



SANTHIRAM ENGINEERING COLLEGE **(AUTONOMOUS)**

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NH-40, Nandyal - 518501, A. P.
Web: www.srecnandyal.edu.in

Department of Computer Science & Engineering-Data Science

DATAEXPLORE

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(DATA SCIENCE)



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CHAIRMAN'S MESSAGE



Dr. M. SANTHIRAMUDU

I am happy to hear that Department of Computer Science & Engineering(DS) of SREC is coming out with the annual college magazine in a ninth consecutive year. Efforts such as this will provide an opportunity for the staff and students to showcase their talents in technical writing. I sincerely appreciate and congratulate the Principal, the editorial team and the students of the department for their unrelenting efforts in compiling this magazine.

MANAGING DIRECTOR'S MESSAGE



Mr. M. SIVARAM

I am delighted to hear that our college is bringing out DATAEXPLORE, Half yearly magazine for this academic year. It is a nice platform for both the faculty and the students to explore their knowledge. I hope that this would be an ongoing process and the magazine would bring out the latent talent of everyone. I am appreciating and recognizing the hard work of the editors and the magazine committee in bringing out the magazine and in wishing them success in their endeavour.

PRINCIPAL'S MESSAGE



Dr. M. V. SUBRAMANYAM

Today, Department of Computer Science Engineering (DS) of SREC has grown in all directions and has become a distinguished center for modern learning. This magazine provides a platform for students and staff to share information, spread the latest technical knowledge and cultivate right ways that will equip all of us to stay competent in our respective fields of study and research.

H.O.D' S MESSAGE



Mrs.N. RAMADEVI

It is my pleasure to congratulate the team that has taken the initiative for producing DATAEXPLORE. Reading this magazine would definitely be an inspiration and motivation for all students and staff to contribute even more to the forthcoming issues. On this occasion I would like to say that the Computer Science Engineering department (DS) creates engineers with dynamism, smartness and in-depth understanding of technical fundamentals.

DEPARTMENT PROFILE

The Department of CSE- Data Science established in the year 2020 with an intake of 60, as an Emerging Branch in the area of Computer Science and Engineering. An intake is increased to 120 from the academic year: 2023-2024. It provides engineering and problem-solving skills using computational methods. The students will have an opportunity to learn principles, tools and techniques to model various real-world problems, analyse them, and discover useful information. Further, this specialization empowers the students in decision-making using advanced data analytics and data visualization techniques. The prime focus of this program is to equip students with statistical skills, mathematical reasoning, machine learning, and knowledge discovery and visualization skills. The program is designed to meet the increasingly aggressive demand for qualified data scientists in virtually every sector of the economy. The graduates of the program will have scope in different industries that work on domains such as finance, business, economics, healthcare, and research laboratories etc.,

The department has 12 highly qualified and committed faculties, all of them have a rich experience in teaching, dedication towards the pursuit of academic excellence and they are specialized in diverging areas of technology like Computer Networks, Data Mining, Network Security, Cloud Computing and Artificial Intelligence etc. The Department of CSE continues to recruit teachers with rich experience in academics, industry, and research and supports them providing superior research facilities.

The Department interacts with industries which have a high reputation and track record. It also has tie-ups with well-known associations like IEEE, IE, ISTE in pursuit of excellence reaching higher standards through Research Collaboration, faculty and students have regular interactions together.

Department Vision

To achieve academic excellence and be a globally recognized research center in the field of Data Science.

DEPARTMENT MISSION

1. To provide cutting-edge education in the field of Data Science.
2. To empower students to develop innovative and cognitive solutions with the help of data analytical skill set.
3. To establish strong partnerships with industry and research organizations in the field of Data Science, and to excel in research in emerging areas.
4. To cultivate a strong sense of social responsibility among students, fostering their inclination to utilize their knowledge and skills for the betterment of society.

Course Recommender for Collaborative e-Learning Based on Machine Learning and Cloud Platform

In the digital era, education is no longer confined to classrooms or physical textbooks. The convergence of machine learning (ML) and cloud platforms has ushered in a new age of collaborative e-learning, revolutionizing how knowledge is accessed, shared, and internalized. This model not only facilitates personalized learning experiences but also fosters active collaboration among learners, educators, and intelligent systems globally.

The Need for Collaborative e-Learning

Traditional e-learning systems often focus on content delivery rather than engagement or collaboration. However, modern learners thrive in environments that:

- Promote peer interaction
- Provide real-time feedback
- Enable remote, scalable access
- Offer adaptive learning paths

To meet these demands, a system must be both intelligent and flexible — two characteristics made possible by ML algorithms and cloud infrastructure.

As online education continues to grow, learners face an overwhelming number of course options, often leading to confusion and suboptimal learning paths. In response to this challenge, the development of course recommender systems for collaborative e-learning platforms has emerged as a crucial solution. By integrating machine learning (ML) techniques with the scalability and accessibility of cloud computing, these systems can analyze vast amounts of learner data to provide intelligent, personalized course recommendations that enhance engagement, performance, and collaboration.

Machine learning plays a central role in powering course recommender systems. Using algorithms such as collaborative filtering, content-based filtering, and deep learning, these systems can track user behavior, assess learning preferences, and predict relevant courses based on individual and group learning patterns. In a collaborative e-learning environment, ML further enhances recommendations by incorporating peer interactions, discussion activity, and performance in group tasks. For instance, if a student excels in group-based problem solving within data science, the system might suggest more advanced, team-oriented projects in that domain. Furthermore, ML models can adapt over time, continuously refining their recommendations as learners progress and their interests evolve.

The integration of cloud platforms amplifies the impact of these recommender systems by offering real-time data processing, scalable storage, and seamless deployment of ML models. Cloud services from providers like AWS, Google Cloud, and Microsoft Azure enable developers to host recommender systems that are accessible to thousands of users simultaneously, while ensuring high availability and low latency. These platforms also facilitate data integration from various sources such as LMS (Learning Management System) logs, discussion forums, quizzes, and peer assessments. In collaborative learning settings, cloud-based architecture allows for shared access to learning resources, group recommendations, and synchronized progress tracking.

By combining these technologies, course recommender systems not only help learners find relevant content but also foster a collaborative learning ecosystem. They can recommend courses that match group objectives, suggest peers with similar goals for team formation, or identify complementary skills among students to encourage collaborative projects. Real-world platforms like Coursera, Udemy, and edX already use basic versions of such systems, but the future points toward more dynamic, context-aware recommendation engines that integrate deeper collaborative features and intelligent insights.

Despite the promising advantages, challenges remain. Ensuring the privacy and security of learner data, reducing algorithmic bias, and supporting learners with limited digital access are key concerns. Addressing these will require transparent ML models, ethical data governance practices, and inclusive design strategies. Looking ahead, the next generation of course recommenders may leverage federated learning, AI explainability, and integration with immersive technologies like AR/VR to further personalize and humanize digital education.

Dr NANAVATH VENKATESH NAIK B.Tech, M.Tech, Ph.D.
Associate professor

STUDENT ARTICLE

ARTIFICIAL INTELLIGENCE (AI)

The term artificial intelligence (AI) refers to the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems capable of carrying out tasks perceived as requiring human intelligence. Since the mid-20th century, computers have been programmed to carry out very complex tasks, such as playing chess and solving mathematical problems. Despite continuing advances in computer processing speed and memory capacity, there are as yet no programs that can match full human flexibility over wider areas or in tasks requiring much everyday knowledge. On the other hand, some programs can perform certain specific tasks as well as humans. AI in this limited sense is found in a variety of applications. These include, among others, medical diagnosis, voice or facial recognition, chatbots (computer programs designed to converse with humans), and virtual assistants (computer programs that help users perform various tasks).

The earliest substantial work in the field of AI was done by British mathematician and computer pioneer Alan Turing. In 1950 Turing declared that one day there would be a machine that could duplicate human intelligence in every way and prove it by passing a specialized test. In this test, a computer and a human hidden from view would be asked random identical questions. If the computer were successful, the questioner would be unable to distinguish the machine from the person by the answers.

AI's capabilities in relation to the Turing test continue to be discussed and debated. In 2022, for instance, the AI research company OpenAI introduced the chatbot ChatGPT, which quickly became popular. ChatGPT can provide answers to users' questions or generate text about a given subject. People can ask it questions in conversational, or natural, language as if they are chatting with another person. The chatbot's performance led some experts to conclude that ChatGPT had passed the Turing test. Others claim that ChatGPT did not pass a true Turing test, because, in ordinary usage, ChatGPT often identifies itself as an AI program.

Because the final goal of AI is to create computers that can "think" as humans do, some AI proponents have suggested that computers should be patterned after the human brain. The brain essentially consists of a network of nerve cells, called neurons. The first artificial neural network was developed in 1954. At that time the goal of "strong AI"—that is, a system that approaches human intelligence—was shared by many. Today, artificial neural networks are capable of an array of sophisticated tasks, including recognizing faces and other objects from visual data. However, the optimism over achieving strong AI has given way to an appreciation of the extreme difficulties involved.

DEPARTMENT CONDUCTED PROGRAMS

1.FRESHERS'S DAY



Fresher's Day event, Cultural and Games activities for first year student conducted on 29.9.24.

2.DEPARTMENT CLUB ACTIVITY



Department club activity-Data Crawlers in association with IEEE RAS student branch chapter in that Technical Quiz, typing test, Paper Presentation, Debate, Coding Competitions conducted on 08.11.24

3.GUEST LECTURE



One day Guest lecture on “Sales force CRM software” Mr. Nagendra Madineni CEO Reshapp software solution Pvt Ltd Hyd, acted as a Resource Person conducted on 08.11.24.



One day Guest lecture on “Sales force CRM software” Mr. Nagendra Madineni CEO Reshapp software solution Pvt Ltd Hyd, acted as a Resource Person conducted on 08.11.24.

4. FACULTY DEVELOPMENT PROGRAM



A five days faculty development program on “Cloud Architect” in collaboration EXCELR, was conducted from 18th Nov 2024 to 22nd Nov 2024. The resource person was B. Balachandra, Senior Cloud Specialist. A total of 50 faculty members have attended this program.

5.SEMINAR ON"NPTEL CERTIFICATION COURSE FOR CREDIT TRANSFER



One day seminar held on 18.12.24 with Mr.S Mohammad Eliyas, Asst.Prof, NPTEL-SPOC act as resource person.

STUDENT ACHIEVEMENTS

- Six Students received IEEE student membership on 10.10.24.
- 12 Students are Runners and 7 students in Smart India Internal Hackthon-2024, Santhiram Engineering College held on 31.8.24.
- J. Vyshnavi Reddy selected for grand finale in IEEE YESIST12 2024 organised by Zero Hunger, Tunis Science City, Tunisia held from 7.9.24 to 8.9.24.
- Shaik Ameer Hussain and Seelam Hima Bindu selected for Phase-III in National Youth Festival” Viksith Bharat Young Leaders Dialogue, Acharya Nagarjuna University, Guntur Organised by Ministry of Youth Affaira and Sports and My Gov” held on 31.12.24.
- J. Vyshnavi Reddy, D. Neeraja, A. Sameera and P. Hemachand participated in Five Days International IEEE Nanotechnology Summer School Dept.ECE program in Madanapalle Institute of Technology Science, Madanapalle, held from 12.12.2024 To 16.12.2024.
- J. Vyshnavi Reddy participated in “Gender Equity and Improve Iclusion” organised by A Step Beyond BINARY- Let's break the Glass Ceilings,RGM SET,IEEE WIE Hyderabad Section held from 19.07.2024 To 20.07.2024.
- T. Mahimanvitha participated in Quiz organised by NICE 2024 held on 16.07.2024.
- J. Vyshnavi Reddy participated in "Quality and Reliability” organised by IEEE Reliability Society Chapter of Hyderabad Section in association with ATPSS, VNRVJIET SB, RSBCs of JNTUA, RGM CET, MITS, VFSTR, SAC, WiE AG held on 03.11.2024.

SPORTS:

- Five students participated in EENADU SPORTS LEAGUE 2024(Cricket) on 5.12.24

MOOCS THROUGHT NPTEL:

- 33 students successfully completed “Programming in JAVA” course in SWAYAM NPTEL during July – Oct,2024 (12 Weeks Course)
- 27 Students successfully completed “Cyber Security and Privacy” course in SWAYAM NPTEL during July-Oct,2024.
- Eight Students successfully completed “Deep Learning” course in SWAYAM NPTEL during July-Oct,2024.

VIRTUAL INTERNSHIP:

- 262 Students completed internship under AICTE by Edu Skill from Oct to Dec 2024.
- 45 Students completed internship under AIMER Society on 18.07.24.
- Six Students completed internship under Brain O Vision from May to July 2024.
- Five Students completed internship under APSHE in July and august 2024.
- One Student completed internship under AWS academy in November 2024.
- One student completed internship under Accenture from April to Oct 2024.
- 20 Students completed internship under AICTE in SREC from 2.12.24 to 22.12.24.

FACULTY ACHIEVEMENTS

- Mrs. N. Ramadevi Associate Prof received IEEE membership on 10.10.24
- Mrs. N. Ramadevi Associate Prof. CSE(DS) Dept is received 100% pass percentage in Internet of Things for III B.Tech-2021 Batch for A.Y: 2023-24.
- Mrs. K. Salma Khatoon Asst. Prof attended FDP “Cloud Computing” During July-2024 to Oct-2024.

FACULTY ATTENDED JOURNALS / CONFERENCES / WORKSHOPS/FDP/PATENTS

Patents & Conferences

Sl. No.	Patent Application No.	Status of Patent (Published. Granted)	Name of the Faculty	Title of the Patent	Patent Published Date. Granted Date (DD.MM.YYYY)
1	202441050782	Published	N. RAMADEVI	INTELLIGENT DOOR LOCK SYSTEM USING AN ADVANCED IOT	19.07.2024

FDP & Workshops

S.No.	Name of the Faculty	Nature of the Program	Duration of the Event	From Date	To Date	Name/Title of the Event	Name of the Organization &Address
1	N.Ramadevi	FDP	One Week	08.07.2024	13.07.2024	Machine Learning Algorithms and Exploratory Data Analysis	Pantech e Learning Pvt.Ltd
		FDP	5-Days	16.09.2024	20.09.2024	Gen-AI and Prompt Engineering Using Microsoft Co-Pilot.	BNM Institute of Technology Bangalore (BNMIT) - Rajkot
		FDP	One Week	03.10.2024	09.10.2024	Java Demystified	Electronics & ICT Academy, C-DAC
		FDP	5-Days	18.11.2024	22.11.2024	Cloud Architect	Vardhaman Engineering College, Shamshabad - Hyderabad,
		Workshop	1 Day	20.08.2024	20.08.2024	AI for Student:Build Your Own Generative AI Model'	Nxt WaveTM
2	S. Sadia Fathima	FDP	One Day	03.08.2024	03.08.2024	"Innovative AI Tools for Academic Research and Writing"	Santhiram Engineering College,
		FDP	5-Days	19.08.2024	23.08.2024	"Full Stack Data Science Generative AI"	Madanapalle Institute of Technology & Science,
		FDP	One Week	03.10.2024	09.10.2024	Java Demystified	Electronics & ICT Academy, C-DAC
		FDP	1 WEEK	09.12.2024	14.12.2024	Revolutionizing Learning Hands on with Generative AI AND LLMS	SVR Engineering College
		Workshop	1 Day	20.08.2024	20.08.2024	AI for Student: Build Your Own Generative AI Model'	Nxt WaveTM
		NPTEL	12 Weeks Course	Jul-24	Oct-24	Cloud Computing	Swayam NPTEL

3	K. Salma Khatoon	FDP	5 days	16.09.2024	20.09.2024	Gen-AI and Prompt Engineering Using Microsoft Co-Pilot	BNM Institute of Technology Bangalore (BNMIT)
		FDP	One Week	03.10.2024	09.10.2024	Java Demystified	Electronics & ICT Academy, C-DAC
		AICTE(ATA L) FDP	5 Days	16.12.2024	21.12.2024.	Revolutionizing Learning Hands on with Generative AI AND LLMS	SVR Engineering College
		AICTE(ATA L) FDP	5 Days	09.12.2024	14.12.2024	Cryogenics Treatment on Materials, Processes & Equipment	Santhiram Engineering College (Autonomous)
4	S. Reshma	FDP	One-Week	08.07.2024	13.07.2024	Machine Learning Algorithms and Exploratory Data Analysis	Pantech e Learning Pvt.Ltd
		FDP	5-Days	19.08.2024	23.08.2024	"Full Stack Data Science Generative AI"	Madanapalle Institute of Technology & Science,
		FDP	One Week	03.10.2024	09.10.2024	Java Demystified	Electronics & ICT Academy, C-DAC
5	B.V. Charan Kumar	FDP	One Week	03.10.2024	09.10.2024	Java Demystified	Electronics & ICT Academy, C-DAC
		College Youth Ideathon 2025	1 Day	18.02.2025	18.02.2025	Academics to Entrepreneurs- Harnessing Knowledge for Impact	College Youth Ideathon

Conferences

- Mrs. N. RamaDevi, Associate Prof presented a paper entitle” Detecting Social Distancing by Using Detectron2 and Open CV” on 08.07.24.
- Mrs. N. RamaDevi, Associate Prof presented a paper entitle” Development of Simultaneous Localization and Mapping for unmanned aerial vehicles using hyper spectral imaging techniques” on 22.10.24.
- Mrs. S. Sadia Fatima, Asst. Prof presented a paper entitle aerial “Development of smart grid resilience and stability analysis in high renewable penetration using artificial intelligence with IoT” on 22.10.24
- Mrs. S. Reshma, Asst Prof presented a paper entitle “Development of cloud based robotic application for search and rescue operations in disaster management” on 22.10.24.

Journals

- Mrs. N. RamaDevi, Associate Professor Department of CSE(DS) published a technical paper titled “Heuristic Selection of Right Functioning Node for Iterated Unscented Kalman Filter-based Mobile Target Tracking System in WSN” in International Journal of Intelligent Engineering, Vol.18, Issue No.4, May 2025 with ISSN number: 2185-3118 indexed in Scopus.

STUDENT'S VOICE

M. MUKESH KUMAR IV-CSE(DS)



My college has contributed immensely not only to my academic development but also to my growth beyond the classroom. By motivating me to organize, host, and actively participate in various cultural and technical events, it has helped me sharpen my presentation skills and enhance my proactiveness. I am truly grateful to my lecturers, HOD, and the management for their constant encouragement, guidance, and friendly support throughout my journey.

SOLVE IT

		7	4	9	1	6		5
2				6		3		9
					7		1	
	5	8	6					4
		3					9	
		6	2			1	8	7
9		4		7				2
6	7		8	3				
8	1			4	5			

$$4+8 = 5$$

$$8+5 = 4$$

$$6+7 = 6$$

$$9+9 = ??$$

Thank you