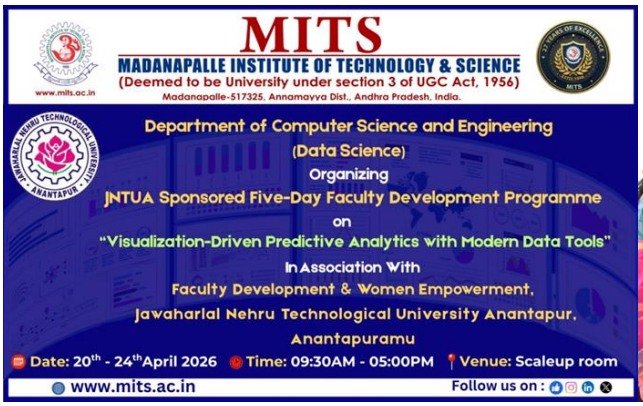
**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**
**(Deemed to be University)**
**Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi**
**NAAC Accredited with A+ Grade, NIRF India Rankings 2025 - Band: 201-300 (Engg.)**
**NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH, CST), MBA & MCA**

**A Report on JNTUA Sponsored Five-day Faculty Development Program on**
**"Visualization-Driven Predictive Analytics with Modern Data Tools"**
**Sponsored by Jawaharlal Nehru Technological University, Anantapuramu**
**Organized by Department of CSE-Data Science**
**in association with Faculty Development & Women Empowerment- JNTUA**
**from 20.04.2026 to 24.04.2026**



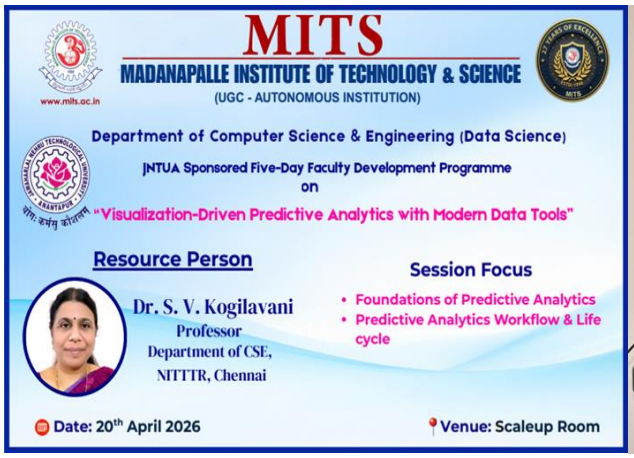
**Report Submitted by: Dr. K. Pugazharasi, Assistant Professor, Department of CSE- Data Science.**
**Faculty Coordinators: Dr. K. Nirmala Devi, Associate Professor, Department of CSE- Data Science.**
**Organizing Committee:**
**Dr. K. Pugazharasi, Assistant Professor, CSE (Data Science),**
**Dr. M. Kiran Kumar, Assistant Professor, CSE (Data Science),**
**Mr. A. Arockia Raj, Assistant Professor, CSE (Data Science),**
**Mrs. M. Nandhini, Assistant Professor, CSE (Data Science),**
**Mrs. Anuradha Prudhivi, Assistant Professor, CSE (Data Science)**
**Total Number of Participants: 37**
**Time and Venue: 9:30 AM to 5:00 PM and Scaleup Room, Lakshmi Block**
**Mode of Conduct: Offline**
**Report Received on 07.05.2026.**

The FDP commenced with an inaugural function held on 20th April 2026 at the Scale Up Room, MITS with lightening of the lamp. Dr K Nirmala Devi, Associate Professor, CSE(DS), MITS has welcomed everyone for the FDP programme. Next to the welcome address by Dr S Kusuma, Assistant Professor and HoD, Department of Computer Science and Engineering (Data Science), MITS, the presidential address was delivered by Dr. P. Ramanathan, Principal, MITS. The Chief Guest of the inaugural function, **Mr. Venkatesh Pulaganti,** Data Engineer, Gainwell Technologies, Bangalore delivered the inaugural address to the participants. He highlighted the growing importance of predictive analytics, data visualization, and intelligent decision-making in academia and industry. The inaugural address emphasized the necessity for faculty members to continuously upgrade their knowledge in emerging technologies and adopt innovative teaching methodologies aligned with industry expectations. Participants were encouraged to make effective use of the FDP to enhance their research capabilities and teaching practices.

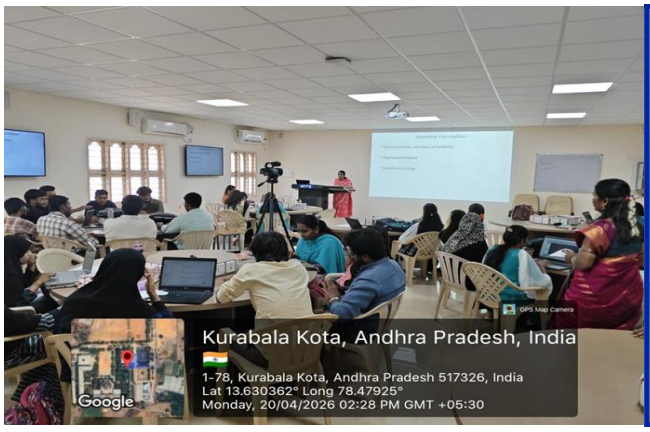
**Day-wise Session Details**
**Day 1 - 20th April 2026**
**Session 1: Role of Visualization**
**Resource Person:** *Mr. Venkatesh Pulaganti, Data Engineer, Gainwell Technologies, Bangalore.*

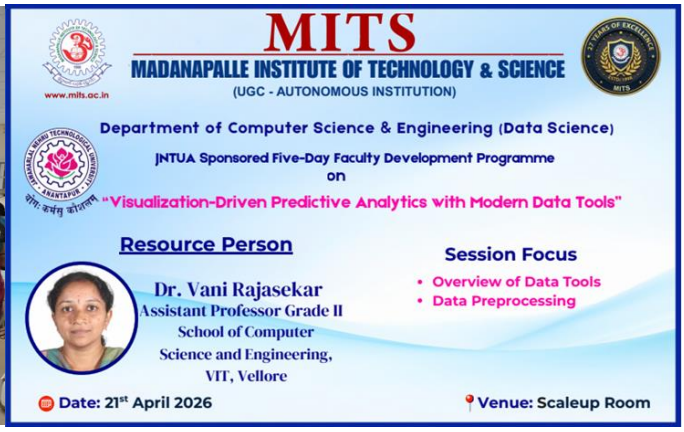
The session focused on the importance of visualization in understanding complex datasets and making effective business decisions. Various visualization techniques and dashboard strategies were demonstrated using practical examples. The resource person also explained how visualization supports predictive analytics, business intelligence, and strategic planning. Participants gained insights into selecting suitable visual representations for different types of datasets and analytical requirements. The session concluded with an interactive discussion and feedback session with participants.

**Session 2: Foundations of Predictive Analytics**
**Resource Person:** *Dr. S. V. Kogilavani, Professor, Department of CSE, NITTTR, Chennai.*
The session introduced the fundamental concepts of predictive analytics, statistical modeling, and data-driven decision-making. Participants learned about predictive models and their applications across multiple domains. The speaker highlighted the importance of data quality, feature selection, and model accuracy in predictive systems. Real-time applications from healthcare, finance, education, and business sectors were discussed to enhance practical understanding. The session concluded with a Feedback and Q&A session with participants.



**Session 3: Predictive Analytics Workflow & Lifecycle**
**Resource Person:** *Dr. S. V. Kogilavani, Professor, Department of CSE, NITTTR, Chennai.*
The session discussed the end-to-end predictive analytics lifecycle including data collection, preprocessing, model building, evaluation, deployment, and monitoring. The resource person explained the importance of workflow management and model validation in analytics projects. Participants understood how structured workflows improve efficiency and reliability in predictive systems. The session ended with an engaging interaction and clarification session with participants.




## Day 2 – 21st April 2026

**Session 1: Overview of Data Tools**
**Resource Person:** *Dr. Vani Rajasekar, Assistant Professor Grade II, School of Computer Science and Engineering, VIT, Vellore.*

The session provided an overview of modern data analytics tools and platforms widely used in industry and research. The speaker compared the features and capabilities of various analytical and visualization tools. Participants were introduced to industry trends, cloud-based analytics platforms, and collaborative data environments. The session concluded with practical insights into selecting appropriate tools for research and teaching activities.

**Session 2: Data Preprocessing**
**Resource Person:** *Dr. Vani Rajasekar, Assistant Professor Grade II, School of Computer Science and Engineering, VIT, Vellore.*
The session covered data cleaning, handling missing values, normalization, transformation, and feature preparation techniques. The resource person emphasized the importance of preprocessing in improving model performance and data consistency. Practical examples demonstrated methods for handling noisy and inconsistent datasets effectively. The session concluded with participant interaction and clarification of preprocessing challenges.

**Session 3: Python Preprocessing Hands-on**
**Resource Person:** *Mrs. Deepa Dhevannan, Technical Lead – GenAI Solution Architect, Prana Life Sciences, Bangalore.*
The hands-on session enabled participants to work with Python libraries for preprocessing and exploratory data analysis. Participants performed practical exercises using datasets to understand data transformation and cleaning techniques. The speaker demonstrated the use of Python libraries such as Pandas and NumPy for efficient data processing. The session enhanced participants' confidence in implementing preprocessing techniques independently.

**Session 4: Tableau Dashboards**
**Resource Person:** *Mrs. Deepa Dhevannan, Technical Lead – GenAI Solution Architect, Prana Life Sciences, Bangalore.*
Participants learned to create interactive dashboards and visual analytics using Tableau. The resource person demonstrated dashboard creation, data integration, and filtering techniques using live examples. Participants explored methods for presenting analytical insights effectively through interactive visualizations. The session concluded with hands-on activities and participant feedback.

**Day 3 – 22nd April 2026**
**Session 1 & 2: Forecasting Techniques**
**Resource Person:** *Dr. V. Joseph Raymond, Assistant Professor, SRM Institute of Science and Technology, Kattankulathur, Chennai.*

The sessions introduced forecasting methods, time series analysis, trend analysis, and predictive techniques used for future data estimation. The speaker explained forecasting models and their applications in business analytics, weather prediction, and financial analysis. Participants gained understanding of trend identification, seasonal analysis, and prediction accuracy measures. The session concluded with an interactive Q&A and discussion session.

**Session 3 & 4: Recent Trends in Machine Learning using Scikit-Learn**
**Resource Person:** *Dr. S. Manohar, Professor, SRM Institute of Science and Technology, Vadapalani, Chennai.*
The sessions explored recent advancements in machine learning and practical implementation using Scikit-Learn libraries. The resource person demonstrated supervised learning algorithms, model evaluation techniques, and feature optimization strategies. Participants gained exposure to real-time machine learning workflows using Python-based tools and datasets. The sessions concluded with practical demonstrations and participant interaction.

**Day 4 – 23rd April 2026**
**Session 1: Visual Storytelling**
**Resource Person:** *Dr. Bulla Rajesh, Assistant Professor, Indian Institute of Information Technology, Tirupati.*
The session focused on communicating insights effectively through visual storytelling techniques. The speaker highlighted the importance of combining data visualization with narratives to improve audience engagement and understanding. Real-world examples demonstrated how storytelling enhances analytical presentations and decision-making processes. The session concluded with interactive discussions and participant feedback.

**Session 2: Feature Engineering**
**Resource Person:** *Dr. Bulla Rajesh, Assistant Professor, Indian Institute of Information Technology, Tirupati.*
Participants learned techniques for selecting, transforming, and engineering features to improve predictive model performance. The speaker discussed feature extraction, dimensionality reduction, and feature importance analysis methods. Practical examples demonstrated how effective feature engineering improves model accuracy and efficiency. The session concluded with participant interaction and Q&A discussion.

**Session 3: Power BI Dashboards**
**Resource Person:** *Mr. Aashu Dev, AWS Academy Accredited Educator, Bengaluru.*
The session demonstrated the creation of interactive dashboards and reports using Power BI. Participants learned data connectivity, report generation, and visualization customization techniques through live demonstrations. The speaker explained how Power BI supports business intelligence and real-time analytics applications. The session concluded with participant interaction and feedback.

**Session 4: Power BI Hands-on**
**Resource Person:** *Mr. Aashu Dev, AWS Academy Accredited Educator, Bengaluru.*
Participants gained practical exposure to Power BI tools through guided exercises and real-time analytics activities. The resource person guided participants in creating dashboards, importing datasets, and generating analytical reports. Hands-on

activities enhanced participants' practical understanding of business intelligence applications and reporting techniques. The session concluded with feedback and interaction with participants.

## Day 5 – 24th April 2026

**Session 1: Anomaly Detection**

**Resource Person:** *Mr. S. Irfan Basha, Software Architect, Co-Founder, NGI Academy, Madanapalle.*

The session discussed anomaly detection techniques and their applications in fraud detection, cybersecurity, and intelligent monitoring systems. The resource person explained various anomaly detection models and pattern recognition approaches using real-world examples. Participants understood the importance of anomaly detection in identifying irregularities and ensuring system reliability. The session concluded with a Feedback and Q&A session with participants.

**Session 2 & 3: AutoML & XAI / Cross-Sector Case Studies**

**Resource Person:** *Dr. Praveen R, Assistant Professor, Department of CSE, NIT Puducherry.*

The sessions focused on Automated Machine Learning (AutoML), Explainable Artificial Intelligence (XAI), and real-world case studies from multiple domains. The speaker explained how AutoML simplifies model development and improves accessibility to machine learning technologies. Participants also learned the significance of transparency and interpretability in AI systems through XAI techniques and cross-domain applications. The sessions concluded with participant interaction and feedback.

## Valedictory Function and Evaluation

The FDP concluded with a valedictory session and participant evaluation. Feedback was collected from participants regarding the effectiveness and usefulness of the programme. The valedictory function was conducted with great enthusiasm and active participation. The function began with a heartfelt address by the FDP Coordinator, Dr. K. Nirmala Devi, who shared a brief overview of the FDP journey, its key highlights, and expressed her gratitude to all the resource persons, participants, and organizing team. Following this, Dr S Kusuma, Head of the Department, CSE (Data Science) addressed the gathering and appreciated the efforts taken by the faculty members to engage in continuous learning and professional development.

Dr P Ramanathan, Principal extended his warm wishes and congratulated the organizing team for the successful completion of the FDP. He emphasized the importance of such faculty development initiatives in enhancing teaching quality and promoting research-oriented thinking. Then, the certificates were distributed to the participants by the dignitaries based on attendance, evaluation performance, and feedback submission.

The program concluded with participants expressing their feedback on the FDP, highlighting the knowledge gained, practical insights, and the overall quality of the sessions. The FDP received an enthusiastic response from faculty members belonging to constituent and affiliated colleges of JNTUA. Participants actively engaged in technical discussions, hands-on exercises, and collaborative learning activities throughout the programme. The interactive nature of the sessions, practical demonstrations, and real-world case studies significantly enhanced the learning experience. Participants appreciated the balance between theoretical concepts and practical implementation.

## Outcomes of the FDP

The Faculty Development Programme successfully achieved its intended outcomes:

- Enhanced faculty understanding of predictive analytics and data visualization concepts.
- Improved practical exposure to Python, Tableau, and Power BI tools.
- Increased awareness of machine learning, forecasting, anomaly detection, and AutoML techniques.
- Encouraged integration of modern analytics tools into teaching and research.
- Strengthened interdisciplinary collaboration and research orientation among participants.
- Enabled participants to apply data-driven methodologies in academic and professional activities.