Machine Learning; Study Results from University of Texas Austin Provide New Insights into Machine Learning (A Comprehensive Review of Efficient Capacity Estimation for Large-scale Co2 Geological Storage)

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2024 JUL 1 (VerticalNews) -- By a News Reporter-Staff News Editor at Journal of Robotics & Machine Learning -- Investigators discuss new findings in Machine Learning. According to news reporting originating in Austin, Texas, by VerticalNews journalists, research stated, "Geological carbon storage and sequestration (GCS), a key method within carbon capture and sequestration (CCS), is globally recognized as an effective strategy to reduce atmospheric carbon dioxide (CO2) levels and combat the greenhouse effect. However, discrepancies between projected and actual storage capacities, especially in largescale CO2 storage, have raised concerns among stakeholders regarding potential overestimations."

Financial support for this research came from Gulf Coast Carbon Center at the **Bureau of Economic Geology**.

The news reporters obtained a quote from the research from the University of Texas Austin, "This paper reviews the definitions and methods used to estimate storage capacity, highlighting variations and providing a practical guide for predictions while suggesting directions for future research. We discuss numerous analytical and numerical models that account for dynamic constraints such as safety considerations, trapping mechanisms, and reservoir performance, primarily focusing on local scales. These models enhance the accuracy of capacity estimations over conventional static models by quantifying CO2 storage capacity both spatially and temporally. Additionally, this review underscores the need for sophisticated evaluations of large-scale storage. We introduce two pivotal tools designed for basin-scale capacity estimation and discuss the challenges associated with expanding dynamic capacity assessments to larger scales."

According to the news reporters, the research concluded: "The paper explores the burgeoning use of machine learning-based models, advocating for future research efforts to leverage machine learning in developing integrated tools that offer more comprehensive and precise capacity estimations for GCS."

This research has been peer-reviewed.

For more information on this research see: A Comprehensive Review of Efficient Capacity Estimation for Large-scale Co2 Geological Storage. Gas Science and Engineering, 2024;126. Gas Science and Engineering can be contacted at: Elsevier, Radarweg 29, 1043 Nx Amsterdam, Netherlands.

Our news correspondents report that additional information may be obtained by contacting Jianqiao Leng, University of Texas Austin, Bur Econ Geol, 10611 Explorat Way, Austin, TX 78758, United States. Additional authors for this research include Alex Bump, Seyyed A. Hosseini, Timothy A. Meckel, Zhicheng Wang and Hongsheng Wang.

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

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