INSTITUTE OF ENGINEERING & TECHNOLOGY
(UGC Autonomous)
(Accredited by NAAC, Approved by AICTE & Permanently Affiliated to JNTUH)

Department of CSE

VOLUME VIII ISSUE II JUNE 2022

SPECIAL POINTS OF INTEREST:

- Technology Trends in 2022
- Department Events
- Technical Interview questions
- Student Articles

INSIDE THIS ISSUE:

About JBIET

Sri. J.V.Krishna Rao HRA (USA) -Secretary J.B. Educational Society

As one of the top ten most preferred institutions in Telangana, JBIET continues to strive to impart technical (engineering) and professional education of very high standards.

The aim of JBIET is to mould young learners into globally competitive professionals who are professionally deft, intellectually adept and socially responsible.

The expert faculty at JBIET inculcate the best values and principles, ascribing to a modern curriculum; while the students imbibe pragmatic perception and a pro-active nature, which spurs them towards exploration and advanced inquiry, resulting in valuable insights.

The Placement record of JBIET over the years is proof of our right efforts in enabling the best in class engineering, technical and professional education to aspirants.

The College offers various UG & PG Courses.

JBIET'S VISION & MISSION

Vision

To be a center of excellence in engineering and management education, research and application of knowledge to benefit society with blend of ethical values and global perception.

Mission

- To provide world class engineering education, encourage research and development.
- To evolve innovative applications of technology and develop entrepreneurship.
- To mould the students into socially responsible and capable leaders.

About Department

The Department of Computer Science & Engineering was started in the year 2015. It offers Undergraduate Programmed, B. Tech Computer Science & Engineering, which prepares students for the recent and forthcoming demands of industry and the research world.

The Department offers a Master's Programme namely, M. Tech in Computer Science & Engineering. This programme prepares students to become leaders in knowledge driven professions.

The immensely dedicated and highly professional faculty members in the Department are active in the Research Areas of Artificial Intelligence, Machine Learning, Data Science, Network Security, Wireless Networks, Block Chain Technologies, Big Data, Data Mining, Data Analytics, Cloud Computing etc.

Department has well equipped and state-of-the-art Laboratories to train students in various technologies. The Department also makes use of the Innovation Laboratories to train its UG and PG students in the respective technology areas and research.

The Department has many Adjunct Professors/Professor of Practice who typically have positions at Industry or other Premier institutions to bring in the industry expertise and research rigor in our programmes provide specialized supervision of student projects.

The students of CSE Department are placed in various top MNCs like IBM, Accenture, Cap Gemini, Cognizant, Wipro, Infosys, Mind tree, etc. with an emolument in the range of 2.86 Lakhs to 9.75 Lakhs per annum.

About Department

Vision

To meet the emerging trends in computer Scienceand Engineering, strive forself-reliance enabled through high end research by adapting a futuristicapproach.

Mission

M1: To impart qualitative education, prepare students refurbish their latent talents and aspire for a pragmatic career in Computer Science and Engineering.

M2: To provide an ambiance to develop strategic areas of advance study with perception to foster industry centric education in Computer Science and Engineering.

M3: To inculcate self-learning among students to make them self-reliant and socially responsible.

Program Educational Objectives (PEOs)

Program outcomes are narrower statements that describe what students are expected to know and be able to do upon the graduation. They are formed in line with the graduate attributes of NAAC. These relate to the Skills, knowledge, attitudes, values and behavior outcomes that students acquire through the program.

PEO1	To prepare graduates to apply the knowledge and skills acquired in Mathematics, Basic Science and Engineering to succeed in their career, pursue research and or obtain higher / advanced degree.
PEO2	To prepare graduates to learn emerging technologies, work in multidisciplinary fields, apply computer engineering solutions within a global, societal, environmental context, acquire leadership qualities and enable them to become successful entrepreneurs.
PEO3	To prepare graduates communicate effectively, exhibit professionalism with integrity, morals, ethical conduct and engage in lifelong learning.

Program Specific Outcomes (PSOs)

PSO 1	Ability to design and develop computing system using mathematical knowledge and expertise other disciplines.
PSO 2	Ability to test and analyse quality of various systems to integrate them in larger computer systems.

About Department

Program Outcomes (POs)

PO1	**Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem Analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
PO3	**Design / Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex problems**: using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.
PO5	**Modern Tool Usage**: Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	**The Engineer and Society**: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to professional engineering practice.
PO7	**Environment and Sustainability**: Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
PO9	**Individual and Teamwork**: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	**Project Management and Finance**: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	**Life-long Learning:** Recognize the need for and have the preparation and ability to engage in independent and life- long learning in the broadest context of technological change. Any signatory needs to provide an overview of its learning outcomes and confirm that compliance of programs.

Message from HOD

Dr.Putti Srinivasa Rao,Ph.D
HOD Department of CSE

I feel privileged to head the Department of Computer Science and Engineering. The department has consistently maintained an exemplary academic record. The greatest asset of the departmentis its highly motivated and learned faculty.

The objective of the department is to prepare students for successful careers in industry, research and academics to meet the needs of growing technology.

"We are what our thoughts have made us. So take care about what you think. Always be a part of the solution, do not be the part of problem. Always try to update your knowledge else, you will be outdated. If you want success do all the things you are supposed to do, then you need not search for shortcuts".

"People worry that computers will get too smart and take over the world, but the real problem is that they're too stupid and they've already taken over the world."

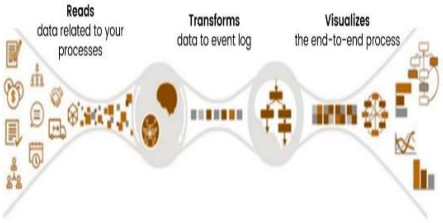
Technology Trends in 2022

Process Mining

It is a technique for analyzing business processes based on event data. It involves extracting event logs from various systems and then identifying process flows, bottlenecks, and inefficiencies from these logs. Process mining techniques can be combined with machine learning algorithms to automatically identify patterns and anomalies in process data. Both are important in order to improve processes and optimize operations.

Process Mining Benefits

- Analyse processes fully and accurately based on the facts.
- Zero bottlenecks, deviations and inefficient processes that should be rethought or automated.
- Continuously monitor processes and measure improvements.
- Simplify compliance, with full audit trails.
- Use in banking and financial services, insurance, manufacturing, or healthcare and beyond.
- Analyse virtually any process in any functional area: contact centres, purchase-to-pay, and more.



Mr. A. Ramesh Babu, M.Tech

Assistant Professor, CSE Dept.

Faculty Accomplishments

Research paper - related activity done

Sl.NO.	Name of the Author(s)	Name of the Journal	Title of the paper	Indexed in	Vol. No and Page nos.	ISBN/ ISSN	Date
1.	Mr.Raj Kumar	IJRECE	Detecting Phishing Attacks using Natural Language processing	e-Journal	Vol.10 Issue 2	ISSN(Online) 2348-2281 ISSN(print) :2393:9028	June 2022
2.	Mr.S.Sathish Kumar	IRJMETS	An Interpretable Convolutional Neural Network Based Classifier For Brain Tumor DETECTION	e-Journal	Volume:4 /Issue:06	e-ISSN:582-5208	June-2022
3.	B. Nagewara Rao	IJRAR	Breast Cancer Prediction using convolutional neural networks	e-Journal	Vol.9 Issue 2	E-ISSN: 2348-1269 P-ISSN: 2349-5138	June-2022
4.	Dr.P.Srinivasa Rao	IRJMETS	Distinction Of Mobile Frameworks: Flutter Vs Native Apps	e-Journal	Volume:4 Issue :06	e-ISSN: 2582-5208	June-2022
5.	K.Srikanth	IRJMETS	Web Based Online Blood Bank Management System	e-Journal	Volume: 04/Issue:6	e-ISSN: 2582-5208	June-2022

Faculty Accomplishments

6.	N.Thirumala Rao	International Research Journal of Modernization in Engineering Technology and Science	Prediction Of Heart Attack Possibilities Using Machine Learning	UGC JOURNAL	Vol:4 Issue 6	e-ISSN: 2582-5208	June-2022
7.	Dr.G.Arun Sampaul Thomas	EPRA International Journal of Multi disciplinary Research	Advanced You Only Look Once for Specialized Driving Perception	UGC JOURNAL	Vol: 8 Issue6	ISSN (Online) 2455:3662	June-2022
8.	Dr.P.Srinivasa Rao	International Research Journal Of Modernization In Engineering Technology And Science	A Hybrid Method To Enhance Smart Traffic Management In Cities using Machine Learning	UGC JOURNAL	Vol:04 Issue:6	E-ISSN: 2582-5208	June-2022
9.	Dr .G . Arun Sampaul Thomas	International Research Journal of Modernization in Engineering Technology and Science	Optimized Task Aligned One Stage Object Detection	UGC JOURNAL	Vol:4 Issue:6	e-ISSN: 2582-5208	June-2022
10.	Mr.G.Sreenivasulu	International Research Journal of Modernization in Engineering Technology and Science	Block chain Based Education Document Verification System	UGC JOURNAL	Vol:11 Issue 6	e-ISSN: 2319-8753	June-2022

Faculty Accomplishments

(Conference / Patent / Paper / Book Publication Etc.,)

Patents

- Dr. Niraj Upadhayaya filed a patent in the topic **"An Electric Vehicle Safety Evaluation Device"** dated on 31-03-2022.

Publications

- Dr.Niraj Upadhayaya, Published**,** paper entitled **"A Framework for Collaborative Computing on Top of Mobile Cloud Computing to Exploit Idle Resources",**held at the Journal Of Annals of Data Science,indexed in SCOPUS online copy,https://doi.org/10.1007/ s40745-022-00390-z, accepted in March 2022.
- Mr.A.Ramesh Babu Published**,** paper entitled **"A Framework for Collaborative Computing on Top of Mobile Cloud Computing to Exploit Idle Resources",** held at the Journal Of Annals of Data Science,indexed in SCOPUS online copy,https://doi.org/10.1007/ s40745-022-00390-z, accepted in March 2022.
- Mrs.Anusha Ampavathi & Mr. T.Vijaya Saradhi, Published a paper entitled **"Research challenges and future directions towards medical data processing"** held at Computer Methods In Biomechanics and Bio Medical Engineering Imaging & Visualization indexed in SCOPUS , Volume 10 10.1080/21681163.2021.2018665, Issue 10 ,dated 03, January 2022.

Conferences

- Mr.Raj Kumar Published an e-paper entitled "**Detecting Phishing Attacks using Natural Language processing "** held at conference IJRECE Indexed in e-journal ,Vol.10 Issue 2, ISSN(Online)2348-2281 ISSN(print):2393:9028 in June 2022.
- Our CSE Faculty, Dr.P.Srinivasa Rao Published an e-paper **entitled "Distinction Of Mobile Frameworks: Flutter Vs Native Apps"** held at IRJMETS Indexed in e-journal ,Volume:4 Issue:06, e-ISSN: 2582-5208 in June 2022.
- Dr.G.Arun Sampaul Thomas, Published an e-paper entitled **"Advanced You Only Look Once For Specialized Driving Perception"** held at conference EPRA International Journal of Multi-disciplinary Research ,Indexed in UGC journal ,Vol.08 Issue 6, ISSN (Online) 2455:3662 in June 2022.

Faculty Accomplishments

- Mr. N.Tirumala Rao ,Published an e-paper entitled **"Prediction Of Heart Attack Possibilities Using Machine Learning"** held at conference International Research Journal of Modernization in Engineering Technology and Science, Indexed in UGC journal ,Vol.4 Issue 6, e-ISSN: 2582-5208in June 2022.

- Mr.G. Sreenivasulu, Published an e-paper entitled **"Block chain Based Education Document Verification System"** held at conference International Research Journal of Modernization in Engineering Technology and Science, Indexed in UGC journal ,Vol.11 Issue 6, e-ISSN: 2319-8753 in June 2022.
- Mr. S. Sathish Kumar, Published an e-paper entitled **"Video Classification Using Deep Learning Technique"** held at IRJMETS Indexed in e-journal, Volume:4 Issue :06, e-ISSN: 2582-5208 in June 2022.
- Mrs.S.Gayathri Devi Published an e-paper entitled **"Sign language recognition using convolutional neural networks"** held at IJRAR indexed in e-journal ,volume 9: Issue 02 , E-ISSN 2348-1269, P-ISSN 2349-5138 in June 2022.

One Week / 3 (or) 2 Days FDP:

- Mrs. Nuzhat Sultana, participated in a 10-day Online FDP on **"Deep learning and Machine Learning Applications"** Organized by Vasavi College, of Engineering Hyderabad from 18/4/22 to 28/4/22.
- Mr.Pooja Prem Kumar, participated in a 10-day Online FDP on **"Deep learning and Machine Learning Applications"** Organized by Vasavi College, of Engineering Hyderabad from 18/4/22 to 28/4/22.
- Our CSE Faculty Mr. S.Satish Kumar has participated in a 10-day Online FDP on **"Deep learning and Machine Learning Applications"** Organized by Vasavi College, of Engineering Hyderabad from 18/4/22 to 28/4/22.
- Our CSE Faculty Mr. K.Srikanth ,Mr.P.DharmaTeja, has participated in a 10-day Online FDP on **"Deep learning and Machine Learning Applications"** Organized by Vasavi College, of Engineering Hyderabad from 18/4/22 to 28/4/22.

Seminars/Workshops/FDPS

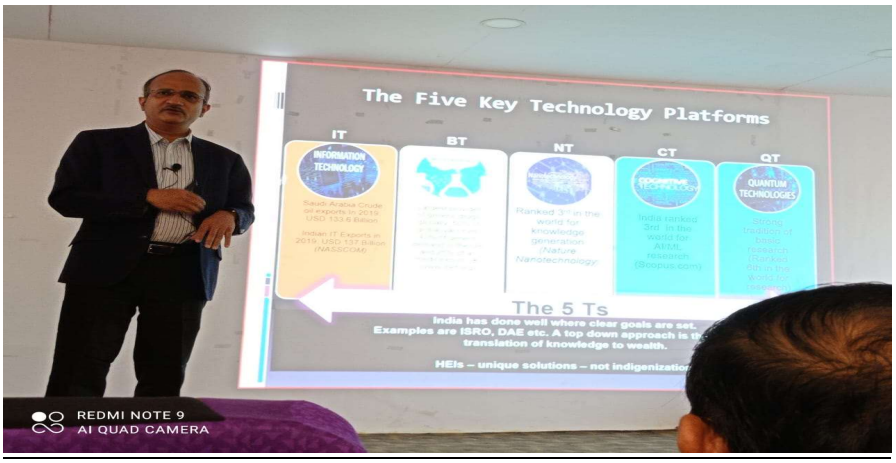
1.WORKSHOP

The CSE Department, JBIET conducted a 2 Days workshop on "Machine Learning Using Python" through ACM Chapter & CODE HUB Club from 18/02/2022 to 19/02/2022 by Resource Person E.V.Harish Sai Kumar, Team leader Wipro technologies.

Two Days workshop on "Machine Learning Using Python" from 18/02/2022 to 19/02/2022

2.SEMINAR

The CSE Department, JBIET conducted a Seminar on "The Five Key Technology PlatForms"On 13/04/2022 through ACM Chapter & CODE HUB Club by Resource Person Dr.V Ram Gopal Rao Professor & Former Director IIT Delhi.



Seminars/Workshops/FDPS

Dr.V.Ram Gopal Rao giving presentation on "5 key Technology Platforms"

3.SEMINAR

The CSE Department, JBIET conducted a Seminar on Awareness in Technology Trends by Mr. Littman on "Machine Learning".

Study abroad: Career guidance by Mr. Littman on Machine Learning

Faculty Accomplishments

"Books allow you to fully explore a topic and immerse yourself in a deeper way than most media today"

- Dr.Niraj Upadhayaya, Published**,** paper entitled **"A Framework for Collaborative Computing on Top of Mobile Cloud Computing to Exploit Idle Resources",**held at the Journal Of **Annals of Data Science**,indexed in SCOPUS online copy,https://doi.org/10.1007/ s40745-022-00390-z, accepted in March 2022.

- Mr.G.Sreenivasulu, Published an e-paper entitled **"Block chain Based Education Document Verification System"** held at conference International Research Journal of Modernization in Engineering Technology & Science ,Indexed in UGC journal ,Vol.11 Issue 6, e-ISSN: 2319-8753 in June 2022.

- Dr .G . Arun Sampaul Thomas , Published an e-paper entitled **"Optimised Task Aligned One Stage Object Detection"** in conference International Research Journal of Modernization in Engineering Technology and Science ,Indexed in UGC journal ,Vol.4 Issue 6, e-ISSN: 2582-5208 in June 2022.
- Mr.Raj Kumar Published an e-paper entitled "**Detecting Phishing Attacks using Natural Language processing "** in conference IJRECE at e-journal ,Vol.10,Issue2,ISSN(Online)2348-2281 ISSN(print):2393:9028in June 2022.
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- Mr**.** S. Sathish Kumar,Published an e-paper entitled **"Video Classification Using Deep Learning Technique"** held at IRJMETS Indexed in e-journal ,Volume:4 Issue :06, e-ISSN: 2582-5208 in June 2022.
- Mrs.S.Gayathri Devi Published an e-paper entitled **"Sign language recognition using convolutional neural networks"** held at IJRAR indexed in e-journal ,volume 9 : Issue02 , E-ISSN 2348-1269, P- ISSN 2349-5138 in June 2022.
- Mrs.Anusha Ampavathi, Published a paper entitled **"Research challenges and future directions towards medical data processing"** held at Computer Methods In Biomechanics And Biomedical Engineering Imagingandvisualization, SCOPUS, Volume10, Issue 10 ,dated 03/01/2022.

Student Triumphs

Sl.No	Name of the Author(s)	Name of the Journal	Title of the paper	Indexed in	Vol.No and Page nos.	ISBN/ ISSN	Date
1.	B.Nuthan Prasad, B. Vinay Kumar, V. Vinod	International Research Journal of Modernization in Engineering Technology and Science	Diabetic Retinopathy Detection from Eye Fundus images using Convolutional Neural network	UGC JOURNAL	Vol: 9 Issue 1	ISSN: 2349-6002	June-2022
2.	Tharun Kumar Reddy, P.Suresh, G.Jagapathi Reddy, R Narendra, A. Anusha	International Research Journal of Modernization in Engineering Technology and Science	Text-Based Prediction Of Book Review Popularity	UGC JOURNAL	Vol:04 Issue:06	e-ISSN: 2582-5208	June-2022
3.	Gogi Sai Chaitanya, Ryakala Pravallika, Priyanka, Neha Kumari	International Research Journal of Modernization in Engineering Technology and Science	Sentiment Analysis Of Movie Reviews Using Supervised Machine Learning Techniques	UGC JOURNAL	Vol:4 Issue:06	e-ISSN: 2582-5208	June-2022
4.	Thipireddy Pavankumar, Raghu Mukkera, Gopu Hruthik Kiran, Velisala Hariprasad	International Research Journal of Modernization in Engineering Technology and Science	Image Caption Generation Using Deep Learning Technique	UGC JOURNAL	Vol:4 Issue:06	e-ISSN: 2582-5208	June 2022
5.	Prashant Chokaraju Keerthana Thanmyee Reddy, Japari Vani	International Research and analytical reviews	Recommendation System For E-Commerce Using Machine Learning Algorithm.	UGC JOURNAL	Vol:9 Issue 2	e-ISSN 2348-1269	June 2022

Student Triumphs

6.	K. Malleswara Rao, B.Veerabhadra Singh,K.Ramesh S. Varun Kumar	IRJMETS	Video Classification Using Deep Learning Technique	e-Journal	Vol:04 Issue:6	e-ISSN: 2582-5208	June-2022
7.	Vishal Ravulakola, JS Nithin, K.varun Goud, B. Abhishek	IRJMETS	Student Performance Prediction Using Light gbm	e-Journal	Vol:4 Issue:6	e-ISSN: 2582-5208	June-2022
8.	Sairam krishna V.Nithin kumar S.Tejesh reddy K.Saiteja	IJCRT	The Feedback And Performance Evaluation System	e-Journal	Vol:10 Issue 6	ISSN: 2320-2882	June-2022
9.	D.Chandrakanth C.Sai Pranathi Reddy, J. Jitendra Teja	IRJMETS	Inhibiting Webshell Attacks by Random Forest Ensembles with XGBoost	e-Journal	Vol: 4 Issue:6	ISSN: 2582-5208	June-2022
10.	M.Manmitha, G.Prasanna, Malle Shiva Parvathi	IJRAR	Smart farming Using machine Learning	e-Journal	Vol: 9 Issue :2	E-ISSN 2348-1269, P- ISSN 2349-5138	June-2022
11.	Banavath vijaya, D.Meenakshi, Madhavi, sai teja,Anusha	IJRAR	Applying ML Algorithms to identify & classify brain scans having a risk of Alzheimers disesase	e-Journal	Vol: 9 Issue:2	E-ISSN 2348-1269, P- ISSN 2349-5138	June-2022
12.	Bigala Ishika, Nidamanuri, Venkatasupriya, S.Shruthi, A. Anjali	IRJME	Prediction Of Heart Attack Possibilities Using Machine Learning	UGC JOURNAL		e-ISSN: 2582-5208	June-2022

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JB Educational Society

Campus:
Bhaskar Nagar, Moinabad Mandal
R.R. District, Hyderabad
Telangana State, India-500075
08413-235127

J.B.I.E.T. has well-built infrastructural amenities, such as adequate developed area, well-equipped laboratories, libraries and information centers with digitalization and automation and online transaction facilities in the campus. All facilities such as Medical, Transport, Canteen and Games & Sports are accessible besides Seminar Halls, Conference Halls, Indoor Auditorium, Open-Air Theatre and Banking.

We're on web as www.jbiet.edu.in

Large Language Models (LLMs)

Introduction

A large language model is an advanced type of language model that is trained using deep learning techniques On massive amounts of text data. These models are capable of generating human-like text and performing various natural language processing tasks.
A language model can be of varying complexity, from simple n-gram models to more sophisticated neural network models. However, the term "large language model" usually refers to models that use deep learning techniques and have a large number of parameters, which can range from millions to billions. These models can capture complex patterns in language and produce text that is often indistinguishable from that written by humans.

Difference Between Large Language Models and Generative AI

1. **Generative AI** is like a big playground with lots of different toys for making new things. It can create poems, music, pictures, even invent new stuff!
2. **Large Language Models** are like the best word builders in that playground. They're really good at using words to make stories, translate languages, answer questions, and even write code!

*So, generative AI is the **whole playground**, and LLMs are the language experts in that **playground***

Key Components of Large Language Models (LLMs)

Large Language Models (LLMs) are complex neural network architectures that have revolutionized natural language processing (NLP) tasks. These models are composed of several key components that work together to enable them to understand, generate, and manipulate human language with remarkable fluency and accuracy, finding diverse real-world applications of LLMs. The components of Large Language Models (LLMs) are:

1.Tokenization: Tokenization marks the foundational step in the evolution of large language models(LLMs), where text sequences undergo division into smaller units or tokens. These progressive algorithms adeptly partition the text into meaningful sub word units, effectively catering to the model's capacity to accommodate a diverse vocabulary, all while ensuring operational efficiency.

2. Embedding: Embedding's are integral to LLMs' large-scale operation. These are continuous vector representations of tokens that capture semantic information. Due to the colossal size of these models, the embedding's are learned through extensive training.

3. Attention: The attention mechanism, especially self-attention as seen in transformer architectures, plays a pivotal role in LLMs' ability to handle their large size. Self-attention mechanisms analyze the relationships between all tokens in a sequence, facilitating the capture of long-range dependencies. In large models, this attention mechanism is highly parallelizable, enabling efficient processing of extensive sequences.

4. Pre-training: The vast size of LLMs is harnessed through pre-training on massive datasets. During pre-training, models learn general linguistic patterns, world knowledge, and contextual understandings. These pre-trained models become repositories of language expertise, which can then be fine-tuned for specific tasks using smaller datasets.

5. Transfer Learning: The large size of pre-trained LLMs facilitates remarkable transfer learning capabilities. Fine-tuning a model that has already absorbed a substantial amount of linguistic knowledge allows it to excel in various tasks. This transfer learning approach leverages the massive scale of pre-trained models to adapt to new tasks without needing to retrain from scratch.

6. Generation Capacity: The vastness of LLMs in terms of parameters and learned knowledge empowers them with immense text-generation capacity. They can produce coherent and contextually relevant text across various domains. The extensive exposure during training enables them to mimic human-like language use, making them versatile tools for tasks like content generation, translation, summarization, and more.

Dr.G.Sreenivasulu, M.Tech,P.hD

Associate Professor, CSE Dept.