



Bhoj Reddy Engineering College for Women

(Sponsored by Sangam Laxmibai Vidyapeet, Approved by AICTE and Affiliated to JNTUH)

Accredited by NAAC with A Grade, Recognized under section 2(f) of the UGC act, 1956

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Department of Computer Science and Engineering

Report of Three-Day Workshop on “AI & Data Science Foundations, Machine Learning Fundamentals, Generative AI, Advanced AI & AI Engineering” for II B Tech CSE (A & B) and CSM Students from 27 July 2026 to 29 July 2026.

As a part of the Memorandum of Understanding (MoU) with M/s Magic Bus Foundation & IBM SkillsBuild, the Department of Computer Science and Engineering (CSE) organized a three-day workshop on “AI & Data Science Foundations, Machine Learning Fundamentals, Generative AI, Advanced AI & AI Engineering” for II B Tech CSE (A & B) and CSM students from 27 July 2026 to 29 July 2026 under the aegis of the Internal Quality Assurance Cell (IQAC).

Banner:

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Organizing Three-Day Workshop
“AI&Data Science Foundations, Machine Learning Fundamentals, Generative AI &AI Engineering”
In Collaboration with IBM SkillsBuild and Magic Bus India Foundation
Under Internal Quality Assurance Cell

Schedule

II B Tech IT	14-16 July 2026
II B Tech EEE, ECE	20-22 July 2026
II B Tech CSE, CSM	27-29 July 2026

Venue
Seminar Hall, WB-402

Time: 09.30-16.30 Hrs

No Registration Fee

Instagram (brecw_hyderabad)
https://www.instagram.com/brecw_hyderabad/
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Figure 1: Banner

The workshop was conducted from **09:30 AM to 04:30 PM**, with both theory and hands-on sessions held at **West Block Seminar Hall-2 (WB-402)**. The primary objective of the workshop was to introduce students to the fundamental concepts of Artificial Intelligence (AI), Data Science, Machine Learning, Generative AI, and AI Engineering while providing practical exposure to current AI tools and platforms. The workshop was designed to equip students with industry-relevant technical knowledge and practical skills required to meet the demands of the rapidly evolving AI-driven technology landscape.



Figure 2: Dignitaries at the Inaugural Session

The inaugural session was graced by **Principal, Dr G Shyama Chandra Prasad**, **Vice Principal, Mr G Dayakar Reddy**, and **Head of the Department of Computer Science and Engineering, Dr M Vinod**, who motivated the students to actively participate in the workshop and emphasized the growing importance of Artificial Intelligence and Data Science in engineering education and future career opportunities.

The workshop was conducted by **Mr V Shashank Reddy**, AI & Data Science Trainer, **Mr Rauth Mahender**, AI & Data Science Trainer, and **Mr Kedar Mahamuri**, Profiling and Mobilization Officer, **M/s Magic Bus Foundation & IBM SkillsBuild**. Through expert lectures, practical demonstrations, coding sessions, and interactive activities, the resource persons provided participants with a comprehensive understanding of modern AI technologies and their real-world applications.



Figure 3: Felicitating the Resource Person

The workshop witnessed enthusiastic participation from **II B Tech CSE (A &B) and CSM students**, who actively engaged in theoretical sessions, coding exercises, team-building activities, practical implementations, and project discussions throughout the three-day programme.



Figure 4: Dr M Vinod addressing the students

As part of this initiative, students will receive several value-added benefits, including **free access to the IBM SkillsBuild Portal, IBM Digital Certificate** upon successful completion of the classroom training and self-paced online learning modules, **IBM mentorship**, and **enrolment support for IBM Placement Services**. These opportunities will enable students to continue learning beyond the workshop and significantly enhance their employability in the fields of Artificial Intelligence, Data Science, Machine Learning, and emerging technologies.



Figure 5: Resource Person at the Session

Workshop Modules

The workshop was structured into four comprehensive modules covering the fundamentals of Artificial Intelligence as well as advanced concepts in Machine Learning, Generative AI, and AI Engineering. Each day combined theoretical lectures, practical coding sessions, hands-on exercises, and collaborative team activities, enabling participants to gain both conceptual knowledge and practical experience.



Figure 6: Resource Persons and Students at the Session

1. AI Foundations, Python Programming, and Data Analysis

The first module introduced participants to the fundamentals of Artificial Intelligence and Data Science. Students learned about the evolution, significance, and applications of AI across various domains.

The technical sessions covered Python programming fundamentals, feature engineering, and popular Python libraries such as **NumPy**, **Pandas**, and **Matplotlib**. Participants gained practical experience in data collection, preprocessing, cleaning, visualization, and exploratory data analysis using Python.

The trainers also conducted the **"One Pen Challenge"**, an engaging team activity that encouraged creativity, collaboration, communication, leadership, and innovative problem-solving under limited resources.

By the end of the first module, participants had developed a strong foundation in Artificial Intelligence concepts and acquired practical skills in Python-based data analysis.



Figure 7: Students at the Session

2. Machine Learning Fundamentals

The second module focused on understanding the complete Machine Learning workflow and developing predictive models.



Figure 8: Resource Person at the Session

The topics covered included:

- Data preprocessing
- Feature selection
- Supervised Learning
- Unsupervised Learning
- Regression
- Classification
- Decision Trees
- Random Forests
- K-Nearest Neighbors (KNN)
- Clustering Algorithms
- Principal Component Analysis (PCA)
- Model Evaluation Metrics
- Overfitting and Underfitting

Students implemented several Machine Learning models using the **Scikit-Learn** library and learned techniques for training, testing, evaluating, and comparing models.



Figure 9: Resource Person and Students at the Session

The **"Paper Tower Challenge"** was conducted to strengthen teamwork, engineering design thinking, optimization strategies, and collaborative decision-making skills.

This module enabled participants to understand the complete Machine Learning development lifecycle while improving their analytical and critical thinking abilities.



Figure 10: Resource Person at the Session

3. Generative AI and Enterprise AI

The third module introduced participants to the rapidly growing field of Generative AI and its enterprise applications.

The sessions covered:

- Large Language Models (LLMs)
- Transformer Architecture
- Tokens
- Embeddings
- Attention Mechanism
- Retrieval-Augmented Generation (RAG)
- Prompt Engineering

- Zero-shot Learning
- Few-shot Learning
- Responsible AI
- AI Governance

Students participated in practical exercises involving prompt engineering, AI assistant development, and knowledge-base integration, enabling them to understand the practical implementation of Generative AI technologies.

The **"Paper Chain Challenge"** promoted teamwork, innovation, resource optimization, and collaborative problem-solving.

By the end of the module, students gained confidence in designing effective prompts and understanding the industrial applications of Generative AI.

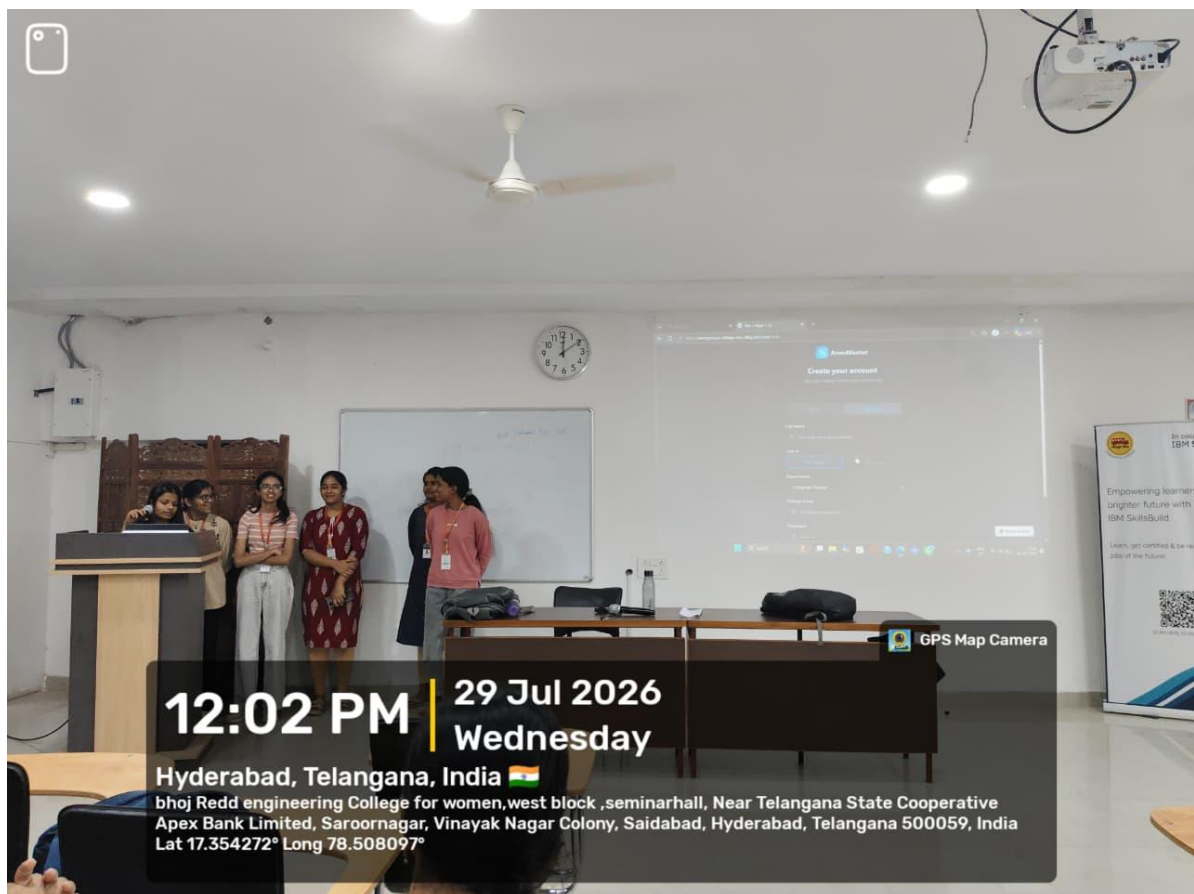


Figure 11: Students Presentation

4. Advanced AI and AI Engineering

The final module focused on advanced Artificial Intelligence technologies and AI Engineering practices.

The sessions included:

- Deep Learning
- Artificial Neural Networks

- Computer Vision
- Natural Language Processing (NLP)
- Speech Recognition
- AI Agents
- Multi-Agent Systems
- MLOps Fundamentals
- AI Model Deployment
- AI Security
- Explainable AI (XAI)

Students learned about the complete AI development lifecycle, including model development, deployment, monitoring, maintenance, and optimization.

The workshop concluded with the "**AI Innovation Challenge**," where participants worked in teams to conceptualize AI-based solutions for real-world engineering and societal challenges. Each team presented innovative ideas and implementation strategies, demonstrating creativity, technical understanding, and collaborative problem-solving skills.

Benefits to Students

Through the collaboration with **M/s Magic Bus Foundation & IBM SkillsBuild**, the participants received several valuable opportunities and benefits, including:

- Free access to the IBM SkillsBuild Learning Portal.
- Self-paced IBM online learning modules.
- IBM Digital Certificate upon successful completion of the classroom training and online learning.
- Mentorship from IBM experts.
- Enrolment support for IBM Placement Services.
- Exposure to industry-standard AI tools and technologies.
- Opportunities for continuous learning and career development.

These initiatives will help students strengthen their technical competencies and improve their employability in the fields of Artificial Intelligence, Machine Learning, Data Science, and Software Engineering.

Student Feedback

The feedback received from the participants was highly positive and encouraging. Students appreciated the systematic organization of the workshop, the expertise of the resource persons, and the excellent balance between theoretical concepts and practical implementation.

The participants found the sessions highly informative, interactive, and engaging. They appreciated the live coding demonstrations, hands-on laboratory exercises, collaborative team activities, and project-based learning approach adopted throughout the workshop.

Students expressed that the workshop significantly improved their understanding of Artificial Intelligence, Data Science, Machine Learning, Generative AI, and AI Engineering. They also appreciated the opportunity to work with modern AI tools and gain exposure to industry practices.

The additional benefits offered through IBM SkillsBuild, including access to the IBM Learning Portal, digital certification, mentorship, and placement support, were highly appreciated by all participants.

Based on the feedback collected at the end of the programme, **more than 95% of the participants rated the workshop as "Excellent" or "Very Good."** Many students recommended conducting more such industry-oriented workshops on emerging technologies to further strengthen their technical knowledge and enhance their career readiness.

Outcome of the Workshop

The three-day workshop successfully achieved its objectives by providing II B.Tech CSE (A & B) and CSM students with comprehensive knowledge and practical exposure to Artificial Intelligence, Data Science, Machine Learning, Generative AI, and AI Engineering.

The combination of expert lectures, practical coding sessions, interactive demonstrations, team-building activities, and project-based learning enabled students to develop programming skills, analytical thinking, problem-solving abilities, teamwork, and innovation.

The collaboration with **M/s Magic Bus Foundation & IBM SkillsBuild** provided participants with valuable opportunities for certification, mentorship, continuous learning, and placement support, making the workshop highly beneficial for both academic and professional development.

Overall, the workshop was a grand success and received an overwhelming response from the participants. It enhanced students' awareness of emerging AI technologies, inspired innovation, promoted collaborative learning, and prepared them to meet the challenges of the rapidly evolving digital world.

The Department of Computer Science and Engineering expresses its sincere gratitude to the **Management, Principal Dr. G. Shyama Chandra Prasad, Vice Principal Mr. G. Dayakar Reddy, Head of the Department Dr. M. Vinod, IQAC, M/s Magic Bus Foundation, IBM SkillsBuild,** and the distinguished resource persons **Mr. V. Shashank Reddy, Mr. Rauth Mahender, and Mr. Kedar Mahamuri** for their valuable support and contribution in making the workshop a memorable and highly successful learning experience.

Dr P Deepthi
Seminars &
Workshops In-charge

Dr M Vinod
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