EAGE

EUROPEAN ASSOCIATION OF GEOSCIENTISTS & ENGINEERS

2nd EAGE Workshop on Enhancing Subsurface Practices using AI/ML

1-2 DECEMBER 2026 • DAEJEON, SOUTH KOREA

- **First Announcement**

WWW.EAGE.ORG

HOSTED BY KIGAM

ABOUT THE WORKSHOP

Following the success of the first edition of this workshop held in Perth in November 2025, EAGE is pleased to announce the second edition of the EAGE Workshop on Enhancing Subsurface Intelligence Practices Using AI/ML scheduled to be held from 1-2 December 2026 in Daejeon, South Korea, hosted by KIGAM.

In recent years, artificial intelligence—specifically machine learning—has emerged from abstraction and become of practical utility. AI/ML now offer powerful means to address one of humanity's oldest and grandest challenges: understanding the hidden structure of the Earth. From delineating faults to tracing salt boundaries and refining image resolution, machine learning enables us not merely to compute, but to infer, to classify, and to quantify uncertainty in ways previously unattainable.

This workshop will bring together scholars and practitioners who have taken up this task. We aim to examine how machines may assist us in geoscientific inquiry, particularly in the context of subsurface exploration, characterisation, and recovery for oil, gas, and minerals. Participants will share their applications and insights, exploring the use of machine learning across the vast spectrum of geophysical data—from classification to interpretation, interpolation to inversion.

The central question is no longer whether machines can learn, but what we can—and cannot—teach them. And perhaps more profoundly, what they may teach us.

OBJECTIVES & BACKGROUND OF THE WORKSHOP

This workshop is both practical and philosophical. It seeks to unite the diverse approaches now emerging in the application of machine learning and agentic AI to geoscience, particularly where autonomous, goal-driven systems can assist human experts in complex decision workflows. Our purpose is not only to compare methods and results, but to foster an environment of genuine intellectual exchange—between institutions, disciplines, and between academia and industry—around how these systems are designed, validated, deployed, and governed in subsurface contexts. Through dialogue and demonstration, we aim to illuminate the strengths and limitations of current methods, encourage critical examination of their foundations, and initiate collaborations that advance both the science of the Earth and the science of learning and acting with AI.

Machine learning, a modern incarnation of artificial intelligence, has shown great promise in solving problems that once defied formalism, and agentic AI extends this promise from prediction to action—coordinating tools, data sources, and simulations to pursue geoscientific objectives with minimal manual intervention. What distinguishes these approaches is not merely their capacity for computation, but their capacity for adaptation and orchestration: constructing predictive models from data, steering model-driven experiments, proposing new acquisition or processing strategies, and closing loops between interpretation, inversion, and decision-making. The rise of such systems has been driven by a confluence of forces: an explosion of geological and geophysical data, advances in mathematical and computational theory, and extraordinary improvements in scalable infrastructure, making it feasible to embed AI agents directly within subsurface characterization workflows.

In the context of Earth exploration, particularly for oil, gas, and minerals, these developments offer a new approach: not to replace the physics of the Earth, but to augment and operationalize it through agentic workflows that can plan, reason, and interact with complex models and uncertain data. From seismic records to well logs, gravity and magnetic fields, and remote sensing, the challenge is to extract structure from noise and signal from ambiguity—not merely by statistical means, but by coupling data-driven inference with physics-based simulation, uncertainty quantification, and autonomous task execution. By foregrounding emerging themes such as multi-modal foundation models, closed-loop acquisition and processing, digital twins, and human-AI collaboration in subsurface decision systems, this workshop invites participants to explore what we can—and cannot—delegate to machines, and how such delegation reshapes geoscientific practice.

TECHNICAL COMMITTEE

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Prof. Dr. Roman Pevzner (Co-Chairperson)	Curtin University
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Min Jun Park	X, The Moonshot Factory

CALL FOR ABSTRACTS

The Call for Abstracts for the **2nd EAGE Workshop on Enhancing Subsurface Practices using AI/ML** is open now! The submission deadline is set to **Friday, 10 July 2026, 2359 hrs (GMT+8).** After this date, it is no longer possible to add submissions. Please scan the QR code to visit the event website and learn more information on abstract submission.

TOPICS

1. Machine Learning for Seismic Interpretation and Inversion
2. Big Data Analytics and Uncertainty Quantification for Imaging in Geoscience
3. Data Preparation and Curation for ML in Geoscience
4. ML-Enhanced Resolution, Interpolation, and Classification Techniques
5. Applications across Scales- from Global Models to Reservoir or Mine-scale Predictions
6. Comparative Approaches: Deep Learning, Shallow Networks, and Hybrid Methods
7. Integration of ML with Traditional Geophysical Workflows
8. Utilization of LLM for Subsurface Analytics and Workflow Automation
9. ML for Velocity Model Building and Full Waveform Inversion
10. Agentic AI for Geoscience Applications and Workflow Automation

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EUROPE OFFICE
+31 88 995 5055
EAGE@EAGE.ORG

MIDDLE EAST/AFRICA OFFICE
+971 4 369 3897
MIDDLE_EAST@EAGE.ORG

ASIA PACIFIC OFFICE
+60 3 272 201 40
ASIAPACIFIC@EAGE.ORG

AMERICAS OFFICE
+57 310 8610709
AMERICAS@EAGE.ORG

ASIA PACIFIC OFFICE • UOA CENTRE OFFICE SUITE 19-15-3A • KUALA LUMPUR • MALAYSIA • +603 2722 0140 • ASIAPACIFIC@EAGE.ORG

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