



Date and Time: Wednesday, January 3, 2024 11:24:00AM EST

Job Number: 213718291

Document (1)

1. [Researchers at University of Texas Austin Have Reported New Data on Machine Learning \(A Machine-learning Workflow To Integrate High-resolution Core-based Facies Into Basin-scale Stratigraphic Models for the Wolfcamp and Third Bone Spring Sand, ...\)](#)

Client/Matter: -None-

Search Terms: "Bureau of Economic Geology"

Search Type: Natural Language

Narrowed by:

Content Type
News

Narrowed by
Timeline: Dec 01, 2023 to Dec 31, 2023

[Researchers at University of Texas Austin Have Reported New Data on Machine Learning \(A Machine-learning Workflow To Integrate High-resolution Core-based Facies Into Basin-scale Stratigraphic Models for the Wolfcamp and Third Bone Spring Sand, ...\)](#)

Information Technology Daily

December 29, 2023 Friday

Copyright 2023 NewsRx, LLC All Rights Reserved



Section: MACHINE LEARNING

Length: 663 words

Body

2023 DEC 29 (NewsRx) -- By a News Reporter-Staff News Editor at Information Technology Daily -- A new study on Machine Learning is now available. According to news reporting originating in Austin, Texas, by NewsRx journalists, research stated, "The characterization of subsurface reservoirs that are dominated by mudrock facies is hindered by the in-herent heterogeneity and high degree of spatial variability typical of mudrock depositional systems. Subsurface reservoir properties that include porosity and permeability, fluid saturations, stratigraphic thicknesses of res-ervoir units, and source rock potential are ultimately controlled by the spatial distribution of sedimentary rock facies, which supports efforts to improve subsurface characterization workflows."

Financial support for this research came from Mudrock Systems Research Laboratory (MSRL) at the [Bureau of Economic Geology](#).

The news reporters obtained a quote from the research from the University of Texas Austin, "Although core-based data provide direct measurements of rock attributes that are used to inform static reservoir models, capturing high-resolution core-based rock facies and downscaling these observations to tie to lower-resolution wireline logs remains a challenge. The effort to integrate core-based facies to reservoir-scale models is especially difficult when trying to capture thin-bedded heterogeneity that is common to mudrock systems. Herein, a workflow is developed and applied to visualize and integrate multivariate and spatially complex core-based data sets with wireline logs. Formation-specific core-based chemofacies training data sets are developed by integrating core descriptions with chemofacies clusters developed from high-resolution X-ray fluorescence core scanning. Core-based rock attribute data (e.g., XRD mineralogy, total porosity, and total organic matter content) are used to describe the chemofacies, providing a means to upscale low-resolution rock attribute measurements to high-resolution core-based chemofacies. Supervised core-based chemofacies training data sets are then used with neural network multiclass classification machine-learning tools to train triple combo wireline logs (gamma ray, deep resistivity, bulk density, and neutron porosity) to predict rock facies from wireline logs, providing a new approach to apply core-based facies classifications to wireline log studies."

According to the news reporters, the research concluded: "A basin-scale case study that applies this workflow is described for the Third Bone Spring Sand and units of the Wolfcamp Formation in the Delaware Basin of West Texas, United States."

This research has been peer-reviewed.

Researchers at University of Texas Austin Have Reported New Data on Machine Learning (A Machine-learning Workflow To Integrate High-resolution Core-based Facies....

For more information on this research see: A Machine-learning Workflow To Integrate High-resolution Core-based Facies Into Basin-scale Stratigraphic Models for the Wolfcamp and Third Bone Spring Sand, Delaware Basin. Interpretation, 2023;11(4). Interpretation can be contacted at: Soc Exploration Geophysicists - Seg, 8801 S Yale St, Tulsa, OK 74137, USA.

Our news correspondents report that additional information may be obtained by contacting Toti E. Larson, University of Texas Austin, Jackson School of Geosciences, Bur Econ Geol, Austin, TX 78712, United States. Additional authors for this research include J. Evan Sivil, Priyanka Periwal and Jesse Melick.

The direct object identifier (DOI) for that additional information is: <https://doi.org/10.1190/INT-2023-0009.1>. This DOI is a link to an online electronic document that is either free or for purchase, and can be your direct source for a journal article and its citation.

Keywords for this news article include: Austin, Texas, United States, North and Central America, Bone Research, Cyborgs, Emerging Technologies, Health and Medicine, Information Technology, Machine Learning, University of Texas Austin.

Our reports deliver fact-based news of research and discoveries from around the world. Copyright 2024, NewsRx LLC

Classification

Language: ENGLISH

Document-Type: Expanded Reporting

Publication-Type: Newsletter

Subject: MACHINE LEARNING (92%); ARTIFICIAL INTELLIGENCE (90%); GEOLOGY & GEOPHYSICS (90%); JOURNALISM (90%); COLLEGES & UNIVERSITIES (89%); NEWS REPORTING (89%); RESEARCH REPORTS (89%); NEURAL NETWORKS (79%); EXPERIMENTATION & RESEARCH (78%); CASE STUDIES (73%); PHYSICS (73%); SCIENCE & TECHNOLOGY (73%); TEACHING MATERIALS & MEDIA (73%); WRITERS (73%); Austin;State:Texas;United States;North and Central America;Bone Research;Cyborgs;Emerging Technologies;Health and Medicine;Information Technology;Machine Learning (%)

Organization: UNIVERSITY OF TEXAS (91%)

Industry: MACHINE LEARNING (92%); ARTIFICIAL INTELLIGENCE (90%); COLLEGES & UNIVERSITIES (89%); NEWS REPORTING (89%); NEURAL NETWORKS (79%); WRITERS (73%)

Geographic: AUSTIN, TX, USA (93%); TULSA, OK, USA (79%); TEXAS, USA (94%); OKLAHOMA, USA (79%); CENTRAL AMERICA (79%)

Load-Date: December 29, 2023