SANTHIRAM ENGINEERING COLLEGE

(AUTONOMOUS)

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<u>Department of Computer Science & Engineering</u>

Report

Program Title	: JNTUA Sponsored Five Day Faculty Development Programme on **"AI Foundations and Intelligent Systems: Exploring Artificial Intelligence & Machine Learning"**
Organized By	: Department of CSE, SREC
Program Coordinator	: Dr.S.Md.Farooq, Professor& HoD of CSE Dept.
Date	: 6-1-2026 to 10-1-2026
No. of Faulty Registered	: 56

The Department of CSE, Santhiram Engineering College and Directorate of Faculty Development Centre, Jawaharlal Nehru Technological University Anantapur (JNTUA) Ananthapuramu organized a JNTUA Sponsored Five Day Faculty Development Programme on "AI Foundations and Intelligent Systems: Exploring Artificial Intelligence & Machine Learning" Sponsored by Jawaharlal Nehru Technological University Anantapur (JNTUA) Ananthapuramu , Andhra Pradesh, India from 6th January 2026 to 10th January 2026. The Guest of Honour Dr.G.Prasanthi, Director, Faculty Development Center ,Jawaharlal Nehru Technological University Anantapur (JNTUA). Dr.M.V.Subramanyam, Principal of SREC, Dr.S.Md.Farooq ,Program Coordinator & HoD of CSE Dept, Faculty, Staff of CSE Dept. and 56 registered Faculty are participated in this program.

Day 1: 06-01-2026

Session 1: Inaugural Session
Time: 10.00 AM – 11.30 AM
Dr.G.Prasanthi, Director, Faculty Development Center ,Jawaharlal Nehru Technological University Anantapur (JNTUA) addressed the participants and highlighted the importance of Artificial Intelligence in modern computing and interdisciplinary research. The objectives of the FDP were clearly outlined, emphasizing faculty capacity building in AI and Machine Learning fundamentals. The session set the academic tone for the programme and motivated participants to actively engage in the upcoming technical sessions.

Session 2: Introduction to Artificial Intelligence
Time: 11.45 AM – 01.15 PM
Resource Person:
Dr. Ratna Kumari Challa,
Faculty, Department of Computer Science and Engineering
IIIT –A.P.,RGUKT,RK Valley,Kadapa
Topics Covered:
- Introduction to AI: Definitions
- History
- Foundations and Applications

Session Report:
This session introduced the fundamental concepts of Artificial Intelligence, providing a historical perspective on the evolution of AI. The concept of intelligent agents, their structure, and interaction with different types of environments were discussed in detail. Emphasis was placed on rational decision-making and agent-based problem solving. The session established a strong conceptual foundation for participants to understand advanced AI techniques.

Session 3: Introduction to Artificial Intelligence
Time: 2.00 PM – 3.30 PM
Resource Person:
Dr. Nagaraju K, Assistant Professor (Grade-I), Level-12
Department of Computer Science and Engineering, IITDM Kurnool
Topics Covered:
- Intelligent agents and environments
- Structure of agents
- Concept of rationality
- Nature of environments
- Structure of Agents

Session Report:
Dr. Nagaraju .K delivered a comprehensive introduction to Artificial Intelligence, tracing its historical evolution and defining its core principles. The concept of intelligent agents and their interaction with environments was explained with real-world examples. The session helped participants build a strong conceptual foundation for understanding AI systems and their practical relevance.

Session 4: Problem Solving Agents and Applications
Time: 3.45 PM – 5.15 PM
Resource Person:
Dr. Nagaraju K, Assistant Professor (Grade-I), Level-12
Department of Computer Science and Engineering, IITDM Kurnool
Topics Covered:
- Problem-solving agents
- Problem formulation

Session Report:
This session focused on problem-solving techniques in AI. The resource person elaborated on problem formulation strategies and the role of agents in finding optimal solutions. Applications of AI in diverse domains such as healthcare, robotics, and automation were discussed, enabling participants to relate theoretical concepts to real-world scenarios.

Day 2: 07-01-2026
Session 1: Uninformed Search Strategies
Time: 10.00 AM – 11.30 AM
Resource Person:
Mr. D. Sai Sateesh, CEO, Indian Servers and AIMERS, Vijayawada
Topics Covered:
- Breadth First Search (BFS)
- Depth First Search (DFS)

Session Report:
Mr. D. Sai Sateesh explained uninformed search strategies with clarity, focusing on BFS and DFS algorithms. The session included step-by-step explanations of search tree traversal and performance analysis. Participants gained a clear understanding of algorithm behavior in different problem spaces.

Session 2: Heuristic and Adversarial Search
Time: 11.45 AM – 1.15 PM
Resource Person:
Mr. D. Sai Sateesh, CEO, Indian Servers and AIMERS
Topics Covered:
- Heuristic search techniques
- Hill climbing, A*, AO* algorithms
- Game playing and adversarial search

Session Report:
In this session, informed search techniques were introduced to improve search efficiency. The role of heuristic functions in guiding the search process was discussed. Algorithms such as Hill Climbing, A*, and AO* were explained with examples, demonstrating their effectiveness in solving complex problems.

Session 3 : Game Playing
Time: 2.00 PM – 3.30 PM
Resource Person:
Dr. K. Sathya Babu, Associate Professor
Department of Computer Science and Engineering, IIITDM Kurnool
Topics Covered:
- Game playing and adversarial search
- Mini-max algorithm
- Alpha-beta pruning
- Evaluation Functions

Session Report:
This session addressed AI techniques used in game playing and competitive environments. The mini-max algorithm and alpha-beta pruning were explained in detail, emphasizing optimization of decision-making in adversarial scenarios. The session helped participants understand strategic reasoning in intelligent systems.

Session 4: Hands-on Session
Time: 3.45 PM – 5.15 PM
Resource Person:
Dr. K. Sathya Babu, Associate Professor
Department of Computer Science and Engineering, IIITDM Kurnool
Topics Covered:

- Hands-on: BFS,DFS, Implementation of BFS and DFS
- Game playing using mini-max and alpha-beta pruning in python

Session Report:
Dr. Sathya Babu conducted an interactive hands-on session where participants implemented search algorithms and game-playing techniques using Python. The practical exposure strengthened conceptual understanding and encouraged participants to integrate AI algorithms into teaching and research.

Day 3: 08-01-2026
Session 1 : Knowledge Representation and Reasoning
Time: 10.00 AM – 11.30 PM
Resource Person:
Dr. C. Nagaraju, Professor
Department of Computer Science, Yogi Vemana University
Topics Covered:
- Knowledge representation issues
- Predicate logic
- logic programming

Session Report:
Dr. C. Nagaraju provided deep insights into knowledge representation techniques. Logical reasoning, semantic structures, and inheritance mechanisms were discussed in detail. The session emphasized the importance of structured knowledge in building intelligent systems.

Session 2:
Time: 11.45 AM – 1.15 PM
Resource Person:
Dr. C. Nagaraju, Professor
Department of Computer Science, Yogi Vemana University
Topics Covered:
- Semantic networks
- Frames and inheritance
- Constraint propagation

Session Report:
The session on Semantic Networks introduced participants to graph-based knowledge representation techniques used in Artificial Intelligence. Concepts are represented as nodes, while relationships between them are represented as labeled links. The session explained how semantic networks support inheritance, association, and efficient retrieval of knowledge. Practical examples were discussed to demonstrate how real-world entities and their relationships can be modeled effectively.

Session 3 : Probabilistic Reasoning
Time: 2.00 PM – 3.30 PM
Resource Person:
Mr. M. Deva Nagendra, Founder & CEO
ReshApp Software Solutions Pvt. Ltd.
Topics Covered:
- Bayes' probabilistic inference
- Dempster-Shafer theory

Session Report:
The session focused on uncertainty handling in AI. The resource person explained probabilistic reasoning models and conducted practical demonstrations. Participants developed simple knowledge bases and classifiers, gaining applied skills in probabilistic AI systems.

Session 4: Hands-on
Time: 3.45 PM – 5.15 PM
Resource Person:
Mr. M. Deva Nagendra, Founder & CEO
ReshApp Software Solutions Pvt. Ltd.
Topics Covered:
- Hands-on: Building Semantic net or Rule-based KB
- Bayes classifier using Python or Prolog

Session Report:
This session provided participants with practical exposure to core Artificial Intelligence techniques. Faculty members actively designed semantic nets and rule-based knowledge bases to represent domain knowledge and perform logical inference, gaining insight into structured knowledge representation. In addition, participants implemented a Bayes classifier to understand probabilistic reasoning and classification under uncertainty. This session effectively bridged theory and practice, enhanced programming and problem-solving skills, and enabled participants to apply knowledge representation and machine learning concepts in teaching, research, and real-world AI applications.

Day 4: 09-01-2026
Session 1: Logic and Learning Techniques
Time: 10.00 AM – 11.30 AM
Resource Person:
Mr. Baradwaj Arvapally, Founder, ABTech Ville
Topics Covered:
- First Order Logic
- Inference in First Order Logic
- Unification and resolution
- Forward and backward chaining

Session Report:

The session covered First Order Logic and inference techniques, focusing on unification, resolution, and forward and backward chaining. Participants learned how knowledge is formally represented using predicates and how intelligent systems derive conclusions through logical reasoning. The session strengthened understanding of systematic inference methods used in AI problem solving.

Session 2: Logic and Learning Techniques
Time: 11.45 AM – 1.15 PM
Resource Person:
Mr. Baradwaj Arvapally, Founder, ABTech Ville
Topics Covered:
- Inductive learning
- Decision trees
- Explanation-based learning

Session Report:
Mr. Baradwaj Arvapally covered logical inference mechanisms and learning paradigms. Decision tree construction and reasoning techniques were discussed with illustrative examples. The session strengthened participants' understanding of symbolic and learning-based AI.

Session 3 : Statistical and Reinforcement Learning
Time: 2.00 PM – 3.30 PM
Resource Person:
Mr. Dinesh Kumar Balki, AI Generalist, Brain O Vision, Hyderabad
Topics Covered:
- Statistical learning methods
- Reinforcement learning concepts

Session Report:

The session on Statistical Learning Methods and Reinforcement Learning concepts introduced participants to data-driven and reward-based learning approaches in Artificial Intelligence. Statistical learning techniques were discussed to explain how models learn patterns from data for prediction and classification, while reinforcement learning concepts highlighted agent environment interaction, rewards, and policy optimization. The session provided a clear understanding of how intelligent systems learn from experience and adapt to dynamic environments, enhancing participants' ability to apply these techniques in teaching, research, and practical AI applications.

Session 4: Statistical and Reinforcement Learning
Time: 3.45 PM – 5.15 PM
Resource Person:
Mr. Dinesh Kumar Balki, AI Generalist, Brain O Vision, Hyderabad
Topics Covered:
- Hands-on Decision tree and Reinforcement Learning using Scikit-learn / OpenAI Gym

Session Report:
This session introduced modern learning paradigms with practical demonstrations. Reinforcement learning concepts were explained through real-time examples. Participants gained exposure to contemporary AI tools and frameworks.

Day 5: 10-01-2026
Session 1: Expert Systems
Time: 10.00 AM – 11.30 AM
Resource Person:
Dr. K. V. Subbareddy, General Manager
IITTNIF, IIT Tirupati
Topics Covered:
- Architecture of expert systems
- Roles of expert systems

Session Report:

Dr. Subbareddy delivered an in-depth session on expert systems. The architecture and real-world applications were discussed, followed by practical simulations. The session on the architecture and roles of expert systems provided participants with a clear understanding of the structural components of expert systems, including the knowledge base, inference engine, user interface,

and explanation facility. The roles of expert systems in decision support, problem diagnosis, planning, and advisory applications were discussed with practical examples.

Session 2: Expert Systems
Time: 11.45 AM – 1.15 PM
Resource Person:
Dr. K. V. Subbareddy, General Manager
IITTNIF, IIT Tirupati
Topics Covered:
- Knowledge acquisition
- Meta-knowledge and heuristics

Session Report:
The session on knowledge acquisition, meta-knowledge, and heuristics focused on how domain knowledge is systematically gathered from experts, documents, and data sources for building intelligent systems. Participants learned the role of meta-knowledge in controlling and guiding the reasoning process, along with the use of heuristics to improve problem-solving efficiency. Participants learned to design rule-based expert systems using industry-standard tools

Session 3: Expert System Shells
Time: 2.00 PM – 3.30 PM
Resource Person:
Dr. S. Viswanadha Raju, Principal & Senior Professor
Department of CSE, JNTUH University College of Engineering, Jagtial,Hyderabad
Topics Covered:
- Expert system shells: MYCIN, DART, XCON
- Hands-on using CLIPS / PyKnow/Custom Shell

Session Report:
This session provided participants with practical insights into the development of rule-based expert systems. The features and applications of classical expert system shells were discussed to illustrate real-world problem solving. Through hands-on activities, participants gained experience in defining rules, facts, and inference mechanisms, which strengthened their understanding of expert system implementation and enhanced their ability to apply these tools in academic and practical AI scenarios.

Session 4: Assessment and Valedictory
Time: 3.45 PM – 5.15 PM

The five-day FDP successfully enhanced faculty knowledge in Artificial Intelligence and Machine Learning through expert lectures and hands-on sessions. The programme achieved its objectives of strengthening conceptual understanding, practical skills, and research orientation among participants. The FDP concluded with assessment, participant feedback and Certificates were distributed to the participants and the programme concluded successfully.

Photo Gallery:

Photo: Dr.M.V.Subramanyam, Principal of SREC speech about the FDP program

Photo: Guest of Honour Dr.G.Prasanthi, Director, Faculty Development Center,JNTUA Speech about the FDP

Photo: Day1: 6-1-2026 FN
Dr. Ratna Kumari Challa ,resource person delivering her session to the faculty participants.

Photo: Day1: 6-1-2026 AN
Dr. Nagaraju K,resource person delivering his session to the faculty participants

Photo: Day2: 7-1-2026 FN
Mr.D. Sai Sateesh,resource person delivering his session to the faculty participants

Photo: Day2: 7-1-2026 AN
Dr. K. Sathya Babu ,resource person delivering his session to the faculty participants

Photo: Day3: 8-1-2026 FN
Dr. C. Nagaraju,resource person delivering his session to the faculty participants

Photo: Day3: 8-1-2026 AN
Mr.M.Deva Nagendra,,resource person delivering his session to the participants

Photo: Day4: 9-1-2026 FN
Mr.Baradwaj Arvapally,resource person delivering his session to the faculty participants

Photo: Day4: 9-1-2026 AN
Mr.Dinesh Kumar Balki ,resource person delivering his session to the participants

Photo: Day 5: 10-1-2026 FN Dr. K. V. Subbareddy,resource person delivering his session to the faculty participants	Photo: Day5: 10-1-2026 AN Dr. S. Viswanadha Raju,resource person delivering his session to the participants
Photo: Assessment	Photo:Certificate Distribution to the Participants
Photo:Certificate Distribution to the Participants	Photo: Group Photo of the FDP Participants

Program Coordinator