



AGENTIC AI & MLOPS

Design and Deployment of Intelligent Systems

Faculty Development Program (Hybrid Mode)

22 June to 26 June 2026

Organized by

Department of Artificial Intelligence & Data Science and IQAC LBRCE



Dr. M. C. Das

Professor and Management Consultant

Topic: Classroom Dynamics

Date: 22-06-26 (Offline)
10AM to 12 PM



Mr. Rupesh Koshariya

Computer Vision Engineer
Exalenze Pune

Topic: Deploying MLOPS

Date: 23-06-26 (Online)
10AM to 12 PM



Dr. Sonia Semwal

Research lead
Zysec.ai Abudhabi

Topic: Agentic AI

Date: 24-06-26 (Online)
10AM to 12 PM



Dr. Vanshali Sharma

Visiting Researcher
Northwestern University,
Chicago, USA

Topic: AI Agents in Health Care

Date: 25-06-26 (Online)
10AM to 12 PM



Dr. Santosh Kumar

Principal Data Scientist,
NHS Counter Fraud Authority, England

Topic: AI for Health Data Analytics

Date: 26-06-26 (Online)
7PM to 9PM



No Registration Fee



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Conveners

Dr. P. Bhagath, Professor & Head, AI&DS

Dr. K. R. L. Prasad, IQAC Coordinator

Coordinators

Dr Ch. Rajendra Babu, Professor

Mr K. Venkatesh, Sr. Asst. Professor



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(AUTONOMOUS)

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Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada.

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

FDP Report on Agentic AI &MLOps: Design and Deployment of Intelligent Systems

Event Type	: One week FDP
Dates	: 22 – 26, June 2026
Time	: 10.00 AM - 12:00 PM
Mode	: Online
Organized by	: Organized by Dept of AI & DS ,LBRCE.
Resource Speaker	: Dr. M.C. Das, Professor & Management Consultant Mr. Rupesh Koshariya, Computer Vision Engineer, Exalenze Pune Dr. Sonia Semwal, Research Lead, Zysec.ai Abu Dhabi Mr Dr. Vanshali Sharma, Visiting Researcher, Northwestern University, Chicago, USA Dr. Tushar Semwal, Senior Applied Scientist, microsoft
Conveners	: Dr. P. Bhagath , Professor & Head, AI&DS Dr. K. R. L. Prasad , IQAC Coordinator
Coordinator(s)	: Dr. Ch. Rajendra Babu , Professor, AI&DS Mr. K. Venkatesh , Sr. Asst. Professor. Professor, CSE
Target Audience	: All the teaching faculty
Total no. of faculty	: 294

Introduction

The Department of Artificial Intelligence & Data Science (AI&DS), in association with the Internal Quality Assurance Cell (IQAC), organized a five-day Faculty Development Programme (FDP) on "**Agentic AI &MLOps: Design and Deployment of Intelligent Systems**" from June 22 to June 26, 2026. The programme was designed to equip faculty members, research scholars, and postgraduate students with cutting-edge knowledge in emerging AI paradigms, including Agentic AI, MLOps, and intelligent system deployment.

The FDP featured distinguished resource persons from academia, industry, and international research organizations, delivering expert talks on specialized topics ranging from classroom pedagogy to

advanced AI applications in healthcare. The programme successfully bridged the gap between academic knowledge and industry practices, fostering a culture of continuous learning and innovation.

Objective of the Event

The major objectives of the program were:

- **Enhance Teaching Effectiveness** – Equip faculty with modern pedagogical strategies to improve student engagement and classroom management in technical education.
- **Build MLOps Proficiency** – Develop practical skills in deploying, monitoring, and maintaining machine learning models in production environments.
- **Introduce Agentic AI Concepts** – Familiarize participants with the architecture, frameworks, and applications of autonomous AI agents.
- **Explore AI Applications in Healthcare** – Showcase real-world use of AI agents in diagnostics, clinical decisions, and drug discovery.
- **Promote Responsible AI Practices** – Instill awareness of ethical, safety, and regulatory considerations in AI system development and deployment.

Key Highlights of the FDP

- **Expert-Led Sessions** – Delivered by distinguished speakers from academia and industry, including experts from Exalenze Pune, Zysec.ai, and Northwestern University.
- **Comprehensive Coverage** – Spanned pedagogy, MLOps, Agentic AI, and Healthcare AI, blending teaching skills with cutting-edge technical knowledge.
- **Industry-Academia Synergy** – Provided practical, real-world insights through case studies and hands-on industry experience.
- **Focus on Emerging Technologies** – Introduced faculty to trending areas like Agentic AI and MLOps, keeping curriculum aligned with current industry trends.
- **Ethics and Responsibility** – Emphasized safety, alignment, and ethical considerations across AI applications, especially in sensitive domains like healthcare.

Day-Wise Description of the FDP

DAY-1

Dr. M.C. Das inaugurated the FDP with an insightful and engaging session on "**Classroom Dynamics.**" He emphasized the importance of creating stimulating and interactive learning

environments in engineering education, particularly in the rapidly evolving field of AI and Data Science.

Key Topics Covered:

1. **Modern Pedagogical Approaches:** Understanding contemporary teaching methodologies for technical education, including flipped classrooms, problem-based learning, and collaborative learning strategies.
2. **Student Engagement Strategies:** Techniques to enhance student participation, motivation, and active involvement in the learning process.
3. **Faculty as Facilitators:** The evolving role of faculty members as facilitators and mentors in the AI-driven educational landscape.
4. **Effective Communication:** Developing communication skills to convey complex technical concepts clearly and effectively.
5. **Classroom Management:** Strategies for managing diverse classrooms, handling student queries, and creating an inclusive learning environment.
6. **Integration of Technology:** Leveraging digital tools and AI-powered platforms to enhance teaching effectiveness and student learning outcomes.

DAY-2

Mr. Rupesh Koshariya delivered a comprehensive and practical session on "**Deploying MLOps,**" focusing on the operational aspects of machine learning model deployment in production environments.

Key Topics Covered:

1. **MLOps Fundamentals:** Understanding the complete lifecycle of machine learning models—from development to deployment and monitoring.
2. **CI/CD for ML Pipelines:** Implementing Continuous Integration and Continuous Deployment strategies specifically designed for machine learning workflows.
3. **Model Monitoring and Maintenance:** Techniques for tracking model performance, detecting concept drift, implementing model retraining strategies, and maintaining model health in production.
4. **Containerization and Orchestration:** Using Docker for containerization and Kubernetes for orchestration to enable scalable, reproducible ML deployments.
5. **Production-Grade ML Systems:** Best practices for building robust, scalable, maintainable, and secure ML systems in production environments.
6. **Version Control for ML:** Managing data, code, and model versions using tools like DVC (Data Version Control) and MLflow.

7. **Real-World Case Studies:** Practical deployment challenges and solutions from Mr. Koshariya's experience as a Computer Vision Engineer at Exalenze Pune.

The session was highly practical, with participants gaining valuable insights into real-world MLOps implementation. Mr. Koshariya shared practical tips and industry-proven approaches that can be applied in academic and research settings.

DAY-3

Dr. Sonia Semwal delivered an expert lecture on "**Agentic AI**," exploring the paradigm shift from traditional AI systems to autonomous, goal-directed AI agents. She provided a comprehensive overview of the principles, architecture, and applications of Agentic AI.

Key Topics Covered:

1. **Foundations of Agentic AI:** Understanding autonomous agents, multi-agent systems, goal-directed reasoning, and the evolution from reactive to proactive AI systems.
2. **LLM-Powered Agents:** Architecture and capabilities of Large Language Model (LLM) powered agents, including planning, reasoning, and tool use.
3. **Agentic Workflows:** Planning, execution, feedback loops, and reflection mechanisms in autonomous AI systems.
4. **Tools and Frameworks:** Overview of popular agent frameworks and platforms including LangChain, AutoGPT, BabyAGI, and other emerging frameworks.
5. **Agent Memory and Retrieval:** Short-term and long-term memory mechanisms, vector databases, and retrieval-augmented generation for agents.
6. **Multi-Agent Systems:** Collaboration, competition, and coordination among multiple AI agents.
7. **Safety and Alignment:** Ensuring agentic AI systems are safe, reliable, interpretable, and aligned with human values and ethical principles.
8. **Future Directions:** Emerging trends, research opportunities, and challenges in Agentic AI.

Key Takeaways:

- The transformative potential of autonomous AI agents in solving complex real-world problems
- The importance of safety and alignment in developing trustworthy agentic systems
- Understanding the architectural components of modern AI agents
- The role of memory and retrieval in enabling agentic capabilities
- The challenges of interpretability and explainability in agentic systems

Dr. Semwal's expertise as Research Lead at [Zysec.ai](https://zysec.ai) brought a unique industry-academic perspective to the session. She highlighted both the immense potential and the ethical responsibilities associated with developing agentic AI systems.

DAY-4

Dr. Vanshali Sharma delivered an inspiring and impactful session on "**AI Agents in Healthcare**," showcasing the transformative applications of AI agents in the medical and healthcare domain. She brought international research perspectives from her work at Northwestern University.

Key Topics Covered:

1. **AI in Medical Imaging:** Applications of AI agents in radiology, pathology, medical image analysis, and computer-aided diagnosis.
2. **Clinical Decision Support:** AI agents assisting healthcare professionals in diagnosis, treatment planning, and clinical decision-making.
3. **Patient Monitoring and Care:** Intelligent agents for remote patient monitoring, personalized care, and early warning systems.
4. **Drug Discovery and Development:** AI agents accelerating drug discovery pipelines through virtual screening, molecular modeling, and clinical trial optimization.
5. **Healthcare Operations:** AI agents optimizing hospital operations, resource allocation, and patient flow management.
6. **Ethical Considerations:** Data privacy, algorithmic fairness, interpretability, and responsible AI development in healthcare.
7. **Regulatory Challenges:** Navigating healthcare regulations and validation requirements for AI systems.
8. **Real-World Implementations:** Case studies of successful AI agent deployments in healthcare systems globally.

Key Takeaways:

- The critical role of AI agents in addressing healthcare challenges from diagnostics to personalized medicine
- The importance of interpretability and explainability in healthcare AI
- Understanding the ethical and regulatory considerations unique to healthcare AI
- The potential of AI agents to improve healthcare access, quality, and efficiency
- The importance of interdisciplinary collaboration between AI researchers and healthcare professionals

Dr. Sharma's international research experience brought valuable global perspectives to the session. She emphasized the importance of responsible AI development in healthcare, highlighting both the opportunities and challenges.

DAY-5

Dr. Tushar Semwal, Senior Applied Scientist at Microsoft, delivered an engaging and insightful online session on "Applications of LLMs," offering participants a deep dive into how Large Language Models are transforming real-world products and industries. Drawing from his extensive experience at Microsoft, he presented a practitioner's perspective on building and deploying LLM-powered solutions at scale.

Key Topics Covered:

1. **Foundations of LLM Applications:** Understanding how large language models move from research prototypes to production-ready applications across industries.
2. **Prompt Engineering and Fine-Tuning:** Techniques for optimizing LLM outputs through effective prompting strategies, few-shot learning, and domain-specific fine-tuning.
3. **Retrieval-Augmented Generation (RAG):** Leveraging external knowledge sources to enhance LLM accuracy, reduce hallucinations, and enable context-aware responses.
4. **Enterprise Use Cases:** Real-world applications of LLMs in productivity tools, customer support, code generation, and business intelligence.
5. **Scalability and Deployment Challenges:** Best practices for deploying LLMs efficiently, managing latency, cost optimization, and ensuring reliability in production environments.

Key Takeaways:

- The growing impact of LLMs in transforming everyday productivity and enterprise workflows
- The importance of RAG techniques in improving the reliability and relevance of LLM outputs
- Practical strategies for fine-tuning and prompt engineering to achieve domain-specific accuracy
- Understanding the real-world challenges of deploying LLMs at scale in production systems
- The value of industry experience in bridging the gap between LLM research and practical implementation

Dr. Semwal's industry expertise at Microsoft provided participants with a rare, practitioner-driven understanding of LLM applications beyond theoretical concepts. His session underscored the growing significance of LLMs as foundational tools reshaping technology, business, and innovation, encouraging faculty to explore their integration into both curriculum and research.

Overall Outcome of the FDP

The FDP successfully achieved the following Overall outcomes:

- **Enhanced Pedagogical Skills** – Faculty gained practical strategies to improve classroom engagement, communication, and technology integration in teaching.
- **Strengthened Technical Competence** – Participants developed hands-on understanding of MLOps practices for deploying and maintaining ML models in production.
- **Awareness of Emerging AI Paradigms** – Faculty gained clarity on Agentic AI architectures, frameworks, and their growing role in autonomous systems.
- **Domain-Specific AI Insight** – Exposure to real-world applications of AI and LLMs in healthcare and enterprise settings broadened interdisciplinary understanding.
- **Industry-Aligned Research Outlook** – Interaction with industry experts fostered awareness of current trends, ethical practices, and practical deployment challenges, encouraging integration into curriculum and research.

Impact Analysis

The FDP had a **positive impact** on faculty members, as observed through active participation and feedback:

- **High Engagement** – Faculty actively participated in sessions, discussions, and Q&A across all five days, reflecting strong interest in the topics covered.
- **Skill Enhancement** – Participants reported improved understanding of modern pedagogy, MLOps, and emerging AI technologies applicable to their teaching and research.
- **Curriculum Relevance** – Faculty gained practical insights to update course content and align academic programs with industry-relevant AI advancements.
- **Positive Feedback** – Overall feedback indicated satisfaction with the quality of resource persons, session content, and real-world relevance of the topics.
- **Motivation for Further Learning** – The FDP inspired faculty to explore deeper research and self-learning in areas like Agentic AI, MLOps, and LLM applications.

Feedback and Suggestions

Participant Feedback Summary

Participants appreciated:

- The **diversity of topics** covering both technical and pedagogical aspects
- The **expertise and practical insights** shared by resource persons from industry and academia
- The **interactive nature** of sessions with Q&A opportunities

- The **international perspectives** brought by resource persons from the USA, England, and Abu Dhabi
- The **practical relevance** of topics to current industry requirements
- The **blended mode** (offline + online) that enabled wider participation

Overall feedback reflected **high satisfaction** with content, coordination, and resource persons.

Conclusion

The five-day FDP successfully blended pedagogical development with cutting-edge AI knowledge, covering classroom dynamics, MLOps, Agentic AI, healthcare AI, and LLM applications. Through expert-led sessions and industry insights, faculty gained valuable skills and perspectives to enhance both their teaching practices and research orientation, reinforcing the institution's commitment to continuous learning and innovation in AI-driven education.



Dr. P. Bhagath

Convener of FDP

Professor & Head, AI&DS