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): Machine Learning
Robotics & Machine Learning Daily News
Jun 30 • 11:00 PM
wordcount
439

2024 JUL 01-- By a News Reporter-Staff News Editor at Robotics& Machine Learning Daily News Daily News-- Investigators discuss new findings in Machine Learning. 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...

2024 JUL 01 (NewsRx) -- By a News Reporter-Staff News Editor at Robotics & Machine Learning Daily News Daily News -- Investigators discuss new findings in Machine Learning. According to news reporting originating in Austin, Texas, by NewsRx 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.

The direct object identifier (DOI) for that additional information is: https://doi.org/10.1016/j.jgsce.2024.205339. 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.

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