



NEURANEX

July-Dec 2024(Vol-1)

Department of computer science and engineering(AI&ML)

Jyothishmathi Institute of Technology & Science started its academic journey in 1997 with a quest to impart technical education to the rural youth. The commitment towards providing the highest quality of education through innovative teaching methods to its students has always brought laurels. Jyothishmathi Institute of Technology and Science (autonomous), Karimnagar, has signed a Memorandum of Understanding (MoU) with T-Hub, Talent Farm, TASK, Edunet Foundation, and SAP - Centre of Excellence in Hyderabad.

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Program Educational Objectives (PEOs)

Fundamental Knowledge: Graduates will build a strong foundation in mathematics, computer science, and artificial intelligence principles to analyze, model, and solve complex problems in AI and Machine Learning.

Core Competencies: Graduates will gain expertise in core areas of Artificial Intelligence and Machine Learning, aenabling them to design and implement intelligent systems for real-world applications.

Breadth: Graduates will acquire interdisciplinary knowledge to integrate AI/ML solutions across various domains such as healthcare, finance, robotics, and smart environments, adapting to emerging technologies and global needs.

Professionalism: Graduates will demonstrate ethical behavior, teamwork, leadership, and communication skills, contributing effectively in collaborative and multicultural work environments.

Learning Environment: Graduates will pursue lifelong learning through higher education, industry certifications, and innovation-driven projects in a dynamic and inclusive learning environment that nurtures creativity and entrepreneurial thinking.

INSTITUTE VISION

To be a premier engineering institution striving continuously to deliver quality technical education, nurturing competent engineers capable of achieving global excellence with societal consciousness

INSTITUTE MISSION

- To embrace emerging teaching techniques that equip students to face technical challenges with confidence and competence.
- To cultivate a culture of innovative thinking that inspires students to develop creative solutions to real-world problems.
- To instil leadership qualities and foster an entrepreneurial mind-set in students, enabling them to contribute positively to society.

DEPARTMENT VISION

To emerge as a center of excellence in Artificial Intelligence and Machine Learning, offering quality technical education that empowers future innovators to achieve global excellence and drive intelligent solutions for societal advancement

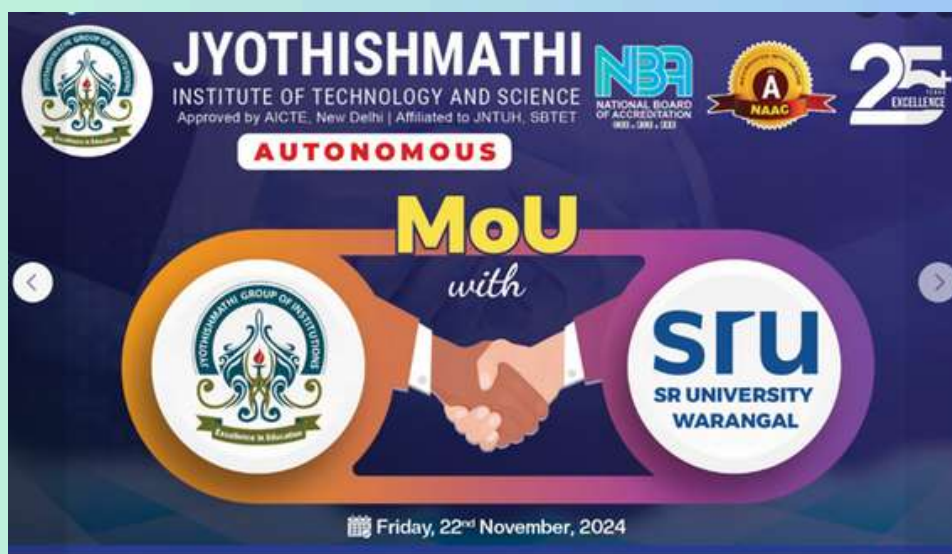
DEPARTMENT MISSION

- To provide quality education in AI and ML, equipping students with advanced computational skills to excel in a globally competitive environment.
- To foster a spirit of innovation and critical thinking, enabling students to develop practical solutions that benefit society.
- To promote strong collaborations with industry and academia, nurturing an entrepreneurial mindset and continuous professional growth in the field of AI and ML.

ACHIEVEMENTS

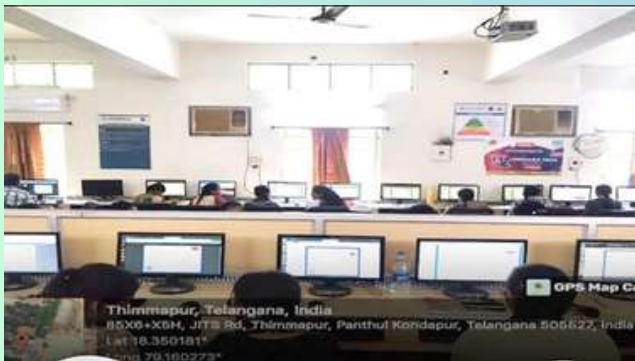
JITS Signs MoU with SR University for Academic and Research Collaboration:

Jyothishmathi Institute of Technology and Science (Autonomous), Karimnagar, signed an MoU with SR University, Warangal, on 22/11/2024 to enhance academic, research, and cultural cooperation. The agreement, signed by JITS Dean (Academics) Dr. P. K. Vaishali and SR University Dean (Ph.D. Programme) Dr. Balajee Maram, facilitates faculty and student exchanges, research collaborations, curriculum development, and joint academic events. It also enables JITS faculty to guide PhD scholars. This partnership aims to enrich educational experiences and foster innovation.



GUEST LECTURES

A three-day training program on **"Cloud Computing and Data Analytics,"** organized in collaboration with IBM-Eduvance and the Telangana Academy for Skill and Knowledge (TASK). This program aimed to prepare second-year Computer Science and Engineering(AI&ML) students for industry demands by providing hands-on experience with cloud computing models and data analytics projects. Students gained practical skills and received globally recognized certificates from IBM. The event, which concluded on July 20, 2024, was attended by various dignitaries, including Principal Dr. K.S. Rao, Dean Dr. K.Vaishali, and other faculty members



An Interaction Session on **"Career Guidance"** on August 7, 2024. During the session, it was highlighted that one of the key reasons for choosing Jyothishmathi Institute is its emphasis on experiential and practical learning, particularly in its International Development Studies program. The college places great importance on technical skills development and leverages adjunct professors with real-world experience to provide a field perspective, enriching the classroom learning environment.



The Department of Computer Science & Engineering(AI&ML) at Jyothishmathi Institute of Technology and Science (JITS), in collaboration with the Telangana Academy for Skill and Knowledge (TASK), organized a three-day workshop on **"Programming Essentials in Python"** from July 8 to 10, 2024. The workshop, led by TASK Technical Associate trainer Priya Ratna Priya, provided students with hands-on exercises covering topics from basic Python programming to advanced concepts like web scraping, Django, data science, and machine learning. This training aimed to enhance students' programming skills and improve their placement prospects. The event was supported by HOD Dr. V.Neelima, Coordinator R. Venkateswarlu, Assistant Professor Dinesh Nayak, and other faculty members.

GUEST LECTURES



A one-day workshop on the 'IBM Student Developer Programme' for B.Tech third-year students on August 30, 2024. This workshop aimed to equip students with cutting-edge IT skills, focusing on areas such as cloud computing, artificial intelligence, data science, and predictive analytics. The event was inaugurated by JITS Chairman Sri J. Sagar Rao, Secretary J. Sumith Sai, Principal Dr. K. S. Rao, and other faculty members. Supported by the Edunet Foundation and SAP Labs, the workshop featured hands-on training sessions led by Edunet Foundation master trainer Lakshman Rao. This initiative is part of IBM's commitment to training two million learners in AI by 2026, providing students with access to over 200 free courses in 20 languages through the IBM SkillsBuild platform.



A special interaction session with Mr. Jay R. Ligon, Director of International Affairs at Louisiana Tech University (LTU), USA. The session, held on August 13, 2024, focused on the graduate programs offered by LTU and marked a significant milestone in providing students with global educational opportunities. This event is part of an ongoing effort to strengthen academic collaboration and exchange programs between JNTU and LTU, supported by an active Memorandum of Understanding (MOU). The Vice-Chancellor of JNTUH emphasized the importance of this partnership in fostering academic collaboration and enhancing student outcomes through educational exchanges.



GUEST LECTURES



A five-day Faculty Development Programme (FDP) on Machine Learning, Computer Vision, IoT, and SAP-ABAP. This program, organized by the Edunet Foundation under the Code Unnati initiative, aimed to enhance the knowledge of 32 faculty members across various departments. Supported by SAP Labs India and the Telangana Academy for Skill and Knowledge (TASK), the workshop featured expert trainers who provided hands-on experience and case studies. The event was attended by JITS Chairman Sri J. Sagar Rao, Principal Dr. K. S. Rao, and other distinguished faculty members, emphasizing the importance of staying updated with emerging technological trends.



The CSR initiative of SAP Labs India, Code Unnati, has established a Centre of Excellence at Jyothishmathi Institute of Technology and Science (JITS) in collaboration with Edunet Foundation and Telangana Academy for Skill and Knowledge (TASK). This initiative aims to promote skill development and employability among youth by providing training in industry-relevant technologies such as Artificial Intelligence, Machine Learning, Cloud Computing, Computer Vision, and IoT. The program is designed for second, pre-final, and final-year students, offering both foundational and advanced courses. The Centre of Excellence was inaugurated with a two-day orientation program, featuring expert trainers from Edunet Foundation who guided students through various technical competencies.

GUEST LECTURES



Telangana Academy for Skill and Knowledge (TASK), recently organized a Placement Readiness Mentoring Programme On 20TH September aimed at preparing final-year students for upcoming placement activities. The event featured Swathi Adulapuram from Mentor Together Organisation, who emphasized the importance of preparation and adaptability in the evolving job market. She provided insights on dressing sense, communication skills, and the Mentor To Go app, which offers career mentorship to students from lower-income families. JITS Chairman Sri J. Sagar Rao and Secretary J. Sumith Sai highlighted the significance of securing campus placements and expressed confidence in the students' abilities, noting the frequent visits by companies for recruitment.



Dr. S. J. Sagi, speaking at an event organized by Jyothishmathi Institute of Technology and Science on September 25, 2024, emphasized the importance of engineers being creative thinkers and architects of the future. He highlighted the need for extensive knowledge acquisition and encouraged students to read both fiction and non-fiction for holistic development. Dr. Sagi also stressed the importance of developing engineering skills that align with societal needs and advised students to blend technical skills with soft skills and communication abilities. He concluded by urging students to practice meditation and spirituality for inner peace and success in life.



PLACEMENT AND TRAINING PROGRAMS

SAP Labs India has opened a “Centre of Excellence in Emerging Technologies” at Jyothishmathi Institute of Technology and Science (JITS). This initiative, part of the Code Unnati program, aims to train students in emerging technologies and enhance their industry-related skills and employability. The inauguration event, held on August 30, 2024, featured key figures from SAP Labs, Edunet Foundation, and Telangana Academy for Skill and Knowledge (TASK). The Centre of Excellence is equipped with infrastructure worth Rs 30 lakhs to provide hands-on training, preparing students for the future of work and improving their job readiness.



The Centre of Excellence in Emerging Technologies at Jyothishmathi Institute of Technology and Science (JITS) has launched a 120-hour training program for final-year and pre-final-year students. This initiative, supported by SAP Labs India and implemented by the Edunet Foundation, aims to enhance students' skills in cutting-edge fields such as Artificial Intelligence, Machine Learning, Cloud Computing, Computer Vision, IoT, SAP BTP, and ABAP. JITS Chairman Sri J. Sagar Rao and Secretary J. Sumith Sai emphasized the importance of such industry-driven programs in bridging the gap between academic learning and industry demands, encouraging students to actively participate and improve their employability skills.

PLACEMENT AND TRAINING PROGRAMS



Hearty congratulations to the students of Jyothishmathi Institute of Technology and Science (JITS) for securing impressive placements! This achievement reflects their hard work and dedication. The institute is proud of their accomplishments and looks forward to their bright futures. Here's to continued success and many more milestones ahead!

JYOTHISHMATHI
GROUP OF INSTITUTIONS
ENGINEERING | PHARMACY | MBA | B.Ed
AUTONOMOUS
Engineering College

NBA **NAAC** **25** EXCELLENCE

Hearty Congratulations
JITS STUDENTS SECURE GOOD PLACEMENTS

 P. Akshaya Mainframe Developer 7.0 LPA	 Ch. Varsha Analyst 4.0 LPA	 N. Ganesh Reddy Software Engineer 3.9 LPA
 B. Ambika Associate Customer Support 3.5 LPA	 Ch. Sanjana Associate Software Engineer 3.25 LPA	

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Engineering College

NBA **NAAC** **25** EXCELLENCE

Hearty Congratulations
To the Students placed in

tcs **TATA**
CONSULTANCY
SERVICES

Package
Systems Engineer 7.0 LPA

 K.UDAY KUMAR 21275A0521 Branch : CSE	 K.SAI KRISHNA 20QK1A0527 Branch : CSE	 G.PRASHANTH 20QK1A0548 Branch : CSE
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DEPARTMENT EVENTS

Smart India Hackathon (SIH) 2024 Internal Hackathon hosted on September 9, 2024. This nationwide initiative provides students with a platform to solve pressing real-world problems. Organized by the Ministry of Education's Innovation Cell and the All India Council for Technical Education, the event saw participation from about 400 B.Tech students. Dr. Katta Narasimha Reddy emphasized the importance of improving governance and quality of life through innovative solutions. The event highlighted the talent and creativity of students, with 45 out of 60 teams advancing to the next round, bringing them closer to national recognition.



JITS Hosts Seminar on Remote IT Earning Opportunities

The CSE(AI&ML) Department of Jyothishmathi Institute of Technology and Science (Autonomous), Karimnagar, in association with the CSI student chapter and Career Guidance Cell, organized a seminar on "**Unlocking Remote Opportunities and Earning Potential in the IT World**" on 20-11-2024.

Mr. Syed Hussaini, CEO of Zaha Web Consultants, guided students on leveraging freelance platforms like YouTube, Facebook, and Google AdSense for remote careers. The session concluded with an interactive Q&A, inspiring students to explore digital entrepreneurship. JITS Chairman Sri J. Sagar Rao, Secretary J. Sumith Sai, and faculty members attended the event



BEYOND CLASS ROOM

The “**Intinta Innovator-2024 Session**” was held at Jyothishmathi Institute of Technology and Science (JITS), Karimnagar. This government-supported initiative aims to foster new innovations in rural areas. Mr. P. Manideep, the District Innovation Coordinator, and Dr. K.S. Rao, Principal of JITS, emphasized the importance of innovation for national development. The event saw enthusiastic participation from approximately 300 B.Tech students, who presented their innovative ideas. The session inspired students to utilize government support to develop their ideas, contributing to societal and personal growth. Selected innovations will be showcased during the Independence Day celebrations, with the government providing patents and funding for scalable projects through the Telangana State Innovation Cell (TSIC).



Jyothishmathi Institute of Technology and Science (JITS) celebrated the 78th Independence Day with great enthusiasm. The event, held from August 12 to August 14, 2024, featured various sports, cultural, and technical events. JITS Chairman Sri J. Sagar Rao hoisted the national flag, and winners of the events were awarded mementos and certificates of merit. Principal Dr. K. S. Rao, Dean Dr. K. Vaishali, and other faculty members participated in the celebrations, emphasizing the importance of technology and science in promoting harmony and unity in the country.



Launched a Miyawaki forest initiative, led by Chairman Sri J. Sagar Rao and Secretary J. Sumith Sai. This initiative involves planting saplings with the help of students and staff to create a dense forest on the campus. The Miyawaki method is known for its ability to create dense, native forests that support biodiversity and help reduce pollution. The initiative aims to foster environmental sustainability and instill a sense of responsibility in students, encouraging them to nurture the saplings throughout their academic journey and beyond.

BEYOND CLASS ROOM



Celebrated Teacher's Day on September 5, 2024, to honor the birth anniversary of Dr. Sarvepalli Radhakrishnan, India's second President. The event featured floral tributes to Dr. Radhakrishnan's portrait by JITS Chairman Sri J. Sagar Rao, Secretary J. Sumith Sai, Principal Dr. K. S. Rao, and other dignitaries. The Chairman emphasized the importance of great teachers who guide students towards their destiny and admired the faculty for balancing personal and professional commitments. Faculty members were felicitated with gifts as a token of appreciation for their dedication.



Celebrated Engineer's Day on September 18, 2024, with a series of technical events organized by the Institution Innovation Council (IIC). Students enthusiastically participated in poster presentations, coding contests, and circuit debugging. The winners and runners-up were awarded cash prizes by JITS Chairman Sri J. Sagar Rao, Secretary J. Sumith Sai, and Principal Dr. K. S. Rao. The event also saw the presence of department heads, coordinators Dr. M. Manikandan and Dr. V. Neelima, and other faculty members, who congratulated the participants on their achievements.



BEYOND CLASS ROOM

Celebrated Bathukamma, the festival of flowers, on October 5, 2024, with great enthusiasm. The event saw girl students from various branches, including CSE, IT, and ECE, creating beautiful conical arrangements using a variety of flowers such as Cassia (thangedu), luffa (bera), celosia (gunugu), and marigold (banthi). These arrangements were not only visually stunning but also carried important social messages like **"Save Girl Child," "Say No to Drugs,"** and **"Save the Environment from Pollution."**

The boys assisted in preparing the Bathukammas by arranging and cutting the flowers. A standout creation was a Bathukamma designed in the shape of a temple, which received accolades for its creativity. The celebrations included a procession from classrooms to the sprawling grounds, where students placed their Bathukammas at the center, offered prayers to Goddess Gauri, and danced around them while singing traditional songs. They also played dandiya, captivating the audience with their performances.

JITS Chairman Sri J. Sagar Rao, Secretary J. Sumith Sai, Principal Dr. K. S. Rao, and Dean (Academics) Dr. P. K. Vaishali participated in the celebrations. The Chairman distributed cash prizes to the best-designed Bathukammas with social messages. The first prize went to the CSE-C final year students, the second prize to CSM-A third year students, the third prize to ECE-A fourth year students, and a consolation prize to first year CSE-D students. The event also emphasized environmental sustainability by avoiding the use of posters and plastic in the decorations.



BEYOND CLASS ROOM

Jyothishmathi Institute of Technology and Sciences (Autonomous), Karimnagar, has received approval for an NCC unit under the 9 Telangana Battalion. NCC authorities, including Naib Subedar Vijay Kumar and Havaladar P. Venkateshwar Rao, conducted physical drills and selection tests on campus. The unit will comprise 108 cadets, enrolling 36 each year. Enthusiastic participation from both boys and girls led to the selection of an additional 30 cadets. JITS Chairman Sri J. Sagar Rao emphasized that the NCC unit aims to instill discipline, leadership, courage, and patriotism among students.



NCC Unit Inaugurated at Jyothishmathi Institute of Technology and Science

Col. Daniel Lotzem, NCC Commanding Officer of the 9 Telangana Battalion, inaugurated the NCC unit at Jyothishmathi Institute of Technology and Science (Autonomous), Karimnagar, on 28/10/2024. He highlighted NCC's role as the world's largest uniformed youth organization, shaping future leaders with discipline and service. The self-financed unit will be guided by a retired Army official and PI staff from the battalion. He encouraged cadets to take B and C certificate exams and participate in training camps, emphasizing NCC's benefits for career growth, scholarships, and entry into the Armed Forces. The event included a formal office inauguration, a tree plantation, and an interaction with cadets. College Chairman Sri J. Sagar Rao, Secretary J. Sumith Sai, Principal Dr. K. S. Rao, and other dignitaries attended the occasion.



JITS Students Secure Runners-Up Position at National Hackathon HACK-ARENA

A team of final-year CSE(AI&ML) students from Jyothishmathi Institute of Technology and Science (Autonomous), Karimnagar, emerged as runners-up at the National Level Hackathon **HACK-ARENA** organized by IEEE Student Chapter, Guru Nanak Institutions, Hyderabad, from November 21-23, 2024.

Team Agri Vision, comprising Subramanyam, G. Anurag Goud, A. Akshay, P. Roshini, Akhila, and D. Srija, competed against hundreds of teams, including IIT and NIT participants. They secured second place under the Clean and Green Technology theme. JITS Chairman Sri J. Sagar Rao, Secretary J. Sumith Sai, Principal Dr. K. S. Rao, and Dean Dr. P. K. Vaishali congratulated the students on their achievement.



Explainable AI: Building Trust in Machine Intelligence

- Explainable AI (XAI) focuses on making AI models transparent and understandable, addressing the "black-box" nature of deep learning.
- XAI is critical in industries like healthcare and finance, where trust and accountability are paramount.
- By providing insights into how AI arrives at decisions, XAI ensures ethical and unbiased applications of technology.
- As regulations tighten, explainability will play a crucial role in AI adoption, fostering trust between humans and machines.



Generative AI:

Redefining Creativity Generative AI models, such as **GPT** and **DALL·E**, are transforming the creative and professional landscape. These models can generate human-like text, realistic images, and even compose music, offering new tools for industries like content creation, design, and entertainment.

Applications extend to chatbots, code generation, and virtual assistants. As generative AI evolves, it raises concerns about ethical usage, copyright, and misinformation but remains a driving force in technological innovation.

Generative AI is not only reshaping traditional workflows but also opening avenues for hyper-personalization in marketing and user experiences. Beyond the arts, it has potential in healthcare, like generating synthetic medical data for research while safeguarding patient privacy. Its ability to mimic human creativity, though extraordinary, raises questions about originality and authenticity in creative domains.

Federated Learning: Privacy-Preserving AI Federated Learning enables the training of machine learning models across decentralized devices while keeping data localized, ensuring privacy. This approach is pivotal in sensitive fields like healthcare and finance, where sharing raw data is risky.

With growing adoption by mobile devices (e.g., personalized recommendations on smartphones), federated learning strikes a balance between enhancing AI's capabilities and safeguarding user privacy, showcasing AI's future in responsible data handling.

This method significantly reduces the risks of data breaches, as raw data never leaves the user's device. It is instrumental in enabling personalized experiences while complying with data protection regulations like GDPR. Advances in federated optimization algorithms are enhancing model accuracy even in highly distributed environments. Beyond traditional fields, federated learning is finding its way into edge computing, enabling AI to perform real-time tasks with low latency. With its ability to democratize AI across devices, federated learning is driving a future where privacy and performance go hand in hand.



"My time in college was a real turning point, where I developed both my technical skills and a surprising creative side. As a computer science student, I learned a lot about algorithms and fixing bugs, but I also found I loved design through making posters and interfaces. Learning about UI/UX design on my own, with encouragement from my professors, showed me that coding and creativity can work really well together. The friends I made and the guidance I received still inspire me today".



It is with great pride that we present this edition of the Computer Science Department Magazine. Each article, project highlight, and success story featured here is a testament to the hard work and passion of our students and faculty. As technology continues to reshape the world, this magazine serves as a platform to showcase the ideas and innovations that keep us at the forefront. Dive in and be inspired by the journey of our vibrant community. We also feature the incredible projects, hackathon victories, and internship experiences that showcase the talent and dedication of our department.

Sri Juvvadi Sagar Rao

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Sri Juvvadi Sumith Sai

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Dr. K. S. Rao

Principal

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