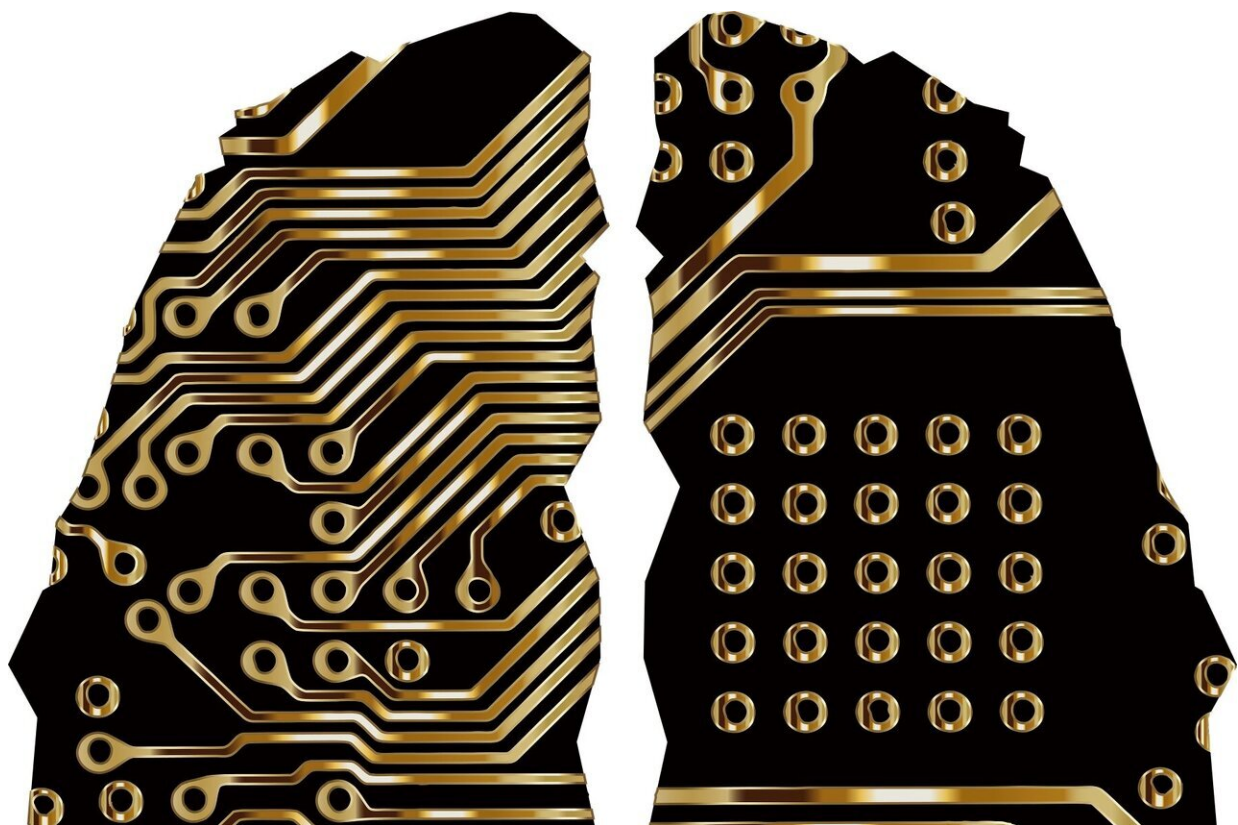


New study will help sharpen accuracy for climate-change models and weather prediction

June 2 2022, by Matt Lakin



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A study led by Oak Ridge National Laboratory researchers promises to help sharpen accuracy for climate-change models and enable more

reliable predictions of extreme weather.

The team's results outline an invertible neural network, a type of [artificial intelligence](#) that mimics the [human brain](#), to improve [calibration](#) for models that attempt to predict the pace and results of climate change based on existing climate data. Tests found the network improved models' accuracy and consistency at a speed as much as 30 times faster than other methods.

"This network holds the potential to fundamentally change how we approach calibration and simulation in traditional Earth-system modeling," said ORNL's Dan Lu, the study's lead author. "The network is efficient enough to solve problems within seconds after being trained and thus can be used to make quick, accurate predictions in scenarios that require a rapid response."

The model will be regularly updated to ensure further improvements.

More information: Dan Lu et al, [An interpretable machine learning model for advancing terrestrial ecosystem predictions \(2022\)](#)

Provided by Oak Ridge National Laboratory

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