EAGE

EUROPEAN ASSOCIATION OF GEOSCIENTISTS & ENGINEERS

EAGE Conference on Seismic Interpretation using AI Methods

GOING BEYOND MACHINE LEARNING

12-13 OCTOBER 2021 • ONLINE

- **Technical Programme**

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TABLE OF CONTENTS

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Dan Austin	Earth Science Analytics AS
Vanessa Nenna	Exxonmobil
Ruslan Miftakhov	Geoplat
Vladimir Puzyrev	Curtin University Oil and Gas Innovation Centre

EVENT OVERVIEW

Interpreting seismic data requires an in-depth understanding of Geology. Additionally, the features, elements and amplitudes generated by Geophysical methods cannot be interpreted in isolation. If done manually, seismic interpretation is performed by a Geoscientist that has extensive geologic insights (depositional environment, analogues, structure and sedimentology) and uses this knowledge to guide his/her interpretation by using cognitive pattern recognition and image processing. This conference will focus on the provocative and evolving world of Artificial Intelligence to interpret seismic data. Related discussions will include elements of cross discipline pattern recognition, seismic geomorphology and intelligent multi-disciplinary G&G integration using Artificial Intelligence and its future possibilities.

KEYNOTE SPEAKERS

Lindsey Allen
Senior Director of Data Science
Microsoft

Xinming Wu
Professor of Geophysics
USTC (University of Science and Technology of China)

Jesper Dramsch
Machine Learning Engineer
ECMWF

Kenton Prindle
Head of Data Science and Geoscience
Studio X

GUEST SPEAKERS

Anne Dutranois Coumont
Geomodeler
Chevron ETC

Sebastien Guillon
Senior Specialist in Computer Vision
TotalEnergies

WORKSHOP PANELISTS

Lukas Mosser
Principal Geo / Data Scientist
Earth Science Analytics

Sebastien Guillon
Senior Specialist in Computer Vision
TotalEnergies

Karelia La Marca
Graduate Research Assistant
University of Oklahoma

Ruslan Miftakhov
Chief Technical Officer
Geoplat

Vanessa Nenna
Data Scientist
Exxonmobil

The panel of speakers is confirmed as of publishing date and may be subject to change without prior notice.

TECHNICAL PROGRAMME

This event will be conducted as per Malaysia Time (UTC +8)
The programme is confirmed as of publishing date and may be subject to change without prior notice.

Oral Presentations | Tuesday 12 October

DAY 1	
08:00	**Opening Remarks by Conference Chairs -** E. Andersen[1]*, R. Schapiro[2]* [1]PETRONAS; [2]Microsoft
Keynote Presentations Session Chairs: V. Nenna, Exxonmobil & J. Chenin, Bluware	
08:10	**Keynote 1: Making AI Real for Businesses -** L. Allen[1]* [1]Microsoft
08:30	**Keynote 2: How AI is Changing the Future of Work in Exploration Through Knowledge Capture, Data Automation, Augmented Reality and AI Accessibility -** K.Prindle[1]* [1]Studio X
08:50	**Panel Discussion on Vision and Future -** L. Allen[1]*, K. Prindle[2]*, [1]Microsoft; [2]Studio X
09:20	**Break**
Session 1: Advanced Seismic Interpretation using Machine Learning/Artificial intelligence Methods Session Chairs: R. Schapiro, Microsoft & V. Puzyrev, Curtin University Oil and Gas Innovation Centre	
09:35	**Guest Speaker 1: Use Machine Learning and Seismic to Build Fault Probability Cubes for Structural Models -** A. D. Coumont[1]* [1]Chevron ETC
09:55	**Guest Speaker 2: REX on TotalEnergies GAIA Project: How AI Could Help Seismic Interpretation? -** S. Guillon[1]* [1]TotalEnergies
10:15	**4. Integrated Machine Learning For Better Predictions -** T. Smith[1]*, D. Sacrey[1], J. Qi[1], C. Laudon[1], H. Kabazi[1], H. Green[5] [1]Geophysical Insights

10:35	**18. Using Synthetic Seismic Data to Quantify Uncertainty In Machine Learning Algorithms for Seismic Facies -** K. La Marca[1]*, L. Ortiz[1], H. Bedle[1], K. Marfurt[1], L. Stright[2], R. Pires de Lima[3] [1]University of Oklahoma; [2]Colorado State University; [3]Geological Survey of Brazil
10:55	**Joint Q&A Session**
11:15	**Break**
Session 2: Machine Learning/Artificial intelligence For Extracting Geologic Insights from Seismic Session Chairs: J. Ting, CGG & C.Onn, PETRONAS	
11:30	**14. Machine Learning for Fault Identification: So many methods! So Many Faults! -** H. Bedle[1]*, C. Ramos Sanchez[1], E. Perico[1], J. Pedro Mora[1] [1]University of Oklahoma
11:50	**16. Using Machine Learning to Predict Reservoir Facies and Reveal Hidden Geology -** M. Khan[1]*, Y. Bashir[1], S.S. Ali[2], M.H. Badar[2], A. Maskeen[2] [1]USM University; [2]Saudi Aramco
12:10	**19. Adding Geological Constraints in Machine Learning for Seismic Based Reservoir Characterization -** P. Boonyasatphan[1]*, O. Limpornpipat[1], W. Promrak[1], R.P.A. Bekti[2], J. Ting[2] [1]PTTEP; [2]CGG
12:30	**Joint Q&A Session**
12:50	**End of Conference Day 1**
21:00	**An Interactive Design Thinking Workshop - Reinventing Exploration through Artificial Intelligence**
00:00	**End of Workshop**

Oral Presentations | Wednesday 13 October

DAY 2

Keynote Presentations
Session Chairs: R. Miftakhov, Geoplat &
D. Austin, Earth Science Analytics AS

14:00	**Keynote 3: What AI in Geophysics Can Learn from Self-Driving Cars? -** J.Dramsch[1]* [1]ECMWF
14:20	**Keynote 4: Deep Learning For Interpreting Seismic Structures and Building Subsurface Models -** X. M. Wu[1]* [1]University of Science and Technology of China
14:40	**Panel Discussion -** J.Dramsch[1]*, X. M. Wu[2]* [1]ECMWF; [2]University of Science and Technology of China
15:10	**Break**

Session 3: Advanced Seismic Interpretation using Machine Learning/Artificial intelligence Methods
Session Chairs: J. Chenin, Bluware &
W. L. Liew, PETRONAS

15:25	**24. Details and 3d Visualization of Karst Geology in Tangguh, Indonesia Revealed by AI Assisted Seismic Interpretation -** S. Dee[1]*, C. Birt[1], P. Endresen[2], M. Vinson[1], R. Apriani[1], H. Rogers[1], R. Fitriannur[1] [1]BP; [2]Bluware Inc.
15:45	**12. AI Seismic Interpretation -** J. Lowell[1]*, M. Brownless[1], M. Montouchet[1] [1]Geoteric
16:05	**20. One-Shot Learning for Seismic Fault Delineation -** A. Yurikova[1], A. Bazanov[1], P. Morozov[1], I. Efremov[1], R. Miftakhov[1]* [1]Geoplat
16:25	**15. Combination of AI Algorithms to Interpret and Distribute Facies and Properties on a Geological Model -** A. Diaz[1], C. Nunez[1]* [1]Rock Flow Dynamics
16:45	**Joint Q&A Session**
17:05	**Break**

Session 4: Machine Learning/Artificial intelligence For Extracting Geologic Insights from Seismic
Session Chairs: R. Miftakhov, Geoplat &
O. Lee, Geoteric

17:20	**8. Hybrid Workflow Composed of Automation and Domain Expertise: Application to Comprehensive Seismic Interpretation Toward RGT Modeling -** N. Daynac[1]*, L. Evano[1], F. Cubizolle[1], S. Lacaze[1] [1]ELIIS
17:40	**11. Direct 3D Rock and Fluid Property Prediction from Seismic Data -** D. Oikonomou[1]*, G. Stefos[1], E. Naeini[1], E. Larsen[1], L. Mosser[1], B. Alaei[1] [1]Earth Science Analytics AS
18:00	**13. Artificial Intelligence Methodologies and Image Processing System Incorporating Geoscientist Knowledge -** D.S. Cersosimo[1]*, A. Torres Fernandez[1], J. Almeida[1], T. Martins[1], R. Ferreira[2], V. Torres[2], R. Cerqueira[2], M. Quintela[1] [1]Galp Energia; [2]IBM
18:20	**Joint Q&A Session**
18:40	**Break**

Session 5: Machine Learning/Artificial intelligence Case Studies
Session Chairs: S. Lacaze, Eliis & S. Rajput, PETRONAS

18:55	**23. Machine Learning Assisted Structural and Quantitative Seismic Interpretation on a 1500 Km2 OBN Survey, North Sea -** S. Jansen[1]*, A. Citlali Ramirez[1], E. Larsen[2] [1]TGS; [2]ESA
19:20	**2. From Interpreter's Labels to Probability for Injectite Sands - AI Assisted Interpretation -** E. Holtar[1]* [1]Bluware Corporation
19:45	**7. Combining Relative Geological Time Model With AI-Assisted Igneous Intrusions Detection In The Parnaíba Basin, Brazil -** F. Gonçalves[1]*, E. Alonso[1], F.L. Lafferriere[2], J.V. Anjos[2] [1]Kognitus; [2]Eliis
20:10	**Joint Q&A Session**
20:30	**Closing Remarks by Conference Chairs -** E. Andersen[1]*, R. Schapiro[2]* [1]PETRONAS; [2]Microsoft
20:40	**End of Conference Day 2**

IMPORTANT DATES

Event Date	12 & 13 October 2021
An Interactive Design Thinking Workshop – Reinventing Exploration through AI	12 October 2021
Online Registration Deadline	6 October 2021

## ACCESSING THE VIRTUAL EVENT

The virtual event will be hosted on the InEvent platform. A few days prior to the event day, all registered attendees will receive an Attendee Pack via email which will consist of the event guidelines and virtual lobby login link to join the event. All attendees are advised to follow the event guidelines for optimal event experience.

REGISTRATION

REGISTERED AND PAID	
EAGE Member	€300
Non-Member	€400
EAGE Student Member	€150
Student Non-Member	€200

Members please note:
- To qualify for the member registration fee, your EAGE membership dues for 2021 must have been paid and confirmed. The processing time for membership applications or renewals is 10 working days.
- To qualify for the reduced student registration fee:
  - Students must be enrolled in a full time study programme at a recognized university or institute
  - The registration must be accompanied by a copy of a student ID card and/or official proof of enrolment
- The non-member fee includes EAGE membership for the remainder of 2021. This membership will be activated shortly after the event.
- Student non-members cannot be older than 34 years of age (when registering).
- EAGE registration fees differentiate between EAGE members and non-members. In the table above you can see what the different fees are.
- All fees are in Euros (€). One Euro of your total registration fee is donated to the EAGE Green Fund.
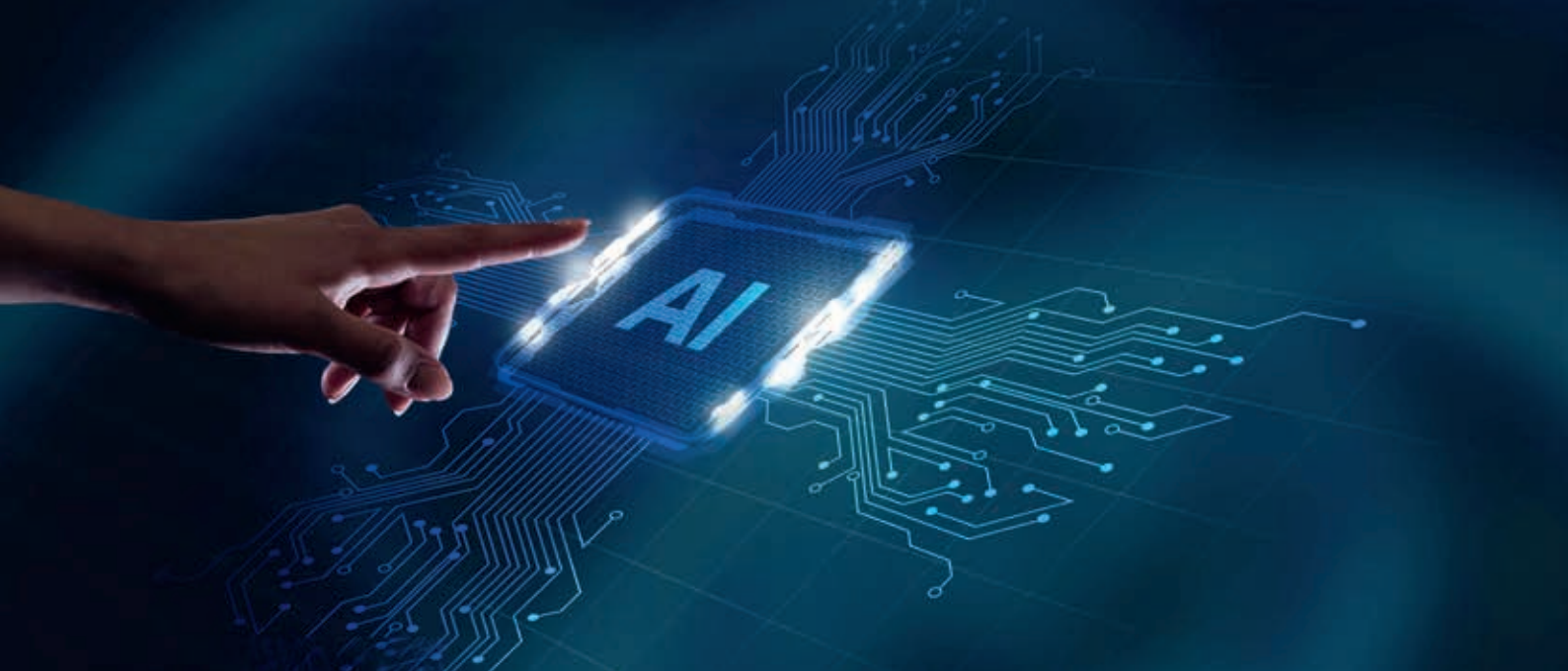
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