

AI/ML Analyst : Machine Learning in Oil & Gas Operations

Date

29th June – 3rd July , 2025

Venue

Cairo | EGYPT

Objectives & Description:

- ✓ Understand the fundamentals of AI/ML applications in oil & gas.
- ✓ Master machine learning algorithms for predictive maintenance.
- ✓ Utilize AI for advanced reservoir modeling and simulation.
- ✓ Implement data analytics for optimizing production and operations.
- ✓ Design and build efficient AI/ML workflows for oil & gas data.
- ✓ Optimize AI/ML models for accuracy and performance.
- ✓ Troubleshoot and address common challenges in AI/ML implementations.
- ✓ Implement data governance and security for AI/ML projects.
- ✓ Integrate AI/ML tools with existing oil & gas software and systems.
- ✓ Understand how to manage large-scale AI/ML deployments in oil & gas.
- ✓ Explore advanced AI/ML applications (e.g., real-time monitoring, automated decision-making).
- ✓ Apply real world use cases for AI/ML in various oil & gas operations.
- ✓ Leverage AI/ML tools and frameworks for efficient model development.

Participants :

- ✓ Reservoir Engineers
- ✓ Production Engineers
- ✓ Maintenance Engineers
- ✓ Data Scientists in Oil & Gas
- ✓ Operations Managers
- ✓ IT Professionals in Oil & Gas
- ✓ Geologists and Geophysicists

Contents :

- **Introduction to AI/ML in Oil & Gas**
 - Fundamentals of AI/ML applications in oil & gas.
 - Overview of machine learning algorithms and data analytics.
 - Setting up an AI/ML development environment for oil & gas.
 - Introduction to AI/ML tools and frameworks.
 - Best practices for AI/ML implementation.
- **Predictive Maintenance with Machine Learning**
 - Mastering machine learning algorithms for predictive maintenance.
 - Utilizing regression and classification models for equipment failure prediction.
 - Implementing anomaly detection for real-time monitoring.
 - Designing and building predictive maintenance workflows.
 - Best practices for predictive maintenance.
- **AI for Reservoir Modeling and Simulation**
 - Utilizing AI for advanced reservoir modeling and simulation.
 - Implementing machine learning for reservoir property prediction.
 - Designing and building AI-driven reservoir simulation models.
 - Optimizing reservoir management with AI.
 - Best practices for reservoir modeling.
- **Data Analytics for Production Optimization**
 - Implementing data analytics for optimizing production and operations.
 - Utilizing time-series analysis for production forecasting.
 - Designing and building data-driven production optimization strategies.
 - Optimizing operational efficiency with AI.
 - Best practices for production analytics.

To register

- **Please send an e-mail to :**
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- **Or by Fax :**
002 02 358 32 305
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www.atecu.org
- **Or send a mail to :**
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- **AI/ML Workflow Design**

- Designing and building efficient AI/ML workflows for oil & gas data.
- Implementing data preprocessing and feature engineering.
- Designing and building model training and evaluation pipelines.
- Optimizing workflows for automation and scalability.
- Best practices for AI/ML workflows.

- **Model Optimization and Performance**

- Optimizing AI/ML models for accuracy and performance.
- Utilizing hyperparameter tuning and model selection techniques.
- Implementing model validation and testing strategies.
- Designing efficient model deployment pipelines.
- Best practices for model optimization.

- **Troubleshooting AI/ML Implementations**

- Troubleshooting and addressing common challenges in AI/ML implementations.
- Analyzing model performance and diagnostic metrics.
- Utilizing problem-solving techniques for resolution.
- Resolving common AI/ML errors.
- Best practices for troubleshooting.

- **Data Governance and Security**

- Implementing data governance and security for AI/ML projects.
- Utilizing data access control and audit logging.
- Designing and building secure AI/ML data systems.
- Optimizing security for sensitive oil & gas data.
- Best practices for data governance.

- **Integration with Oil & Gas Systems**

- Integrating AI/ML tools with existing oil & gas software and systems.
- Utilizing APIs and data connectors for seamless integration.
- Implementing AI/ML within existing operational frameworks.
- Designing efficient integration strategies.
- Best practices for system integration.

- **Large-Scale AI/ML Deployments**

- Understanding how to manage large-scale AI/ML deployments in oil & gas.
- Utilizing cloud-based AI/ML platforms.
- Implementing distributed AI/ML processing.
- Designing scalable AI/ML solutions.
- Best practices for large scale AI/ML.

- **Advanced AI/ML Applications**

- Exploring advanced AI/ML applications (real-time monitoring, automated decision-making).
- Utilizing AI for real-time equipment monitoring and diagnostics.
- Implementing AI for automated drilling and production decisions.
- Designing and building advanced AI/ML solutions.
- Optimizing advanced applications for specific use cases.
- Best practices for advanced AI/ML.

- **Real-World AI/ML Use Cases**

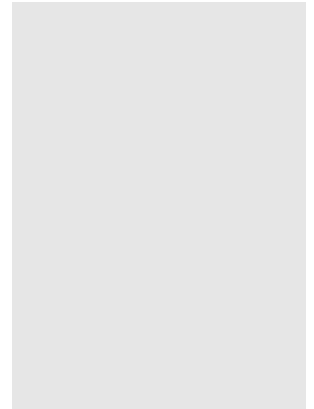
- Implementing AI/ML for well performance optimization.
- Utilizing AI/ML for pipeline integrity management.
- Implementing AI/ML for drilling risk assessment.
- Utilizing AI/ML for subsurface characterization.
- Best practices for real-world applications.

- **AI/ML Tools Implementation**

- Utilizing AI/ML tools and frameworks (TensorFlow, Scikit-learn, PyTorch).
- Implementing AI/ML models with specific tools.
- Designing and building automated AI/ML workflows.
- Optimizing tool usage for efficient model development.



- Best practices for tool implementation.
- **AI/ML Monitoring and Metrics**
 - Implementing AI/ML monitoring and metrics.
 - Utilizing model performance dashboards and reports.
 - Designing and building AI/ML monitoring systems.
 - Optimizing monitoring for real-time insights.
 - Best practices for model monitoring.
- **Future Trends in AI/ML for Oil & Gas**
 - Emerging trends in AI/ML applications for oil & gas.
 - Utilizing AI for autonomous drilling and production.
 - Implementing AI for carbon capture and storage optimization.
 - Best practices for future AI/ML applications.



Fees	• USD : 3800 \$
Timing	• 09:00 Am – 10:30 Am (Section One) • 10:30 Am – 10:45 Am (Break) • 10:45 Am – 12:00 Pm (Section Two) • 12:00 Pm – 12:30 Pm (Break & Pray) • 12:30 Pm – 02:00 Pm (Section Three) • 02:00 Pm – 03:00 Pm (Lunch Break)
Language	• English & Arabic .