

SPECIAL POINTS OF INTEREST:

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

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About JBIET

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.



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

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 programs 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 Science and Engineering, strive for self-reliance enabled through high end research by adapting a futuristic approach.

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.



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

"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."

Message from HOD

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 department is 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".

Technology Trends in 2022

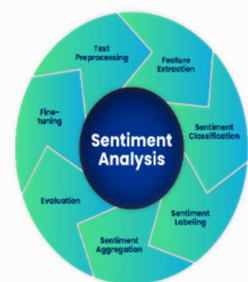
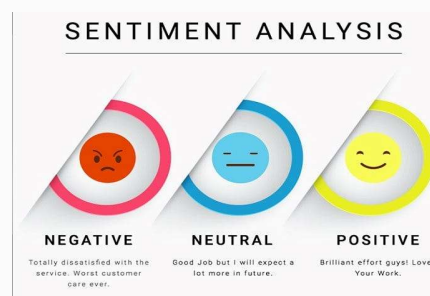
Sentiment Analysis

Introduction

Sentiment analysis is the process of analyzing digital text to determine if the emotional tone of the message is positive, negative, or neutral. Today, companies have large volumes of text data like emails, customer support chat transcripts, social media comments, and reviews. Sentiment analysis tools can scan this text to automatically determine the author's attitude towards a topic.

Benefits

Sentiment analysis, also known as opinion mining, is an important business intelligence tool that helps companies improve their products and services. Some benefits of sentiment analysis are stated as below.



1. Provide objective insights
2. Build better products and services.
3. Analyze at scale
4. Real-time results

Mr. DharmaTeja , M.Tech

Assistant Professor, CSE Dept.

Faculty Accomplishments

Research paper - related activity done

- Dr. P.Srinivasa Rao published a paper on the topic **“A Machine Learning Model For Average Fuel Consumption In Heavy Vehicles”** in IJRAR, Volume 9, Issue-3, E-ISSN-2348-1269 in August 2022.
- A.Ramesh Babu Published a paper on the topic **“Scalable Federated-Learning Big Data Architecture Towards IoMT-Assisted Covid- 19 Chest CT Medical Image Classification”** held at Computers and Electrical Engineering conference, an online copy printed in SCI 0045-7906 (IF:3.818) in August 2022.
- Dr. P. Srinivasa Rao published a paper on the topic **“Performance Improvement Of Safety Update For Logout Activity”** indexed in SCOPUS held at Neuro Quantology, Volume 20 And 10, eISSN 1303-5150 in August 2022.
- Dr. P. Srinivasa Rao Published A Paper On The Topic **“Analysis Of Mobile Malefic Website By Kayo”** Indexed In Scopus Held At Journal Of Harbin Institute Of Technology, Vol. 54 184 TO 196, ISSN : 0367-6234 in September 2022.
- Dr. Niraj Upadhayaya, Published A Paper On The Topic **“Ensemble Deep Learning Optimization And Medical Image Classification With Convolutional Neural Networks”** Indexed In Scopus Held At Neuro Quantology, Volume 20, Issue 7, Issn: 1303-5150 in August 2022.
- Our CSE faculty D. Himagiri Published a paper entitled **“Recommendation System For E-Commerce Using Machine Learning Algorithm”** held at IJRAR, Volume 9 Issue 3 in July 2022.
- Our CSE Faculties Anusha Ampavathi & Vijaya Saradhi.T Presented A Paper Entitled **“Research Challenges And Future Directions Towards Medical Data Processing”** Indexed In Scopus Held At Computer Methods In Biomechanics And Biomedical Engineering: Imaging & Visualization, Volume 10 | 10.1080/21681163.2021.2018665 On January 3rd 2022.
- Dr. Niraj Upadhayaya, G Sreenivasulu, G. Arun Sampaul Thomas, Dr. P. Srinivasa Rao Published paper on topic **“Machine Learning Strategy For Performance Enhancement Of Phase Change Material For A Smart Control Solar Application”** dated on 02-12-2022.
- Our CSE Faculties, Dr. Niraj Upadhayaya, G Sreenivasulu, Dr. P. Srinivasa Rao, A. Ramesh Babu, Dr. B. Nageswara Rao, D. Himagiri Published a Paper on topic **“Deep Learning Model For The Smart Development Of Automatic Solar Light Tracking Structure”** dated on 02-12-2022.
- Mr. S. Satish Kumar Published a paper on topic **“Classifying Snake bite marks into Venomous Snake Bites and Non-Venomous Snake bites using Deep Convolutional Neural Networks”** dated on 26-08-2022.

Faculty Accomplishments

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

Patents

- Our CSE Faculties, Dr. Niraj Upadhyaya, G. Sreenivasulu, G. Arun Sampaul Thomas, Dr. P. Srinivasa Rao filed a patent on topic **“Machine Learning Strategy For Performance Enhancement Of Phase Change Material For A Smart Control Solar Application”** dated on 02-12-2022.
- Our CSE Faculties, Dr. Niraj Upadhyaya, G. Sreenivasulu, Dr. P. Srinivasa Rao, A. Ramesh Babu, Dr. B. Nageswara Rao, D. Himagiri filed a patent on topic **“Deep Learning Model For The Smart Development Of Automatic Solar Light Tracking Structure”** dated on 02-12-2022.
- Mr. S. Satish Kumar filed a patent on topic **“Classifying Snake bite marks into Venomous Snake Bites and Non-Venomous Snake bites using Deep Convolutional Neural Networks”** on 26/0/2022.

Publications/Conferences

- Our CSE Faculty, Mr. M. Raj Kumar Participated in one week FDP on topic **“Python Programming”** by JB Institute of Engineering & Technology from 08-08-2022 to 13-08-2022.
- Our CSE Faculty, Mr. M. Raj Kumar Participated in 10-Days National FDP on **“Unleashing Emerging Research Trends and Advancements in Computer Science”**, held at VIT-AP University, from 4-07-2022 to 14-07-2022.
- Our CSE Faculty, Mr. N. Thirumala Rao Participated in one week FDP on topic **“Python Programming”** by JB Institute of Engineering & Technology from 08-08-2022 to 13-08-2022.
- Our CSE Faculties, Mr. Pooja Prem Kumar, Mr. N. Thirumala Rao Participated in One Week FDP on **“Amazon Web Services”** organized by Kumara Swamy College from 22-08-2022 to 27-08-2022.
- Our CSE Faculty, Mr. M. Naveen Babu Participated in One – Week FDP on **“Amazon Web Services”** organized by Kumara Swamy College from 22-08-2022 to 27-08-2022.
- Our CSE Faculty, Mrs. S. Gayathri Devi Participated in One – Week FDP on **“Amazon Web Services”** organized by Kumara Swamy College from 22-08-2022 to 27-08-2022.
- Our CSE Faculty, Mr. B. Nageswara Rao Participated in **“Data Science and It's Applications”** by JBREC from 16-08-2022 to 22-08-2022.

Faculty Accomplishments

One Week / 3 (or) 2 Days FDP:

- Dr.Niraj Upadhayaya, has Participated in the FDP on "**Emerging Trends in AI and Block chain**" Organized by Ramaiah University of Applied Sciences, Bangalore from 08-10-22 to 13-09-22.
- **Our CSE Faculty,Mrs.S.Gayathri Devi Participated in One – Week FDP on “Amazon Web Services” organized by Aditya Engineering College from 22-08-2022 to 27-08-2022.**
- Our CSE Faculty,Mr.D.Himagiri Participated in One – Week FDP on “**Amazon Web Services**” organized by Aditya Engineering College from 22-08-2022 to 27-08-2022.
- Our CSE Faculty,Mrs.Phatan Shameena, Participated in One – Week FDP on “**Recent Tools &Technologies for Data Science and Artificial Intelligence**”, MITS, Madanapalli, from 19.09.2022 to 26.09.2022.
- Our CSE Faculty,Mr.V Sudhakar, Participated in One – Week FDP on “**Recent Tools & Technologies for Data Science and Artificial Intelligence**”, MITS, Madanapalli, from 19.09.2022 to 26.09.2022.
- Our CSE Faculty,Mr.Soheb Irfan Participated in Two Week Intensive Teaching Workshop on “**Machine learning with Python**” by JB Institute of Engineering & Technology from 29-08-2022 to 09-09-2022.
- Our CSE Faculty,Mr.Gopala Krishna Participated in Two Week Intensive Teaching Workshop on “**Machine learning with Python**” by JB Institute of Engineering & Technology from 29-08-2022 to 09-09-2022.
- Our CSE Faculty,Mr.B.Upendra Participated in Two Week Intensive Teaching Workshop on “**Machine learning with Python**” by JB Institute of Engineering & Technology from 29-08-2022 to 09-09-2022.
- Our CSE Faculty,Mrs.Ganna Swapna Participated in Two Week Intensive Teaching Workshop on “**Machine learning with Python**” by JB Institute of Engineering & Technology from 29-08-2022 to 09-09-2022.
- Our CSE Faculty,Mrs.Ganna Swapna Participated in one week FDP on topic” **Python Programming**”by JB Institute of Engineering & Technology from 08-08-2022 to 13-08-2022.
- Our CSE Faculty,Mrs.S.Pavani Participated in one week FDP on topic” **Python Programming**” by JB Institute of Engineering & Technology from 08-08-2022 to 13-08-2022.
- Our CSE Faculty,Mrs.S.Pavani Participated in 10-Days National FDP on “**Unleashing Emerging Research Trends and Advancements in Computer Science**”, held at VIT-AP University, from 04-07-2022 to 14-07-2022.

Seminars/Workshops/FDPS

1.WORKSHOP

The Department of CSE organized a Two Days workshop on topic “Artificial Intelligence From 15/09/2022 to 16/09/2022.



2. WORKSHOP

The Department of CSE ,JBIET conducted a One Day Workshop on topic “INTERNET OF THINGS” via ACM Chapter & CODE HUB Club on 04/07/2022 by Resource Person Dr. Sachin Choudary SPCRC), IIT Hyderabad.



Seminars/Workshops/FDPS

3.FDP

National Level One-Week Faculty Development Program On “Python Programming” held from 8th August to 13th August 2022.



NPTEL Discipline Star Certificate:

Dr. Niraj Upadhayaya from Our CSE Department has been awarded a Certificate of Appreciation and recognized as a “**NPTEL Discipline Star**” during July-December 2022 organized by IIT Madras.



DEPARTMENT OF CSE

Student Triumphs

1.Workshop

Our CSE Department Faculty & Students has actively taken part in organizing and making the Two days workshop Event a grand success on topic “Artificial Intelligence” held at our college JBIET from 15/09/2022 to 16/09/2022. Along with Organizing Event, the Faculty & Students also participated in the event.



2.Workshop

Our CSE Department Faculty & Students has actively taken part in organizing and making the One day workshop Event a grand success on topic “Internet Of Things” held at our college JBIET on 4/07/2022 through ACM Chapter & CODE HUB Club on 04/07/2022 by Resource Person Dr. Sachin Choudhry (SPCRC), IIT Hyderabad. Along with Organizing Event, the Faculty & Students also participated in the event.





(Accredited by NAAC, Approved by AICTE
& Permanently Affiliated to JNTUH)

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.



Rise of Automotive Hacking

Introduction

The rise of automotive hacking is in full force, with many advanced vehicles discovering wireless and other cyber vulnerabilities. This area is becoming a new frontier for car hackers to exploit and learn from. Automotive hacking has been difficult over the past decades because the cars were designed to be protected from the outside by security measures such as steering wheel locks, door locks, immobilizers, and anti-tampering software. These features were implemented to protect the car from thieves and prevent car owners from gaining unauthorized access to the car's computer systems. Only a few individuals were able to study and learn about these safeguards, as it was hard to have an actual vehicle to experiment with.



Ways Hackers Can Gain Access to Your Vehicle

Forced Acceleration

By remotely accessing the car's computer system, a hacker can control the throttle, breaking, and other driving functions. This forces the car to accelerate rapidly or turn off completely.

Extended Key Fob Range

By accessing the vehicle's key fob, a hacker can make it, so the car opens on its own or even closes on its own. Also, if the car is left running with the key fob outside of it, a hacker can force the ignition to shut off.

Smartphone Access

If your car is connected to the internet, hackers may be able to access whatever gadgets you've synced with it. Your passwords, driving records, bank data, and credit card details are just some information that could be compromised in a cyber attack. Connected automobile apps are another potential entry point for hackers looking to steal sensitive information. Some situations have occurred when rental car agencies have gained unauthorised access to clients' private information. This kind of leak can quickly escalate into a serious vulnerability.

Hacking Your USB Port

There is a known risk of cyber-attacks on vehicles, particularly through USB data ports and other vehicle connections. It has been proved in numerous investigations that the infotainment system and other inputs found in today's vehicles, particularly those with USB connections, can be exploited by hackers. Hackers typically gain access to a car's system through a USB device by employing social engineering techniques.

Because vulnerabilities arise due to discoveries and updates, it is best to keep a close watch on cyber security updates from your car manufacturer.

Limit access

Limit the number of people who have access to your vehicle's information by setting up password-protected accounts. This will help prevent unauthorized login attempts and limit access only to those with authorized accounts.

Block Unauthorized Communications

Sending malicious code and data packets to a vehicle is often the first step in a cyber-attack. A built-in firewall that prevents hackers from accessing the car's internal network is recommended. An efficient firewall will restrict communication with the car to authorized parties, both V2V (vehicle-to-vehicle) and V2X (vehicle-to-everything).

Be wary of third-party software

Having third-party software and applications installed on your vehicle can open it up to potential harm. When customizing your vehicle, only use software authorized by the automaker.

Conclusion

The automotive hacking community is growing exponentially, as many vehicles are equipped with wireless and other cyber vulnerabilities. This is a new frontier for car hackers to exploit and learn from the future of most modern vehicles is destined to be fully controlled by computer software and the internet. This will allow for deploying advanced Driving Assistance systems, Connected Media platforms and other applications, with connectivity and in-car-infotainment systems.

Having the right kind of cyber security is extremely important in the automotive industry. While technological advances may help to improve driver safety, there is also a possibility of it making cars vulnerable. As car systems become more interconnected, it becomes easier for hackers to access them. As a result, car manufacturers should focus on developing secure software and implementing a defense-in-depth strategy encompassing robust cyber security technologies that excel at securing all these elements of the driving experience.

Dr.KVSSR SARMA M.Tech,P.hD

Professor, CSE Dept.

Power of Standard Statistical Tools in Research and Data Analysis

Introduction

Research and data analysis are vital across various domains, including scientific research and business decision-making. Standard statistical tools such as SPSS help are fundamental to these processes, enabling researchers to collect, organise, analyse, and interpret data. They provide valuable insights and support evidence-based conclusions. Statistics is a scientific discipline that involves gathering, organising, analysing, and extrapolating data from samples to the entire population.

Exploring the Role of Quantitative Variables in Statistics

Quantitative variables play an essential role in statistics. They provide numerical information and allow mathematical operations and analysis. Here are some critical aspects of their role in statistics:

1. **Describing Data:** Quantitative variables provide numerical information that allows for calculating summary statistics. Measures such as mean, median, mode, range, and standard deviation help describe the central tendency and variability of data.
2. **Discovery of relationships:** Quantitative variables enable the discovery of relationships between variables.
3. **Making Predictions:** Quantitative variables are used in predictive modelling. Linear regression and time series analysis use historical data to forecast and predict future outcomes.
4. **Hypothesis Testing:** Quantitative variables are used to test hypotheses and determine the significance of relationships.
5. **Decision Making:** Quantitative variables provide the basis for decision-making and estimation. Statistical analyses help assess the effectiveness of interventions or treatments, evaluate the effect of variables on outcomes, and support evidence-based decision-making.

Common statistical tools in research and data analysis

Descriptive Statistics: Descriptive statistics provide a summary of the main characteristics of a dataset. These include mean, median, mode, standard deviation, variance, range, and percentile. These statistics help researchers understand their data's central tendency, variability, and distribution.

- **Inferential Statistics:** Inferential statistics are used to make inferences or generalizations about a population based on a sample of data.

- They include hypothesis testing and estimation techniques such as confidence intervals. Inferential statistics help researchers draw conclusions and make predictions from their data.
- **T-Test:** T-Test is used to compare means between two groups or conditions. They determine whether there is a significant difference between the means of the two groups or if the difference is due to chance. Different types of t-tests exist, including independent samples t-tests, paired samples t-tests, and one-sample t-tests.
- **Analysis of Variance (ANOVA):** ANOVA compares means among three or more groups or conditions. Determines whether there are significant differences between the means of multiple groups. ANOVA can be one-way (one independent variable) or factorial (multiple independent variables).
- **Regression Analysis:** Regression analysis is a statistical method to investigate the connection between a dependent variable and one or multiple independent variables. It helps researchers understand how changes in the independent variable affect the dependent variable. Simple linear regression, multiple regression, and logistic regression are common types of regression analysis.
- **Chi-Square Test:** Chi-Square Test assesses the relationship between two categorical variables. It determines whether the observed frequencies of the variable differ significantly from the expected frequencies. Chi-square tests are often used in contingency table analysis and goodness-of-fit tests.
- **Correlation Analysis:** Correlation analysis examines the relationship between two continuous variables. It measures the strength and direction of association using correlation coefficients such as Pearson's. Correlation analysis helps researchers understand the degree of linear relationship between variables.
- **Factor Analysis:** Factor analysis is used to detect patterns of correlations among a large set of variables. It identifies the underlying latent factors explaining the observed variables' relationship. Factor analysis is commonly used in psychometrics and the social sciences.
- **Time series analysis:** Time series analysis is applied to data collected over time to identify patterns, trends, and seasonality. It helps researchers predict future values and understand the data dynamics. Techniques used in time series analysis include the autoregressive integrated moving average (ARIMA) model and exponential smoothing.
- **Cluster Analysis:** Cluster analysis is used to classify objects or cases based on their similarity or dissimilarity. It helps to identify homogeneous subgroups within the dataset. Techniques such as K-means and hierarchical clustering are commonly used in cluster analysis.

Mrs.S.Gayathri Devi, M.Tech

Assistant Professor ,CSE Dept.

