

MACHINE LEARNING

DECEMBER 3-4, 2024

Technical Programme

Photography is not permitted during technical presentations

DAY ONE | December 3rd, 2024

07:30-08:30 AM	Onsite Registration	
08:30-09:30 AM	Keynotes Speaker: Introduction to Fourier Neural Operators and Their Applicability in Geophysics	Rodrigo Portugal (Halliburton)
09:30-10:00 AM	Seismic Horizon Interpretation with Deep Learning: a case study in Santos Basin	Alexsandro Guerra Cerqueira (GAIA-UFBA), João P. Gomes (GAIA-UFBA), José L. Silva (GAIA-UFBA), Paulo Vidigal (GAIA-UFBA), Paulo Barros (GAIA-UFBA)
10:00-10:30 AM	Automated fracture-zone prediction in multi-azimuth seismic data using deep learning	Lorena da Silva Oliveira Santos (Kognitus), Matheus Silva Gonçalves (Kognitus), Pablo Machado Barros (Petrobras), Pedro Henrique Silvany (Petrobras), Carlos Eduardo Borges de Salles Abreu (Petrobras), Alexandre Augusto Cardoso da Silva (Petrobras), Rogério Espíndola (COPPE-UFRJ), Maria Célia Lopes (COPPE-UFRJ), Lucas Dias (COPPE-UFRJ), Bruno Souza (COPPE-UFRJ)
10:30-10:50 AM	Coffee Break	
10:50-11:20 AM	Diffusion Model Based Artificial Seismic Image Generation	Pedro Gil Oliveira De Magalhães Couto (Petrobras), Thales Amaral Paes de Mesentier (Petrobras), Vitor Giudice Batista de Araujo Porto (Petrobras), Ronnypetson Souza da Silva (Petrobras)
11:20-11:50 AM	Application of Deep Learning in 2D Seismic Analysis	Marcio Lemos Rodrigues (IesBrazil Technology & Innovation), Neida Ilana (IesBrazil Technology & Innovation), Carlos Saraiva (IesBrazil Technology & Innovation), Vanessa Lira (IesBrazil Technology & Innovation), Juliana Fernandes (IesBrazil Technology & Innovation)
11:50-12:20 PM	Usage of deep learning techniques to recognize and map shallow faults at Albacora Leste Field	Rodrigo de Paiva Ferro (PRIO), Ana Krueger (Bluware), Neida Ilana Rios (IesBrazil Technology & Innovation), Humberto Bovolenta (PRIO), Andre Silva (PRIO), Pedro Henrique Guara Rocha Coelho (PRIO), Marina Jordao Martins (PRIO)
12:20-01:20 PM	Lunch	
01:20-02:20 PM	Keynotes Speaker: GANs Applied to Geological Modeling	Laureano Gilioli (Microsoft)
02:20-03:20 PM	Pavel Dimitrov - NVIDIA	Pavel Dimitrov (NVIDIA)
03:20-03:50 PM	The The geoML project: spatial modeling in the 21st century	Ítalo Gomes Gonçalves (Federal University of Pampa), Marcus Vinicius Aparecido Gomes de Lima (Federal University of Pampa)
03:50-04:20 PM	Feature augmentation techniques as an improvement process of acoustic seismic inversion.	Carlos Eduardo Pereira Pacheco (Halliburton), Reinaldo Mozart da Gama e Silva (Halliburton), Edson Alonso Falla Lusa (Halliburton), Matheus Lima Lemos de Oliveira (Halliburton), Aury Candido Bezerra (Petrobras)
04:20-06:20 PM	Coffe Break and Hands On Session - Accelerating Data Flow to OSDU With ML	Wladimir Frazao (AWS), Juliana Fernandes (IesBrazil Technology & Innovation)
06:20-08:00 PM	Ice Breaker Reception — Restaurante VAMO	

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DAY TWO | December 4th, 2024

07:30-08:30 AM	Onsite Registration	
08:30-09:30 AM	Keynotes Speaker: AI in Energy: Delivering Value to Subsurface Workflows With Trust and Innovation	Guilherme Veloso (Schlumberger)
09:30-10:00 AM	Lithology prediction through convolutional neural networks and rock physics-based synthetic wells: an example from Gulf of Mexico	Felipe Ferreira de Melo (GeoSoftware), Ruth Kurian (GeoSoftware)
10:00-10:30 AM	Irreducible water saturation from Nuclear Magnetic Resonance raw data using Deep Learning	Bernardo Fraga (CBPF), Bernardo Coutinho (Petrobras), Clecio R. de Bom (CBPF)
10:30-11:30 AM	Coffe Break and Poster Session	
11:30-12:00 PM	Latent Diffusion Model Conditioned by Segmentation Maps for 2D Geological Facies Generation	Renata Nascimento (Tecgraf Institute – PUC-Rio), Gabrielle Brandenburg dos Anjos (Tecgraf Institute – PUC-Rio), Julio Nobre Lopes (Tecgraf Institute – PUC-Rio), Andressa Oishi (Petrobras), Claudio Henrique Gomes (Petrobras), Erick Talarico (Petrobras), Eugenio Pacelli (Petrobras), Maria Clara Godinho (Petrobras)
12:00-12:30 PM	Automatic Detection of Breakouts Patterns in Acoustic Image Logs Using MSRF-Net	Renata Nascimento (Tecgraf Institute – PUC-Rio), Augusto Cunha (Tecgraf Institute – PUC-Rio), Gabrielle Brandenburg dos Anjos (Tecgraf Institute – PUC-Rio), Mayara Gomes (Tecgraf Institute – PUC-Rio), Nelia Reis (Tecgraf Institute – PUC-Rio), Raquel Guilhon (Tecgraf Institute – PUC-Rio), Candida Menezes de Jesus (Petrobras)
12:30-02:00 PM	Lunch	
02:00-02:30 PM	Data Science Workflow for Well Logs Quality Control	Maria Clara Machado de Almeida Duque (Schlumberger), Tamires Pereira Pinto da Silva (Schlumberger), Francisco Alamilla Martinez (Schlumberger), Luciana Velasco Medani (Schlumberger)
02:30-03:00 PM	Deep learning as a facilitator for borehole images	Adna Vasconcelos (Schlumberger), Thiago M. D. Silva (Schlumberger), Aurelio Kasakewitch Ribeiro (Petrobras), Jorge André Braz de Souza (Petrobras)
03:00-03:30 PM	Integration of gravity and seismic data for crustal thickness modeling in South America using Gaussian processes	Ítalo Gomes Gonçalves (Federal University of Pampa), Marcus Vinicius Aparecido Gomes de Lima (Federal University of Pampa)
03:30-03:50 PM	Coffee Break	
03:50-04:20 PM	Deep Learning to Map Mass Transport Deposits: Santos Basin case study	Manuel Parcero Oliveira (Petrobras), Ana Krueger (Bluware), Antonio Henrique da Fontoura Klein (UFSC)
04:20-04:50 PM	Deep Learning Methods for Methane Detection in EMIT Hyperspectral Imagery	Reynaldo Souza de Carvalho (UNICAMP), Carlos Roberto de Souza Filho (UNICAMP)
04:50-05:20 PM	Improving velocity model building with Physics Informed Neural Networks and Fourier Neural Operators	Bernardo Fraga (CBPF), Ana Paula Muller (Petrobras), Clecio de Bom (CBPF)
05:20-06:20 PM	Keynotes Speaker: Generative IA	Yan Marim e Luiz Felipe Teixeira - AWS
06:20 PM	SBGf Happy Hour - Cachaçaria Mangue Seco	

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DAY TWO | December 4th, 2024 | Poster Session

10:30-11:30 AM

Elastic Time-Lapse Machine Learning Seismic inversion	Gilberto Corso (Federal University of Rio Grande Do Norte), Arthur Dantas da Costa (Federal University of Rio Grande Do Norte), Paulo Vinícius de Mendonça Carvalho (Federal University of Rio Grande Do Norte), Ramon C. F. Araújo (Federal University of Rio Grande Do Norte), Tiago Barros (Federal University of Rio Grande Do Norte), João M. de Araújo (Federal University of Rio Grande Do Norte)
3D Time-lapse Inversion using Machine Learning	Paulo Vinícius de Mendonça Carvalho, Arthur Dantas da Costa, Gilberto Corso, Ramon C. F. Araújo, Tiago Tavares Barros, and João M. de Araújo
Time-lapse target-oriented velocity inversion with supervised CNN networks	Pavel Karmanov, Gilberto Corso, Ramon C. F. Araújo, Tiago Tavares Barros, and João M. de Araújo
Unsupervised characterization technique based on the Correlation Integral approach for 3D seismic data interpretation	Pavel Karmanov (Indian Institute of Technology, Kharagpur), Paresh Nath Singha Roy (Indian Institute of Technology, Kharagpur), Ramakrushna Reddy (Indian Institute of Technology, Kharagpur)
Solimões Basin Onshore Brazil Igneous Intrusions Characterization Using an Interactive, Data-Centric Deep Learning Approach	Ana Krueger (Bluware), Scott Salamoff (Bluware)
Well log and core integration to predict permeability in carbonates: A methodology using machine learning	Filipe de Moura Antonio Cordeiro (Federal University of Bahia), Alexandro G. Cerqueira (Federal University of Bahia), Cícero da Paixão Pereira (Federal University of Bahia)
Advancing Seismic Data Exploration with Agentic AI Tools and LLMs	Ignacio Sánchez Gendriz (Federal University of Rio Grande Do Norte)



4th JOINT SBGf/SEG WORKSHOP ON

MACHINE LEARNING

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