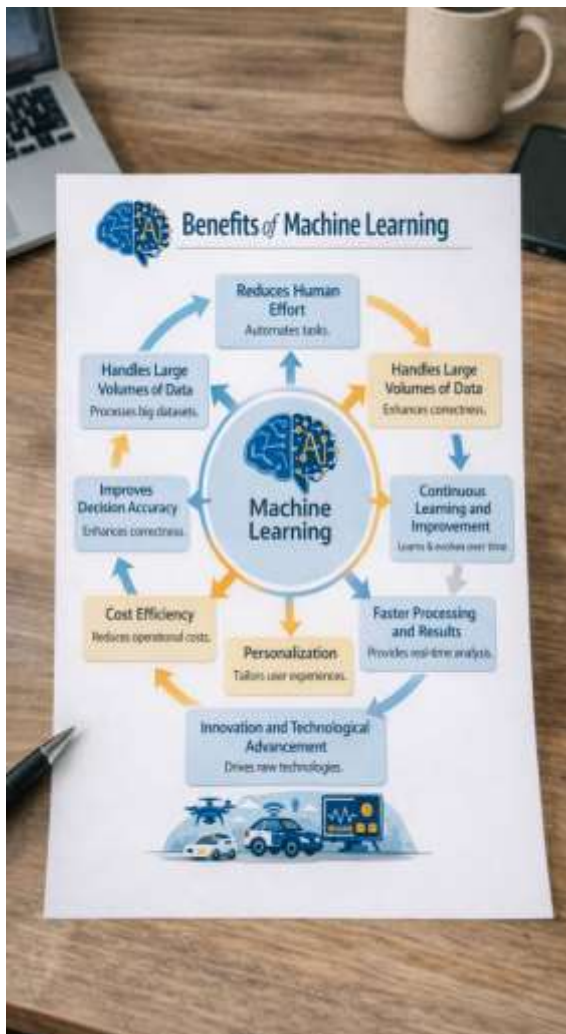
By learning from data patterns, ML systems often make more accurate and consistent decisions.

◆ 4. Continuous Learning and Improvement

ML models improve their performance over time as they are exposed to more data.

◆ 5. Faster Processing and Results

It enables real-time analysis and rapid response, especially useful in finance, healthcare, and cybersecurity.



Disadvantages Of Machine Learning :



▼ 1. Requires Huge Amount of Data

ML models don't magically "understand" things. They need massive amounts of high-quality data. If the data is poor, or incomplete, the model becomes confidently wrong.

▼ 2. High Development Cost

Training models requires powerful hardware like GPUs, cloud infrastructure, storage, and skilled engineers. It's not cheap.

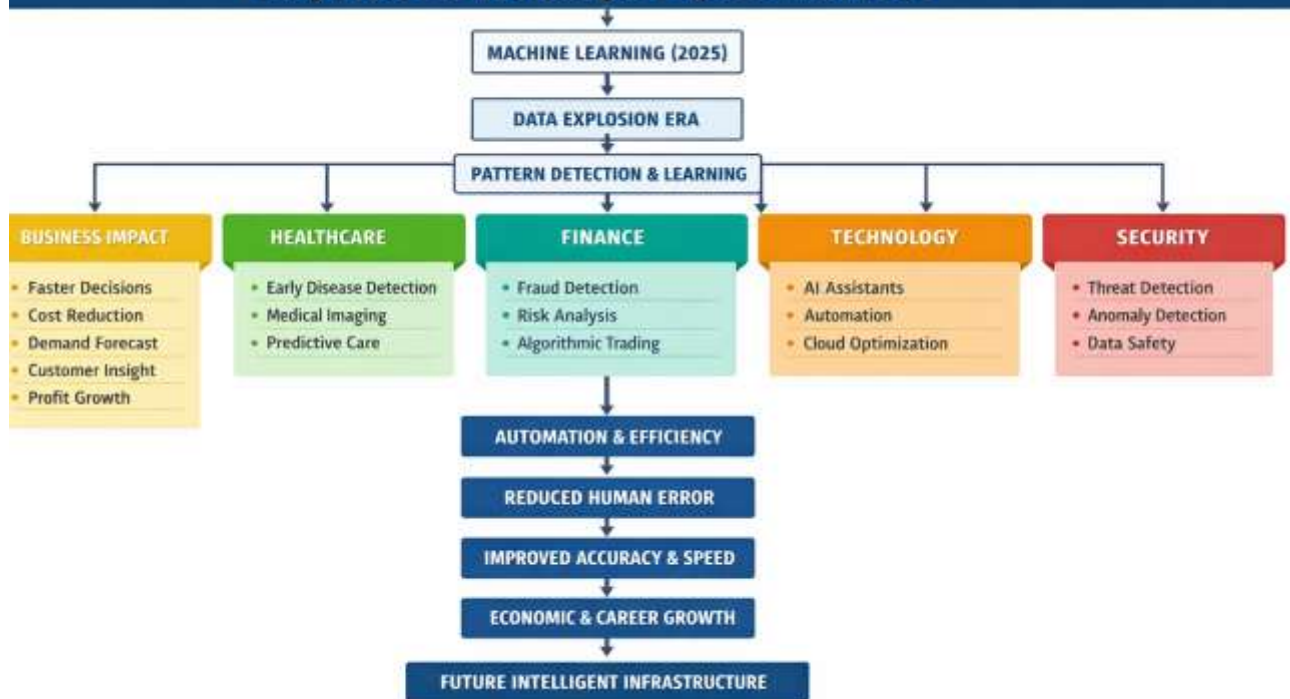
3. Bias and Fairness Issues

If training data contains bias, the model learns that bias. It doesn't question morality. It just copies patterns. That can lead to unfair decisions in hiring, lending, policing, and more. Machines reflect society's flaws with perfect efficiency.

▼ 4. Lack of Explainability

Many advanced models, especially deep learning systems, work like black boxes. They give results, but explaining why they made a decision can be difficult. That's not ideal in healthcare or finance where transparency matters.

Why Machine Learning is Important in 2025



Machine Learning is important in 2025 because the world is drowning in data, and data without intelligent systems is just expensive digital clutter.

Decision Making
Companies use ML to analyze massive data instantly and make real-time decisions.

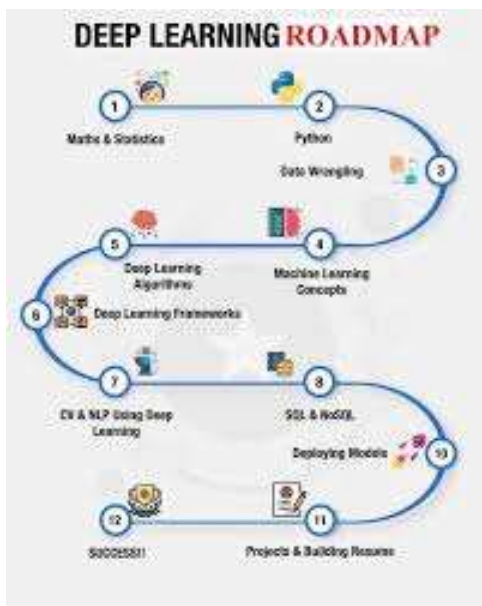
Higher Accuracy
ML models reduce human error in areas like fraud detection, medical diagnosis, and predictions.

Cost Reduction

Automation powered by ML lowers operational and labor costs.

Personalization at Scale

Platforms like Netflix and Amazon use ML to give personalized recommendations to millions of users.



Improved Healthcare Outcomes

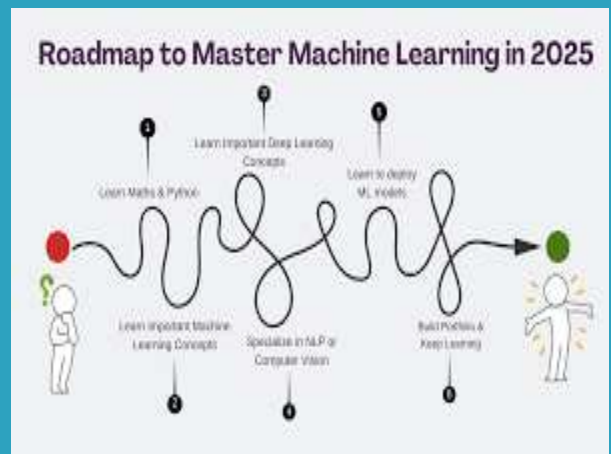
ML helps detect diseases earlier through medical imaging and predictive analytics.

Cybersecurity Strengthening

ML identifies unusual patterns and prevents cyber attacks faster than traditional systems.

Automation of Repetitive Tasks

Chatbots, virtual assistants, and AI copilots reduce manual workload.



Better Business Forecasting

Sales prediction, demand forecasting, and risk analysis become more reliable.

Smarter Autonomous Systems

Self-driving technologies from companies like Tesla rely heavily on ML.

Career and Economic Growth

ML skills are in high demand, increasing job opportunities and national competitiveness.

Applications of Machine Learning :

1. Healthcare

Machine Learning is used to detect diseases early, analyze medical images, predict patient risk, and even assist in drug discovery.

2. Finance

Banks use ML for fraud detection, credit scoring, algorithmic trading, and risk assessment. The system learns normal transaction behavior and flags unusual



3. E-Commerce

Online platforms use ML for recommendation systems, demand forecasting, customer segmentation, and dynamic pricing.

4. Autonomous Vehicles

Self-driving cars rely on ML to recognize objects, detect pedestrians, understand traffic signs, and make driving decisions in real time.

5. Natural Language Processing

ML powers chatbots, language translation, sentiment analysis, and voice assistants. It allows machines to understand and generate human language with increasing accuracy.

STUDENT ACHIEVEMENT 2024-2025

S.N.	Name of the Student	Name of the Event	State/National/International level	Date of Event	Name of the award if any
1.	E.I. Gowshik, IT	Quizzards, Cultural Festival, Mepco Schlenk Engineering, Sivakasi	State	19.9.2024 & 20.9.2024	II Prize
2.	S. Inzamam Ulhaq, IT	FIX'N SOLVE FEISTA, Vaigai College, Madurai	State	7.10.2024	II nd Prize
3.	k. Hari Prasath, IT	FIX'N SOLVE FEISTA, Vaigai College, Madurai	State	7.10.2024	II nd Prize
4.	K.M. Aswin Babu, IT	Oral Techie, ELECTROCOGNIZ ANCE2K:24, SIT,SIT	National	31.8.2024	III prize
5.	A.N. Deepan, IT	IPL Auction, CELESTIA 2024, VAigai College, Madurai	State	7.10.2024	1 st Prize
6.	K.S. Achuthan, IT	ORAL TECHIE, ELECTROCOGNIZ ANCE 2K24, SIT	National	31.8.2024	II nd Prize
7.	S.V. Sri Divya Dharshini	ORAL TECHIE, ELECTROCOGNIZ ANCE 2K24, SIT	National	31.8.2024	II nd Prize
8.	Vimal Adithan, IT	Project Expo, Sri Krishna Clg of Eng & Tech, Coimbatore	National	9.10.2024	1st prize

9.	K.S. Achuthan, IT	Oral Techie, ELECTROCOGNIZ ANCE2K:24, SIT,SIT	National	31.8.2024	II nd prize
10.	M. Charumathy, IT	Oral Techie, ELECTROCOGNIZ ANCE2K:24, SIT,SIT	National	31.8.2024	III prize
11.	S.M. Aswin, IT	Oral Techie, ELECTROCOGNIZ ANCE2K:24, SIT,SIT	National	31.8.2024	III prize
12.	E.I. Gowshik, IT	Quizzards, Cultural Festival, Mepco Schlenk Engineering, Sivakasi	State	19.9.2024 & 20.9.2024	II Prize

13.	M. Naveen Kumar, IT	IPL Auction, CELESTIA 2024, VAigai College, Madurai	State	7.10.2024	1 st Prize
14.	A.R.Vijay Adith,IT	Retro Poster Jam , ERUPTA,Sethu Institute of Technology	State	26.2.2025	1 st Prize
15.	P.Ragesh,IT	Retro Poster Jam , ERUPTA,Sethu Institute of Technology	State	26.2.2025	1 st Prize
16.	K.Raghavv Lighath	BGMI Event, Thiagarajar College of Management	State	Feb 20 to 22, 2025	1 st Prize, Cash Prize- Rs5000
17.	P.S.Viswesh Kumar	BGMI Event, Thiagarajar College of Management	State	Feb 20 to 22, 2025	1 st Prize, Cash Prize- Rs5000
18.	Hari Prasath.K	FIX'N SOLVE FIESTA,Dept of CSE, Vaigai College of Engineering	State	Oct 7 th ,2024	IInd Prize
19.	Inzamam Ulhaq.S	FIX'N SOLVE FIESTA,Dept of CSE, Vaigai College of Engineering	State	Oct 7 th ,2024	IInd Prize
20.	Deepan.A.N	IPL Auction, Dept of CSE, Vaigai College of Engineering	State	Oct 7 th ,2024	Ist Prize
21.	Aswin.S.M	IPL Auction, Dept of CSE, Vaigai College of Engineering	State	Oct 7 th ,2024	Ist Prize

22.	Naveen Kumar.M	IPL Auction, Dept of CSE, Vaigai College of Engineering	State	Oct 7 th ,2024	Ist Prize
23.	A.R.Vijay Adith,IT	Retro Poster Jam , ERUPTA,Sethu Institute of Technology	State	26.2.2025	1 st Prize
24.	Kishore K J	QUIZZARDS, Legacy'24, Mepco Schlenk Engineering College, Sivakasi	State	19.9.2025 & 20.9.2025	II prize
25.	P.Ragesh,IT	Retro Poster Jam , ERUPTA,Sethu Institute of	State	26.2.2025	1 st Prize
26.	Rishikesh B V	Accident Messaging System (AMS), TECHNOZARE 2K24, IIPC, KLNCEAH	Institute Level	15.3.2024	1 st prize
27.	Vijayadhith A R	Accident Messaging System (AMS), TECHNOZARE 2K24, IIPC, KLNCEAH	Institute Level	15.3.2024	1 st prize
28.	Tamilarasan S	Accident Messaging System (AMS), TECHNOZARE 2K24, IIPC, KLNCEAH	Institute Level	15.3.2024	1 st prize

INTERNSHIP DETAILS (2024-25)

S. NO	COMPANY NAME	PERIOD	DURATION	PARTICIPANT
1.	SHASHONK PVT LTD	24-06- 2025 to 24-07-2025	1 Month	Rishikesh B V
2.	SHASHONK PVT LTD	24-06- 2025 to 24-07-2025	1 Month	Ragesh P
3.	SHASHONK PVT LTD	24-06- 2025 to 24-07-2025	1 Month	Vijayadhith A R
4.	SHASHONK PVT LTD	24-06- 2025 to 24-07-2025	1 Month	Seenivasan R S
5.	SHASHONK PVT LTD	24-06- 2025 to 24-07-2025	1 Month	Selva Harish J
6.	SYSTEM TRON	26-08-2024 to 22-09-2024	4 Week	Praveen Kumar B R
7.	CODERONE	20-12-2024 TO 20-1-2025	1 Month	Velentina V
8.	CONGNIFYZ TECHNOLOGIES	22-02-2024	1 Month	Anand S
9.	CODTECH IT SOLUTIONS	10-03-2025 to 10-05-2025	3 Months	Praveen Kumar B R
10.	TARCIN ROBOTIC LLP	23-12-2024 to 23-01-2025	1 Month	Ramyadevi K R

FACULTY ACHIEVEMENT 2024-25

S. N.	Name of the Faculty	Name of Course Passed	Course Offered by (agency)	Grade obtained if any
1	Dr.G.Ramesh, Professor/IT	Introduction to Internet of Things	Swayam - NPTEL	Top 5% (Elite + Gold)
2	Dr.G.Ramesh, Professor/IT	Software Testing	Swayam - NPTEL	Elite
3	Dr.G.Ramesh, Professor/IT	Introduction to Industry 4.0 and Industrial Internet of Things	Swayam - NPTEL	Elite
4	Mr.A.Selvaraj, Assistant Professor/IT	User-centric Computing for Human-Computer Interaction	Swayam - NPTEL	Top 1% (Elite + Silver)
5	Mr.A.Selvaraj, Assistant Professor/IT	Digital Electronic Circuits	Swayam - NPTEL	Elite
6	Mrs.S.Vijayasharmila, Assistant Professor/IT	User-centric Computing for Human-Computer Interaction	Swayam - NPTEL	Top 1% (Elite + Silver)

7	Mrs.S.Jeniba, Assistant Professor/IT	User-centric Computing for Human-Computer Interaction	Swayam - NPTEL	Elite
8	Mrs.T.T.Mathangi, Assistant Professor/IT	User-centric Computing for Human-Computer Interaction	Swayam - NPTEL	Successfully completed
9	Mrs.N.Logamithra, Assistant Professor/IT	User-centric Computing for Human-Computer Interaction	Swayam - NPTEL	Successfully completed
10	Mrs.P.Ramya, Assistant Professor/IT	User-centric Computing for Human-Computer Interaction	Swayam - NPTEL	Elite
11	Mrs.I.Muthu Meenatchi, Assistant Professor/IT	Cloud Computing	Swayam - NPTEL	Top 2% (Elite + Gold)
12	Mrs.I.Muthu Meenatchi, Assistant Professor/IT	Big Data Computing	Swayam - NPTEL	Elite + Silver
13	Mrs.K.Rani, Assistant Professor/IT	Cloud Computing	Swayam - NPTEL	Elite + Silver

Short-term courses / Seminars / Symposia attended by Staff:

SL.N o	Name of the Faculty	FDP/Conference/Workshops/ Short-Term Programs / Industrial Training Programs	Organized By	Date
1.	Mr.A.SELVARAJ, AP(Sr.Gr)/IT	Generative AI and the Future of Work	Reva University, Bengaluru, India,	22.7.2024 to 26.7.2024
2.	Mr.A.SELVARAJ, AP(Sr.Gr)/IT	Online National level 5 days FDP, “ Mastering the art of Research: Idea to Research”	School of Computer Science and Artificail Intelligence, SR University	13.11.24 to 17.11.24
3.	Mr.A.SELVARAJ, AP(Sr.Gr)/IT	Cloud Computing	NPTEL - IIT Kharagpur	Jul to Oct 2024
4.	Mrs.S.VIJAYA SHARMILA, AP/IT	Generative AI and the Future of Work	Reva University, Bengaluru, India,	22.7.2024 to 26.7.2024

