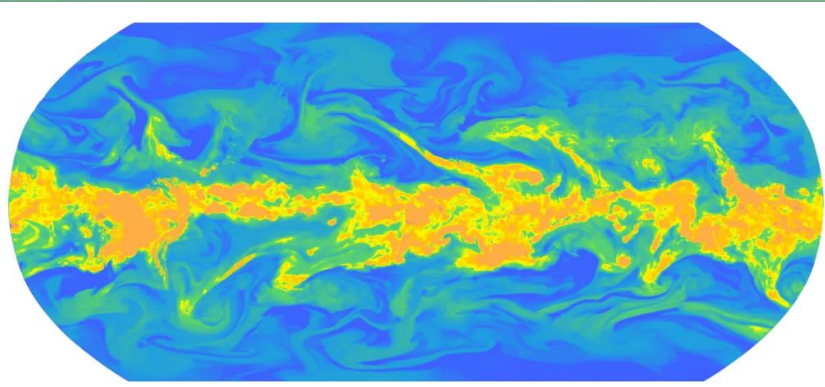


I, For One, Welcome our
New AI Overlords!



I, For One, Welcome our New AI Overlords!

Jared Rennie: Research Meteorologist, Asheville, NC



Gemini

GOES-16 Hurricane Helene GeoColor

- An exceptionally large wind and cloud field, with outer rainbands already sweeping across the entire Florida peninsula and into Georgia and the Carolinas.
- Deep convective "bursting" near the center, indicating the rapid intensification that would bring it to Category 4 status later that evening.

Python Code to Generate the GeoColor Image

You can use the following code in a local environment (with `boto3`, `netCDF4`, `numpy`, and `matplotlib` installed) to download and plot the specific file from that morning.

```
Python
```

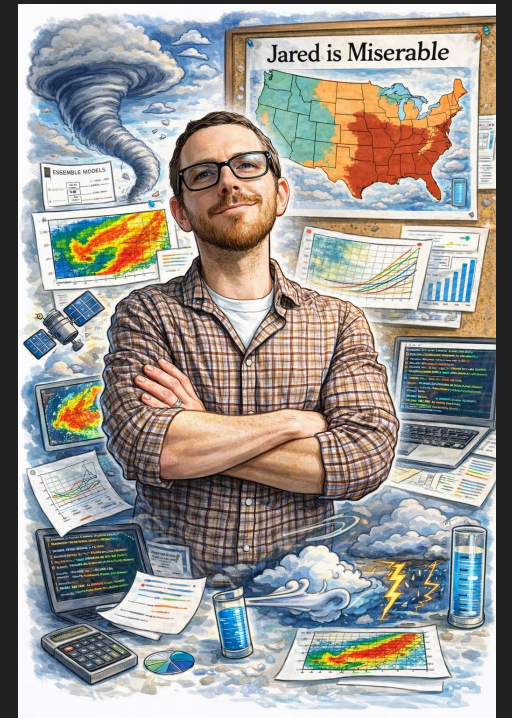
```
import boto3
import numpy as np
import matplotlib.pyplot as plt
import netCDF4
from botocore import UNSIGNED
from botocore.config import Config

# 1. Setup S3 client for anonymous access to NOAA Open Data
```

Enter a prompt for Gemini

Tools

**I, FOR ONE, WELCOME
OUR NEW AI OVERLORDS**



Jared Rennie: Research Meteorologist, Asheville, NC

What is AI Exactly?

Merriam-Webster Est. 1828

Dictionary Thesaurus artificial intelligence Chatbot Games Word of the Day Grammar Word Finder Slang Newsletters ^{NEW} Wordplay More

Close deals your competitors can't Outreach Get a demo

Dictionary

Definition

Example Sentences
Word History
Rhymes
Entries Near
Related Articles
Show More

Save Word

artificial intelligence noun

1 : the capability of computer systems or algorithms to imitate intelligent human behavior

... helped pioneer the idea that computers can exhibit *artificial intelligence* that mirrors human thinking.
– Richard Sandomir

A Monmouth University poll ... found that only 9 percent of Americans believed that computers with *artificial intelligence* would do more good than harm to society.
– Shira Ovide

Artificial intelligence applications are already used behind the scenes in hospitals to automate workforce tasks, improve patient flow, for operating room scheduling and elsewhere to improve efficiency.
– Liz Freeman

also, plural **artificial intelligences** : a computer, computer system, or set of algorithms having this capability

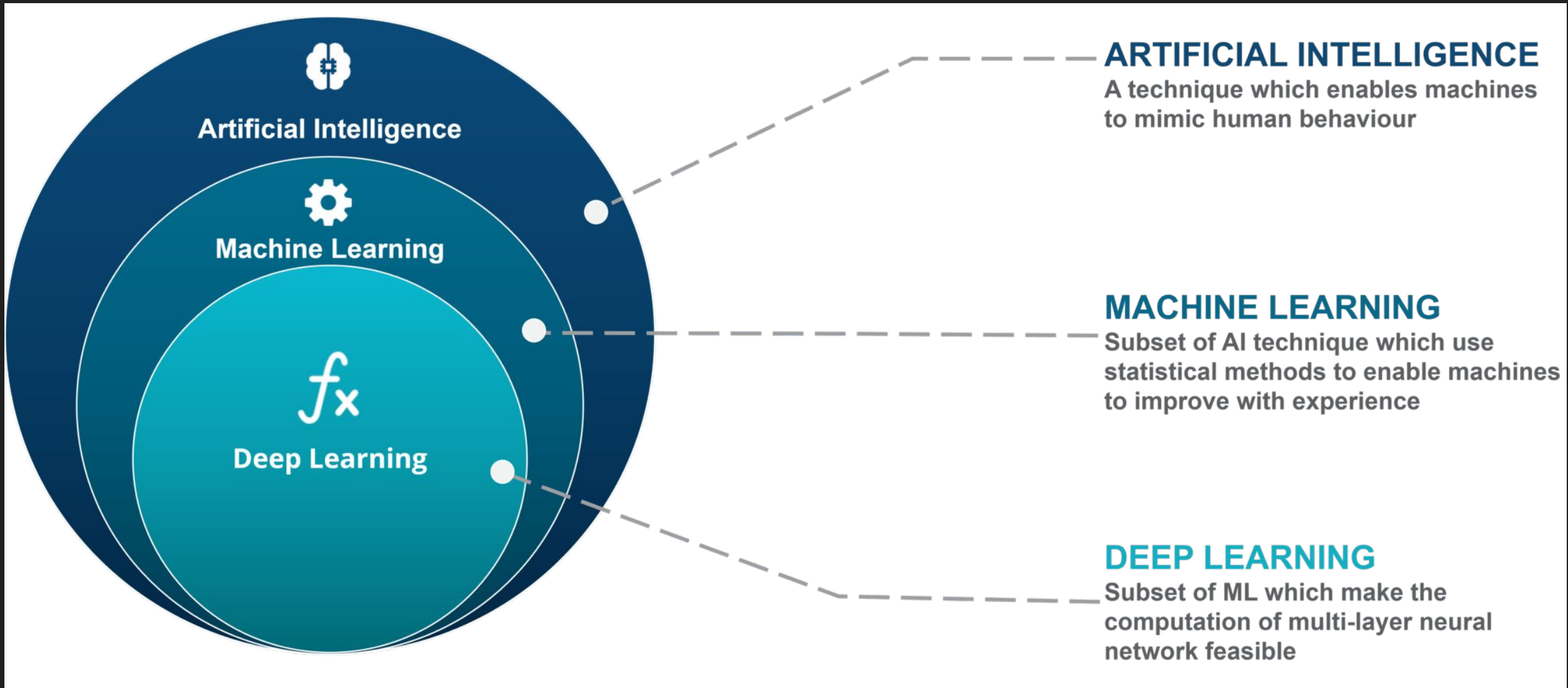
Someday, our *artificial intelligences* will be capable enough to pass for human.
– Benjamin C. Kinney

... they are now eager to create *artificial intelligences* that can mediate human life at every level.
– Edward Ongweso Jr.

Red Bull Sugar-Free Energy Drink \$46.99 \$64.99 prime

Merriam-Webster Top Lookups

What is AI Exactly?



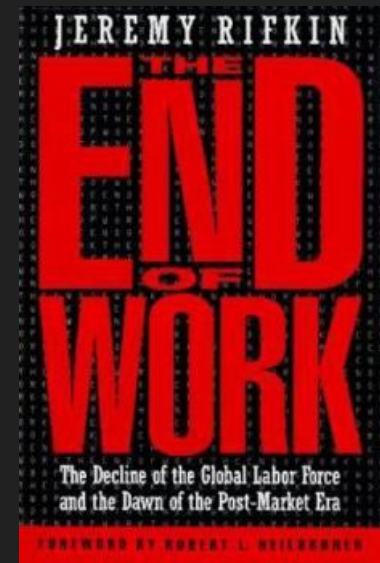
There are Concerns!

"[It] will eliminate tens of millions of jobs in the coming years."

— Jeremy Rifkin

Published in 1995

<https://www.abebooks.com/first-edition/End-Work-Divide-Global-Labor-Force/18269272358/bd>




There are Concerns!

“The forests of monolithic computer servers that comprise today’s data centers... come at a steep cost in energy usage.”

—Scientific American

Published September 19th, 2007

<https://www.scientificamerican.com/article/for-data-centers-informat/>



SCI AM NEW MATH NEWSLETTER: PROOF POSITIVE. SIGN UP HERE!

September 19, 2007 | 3 min read Add SciAm ⓘ

For Data Centers, Information Growth Is Not Cool

The Feds and private companies cut a deal to reduce data center energy use by 2011

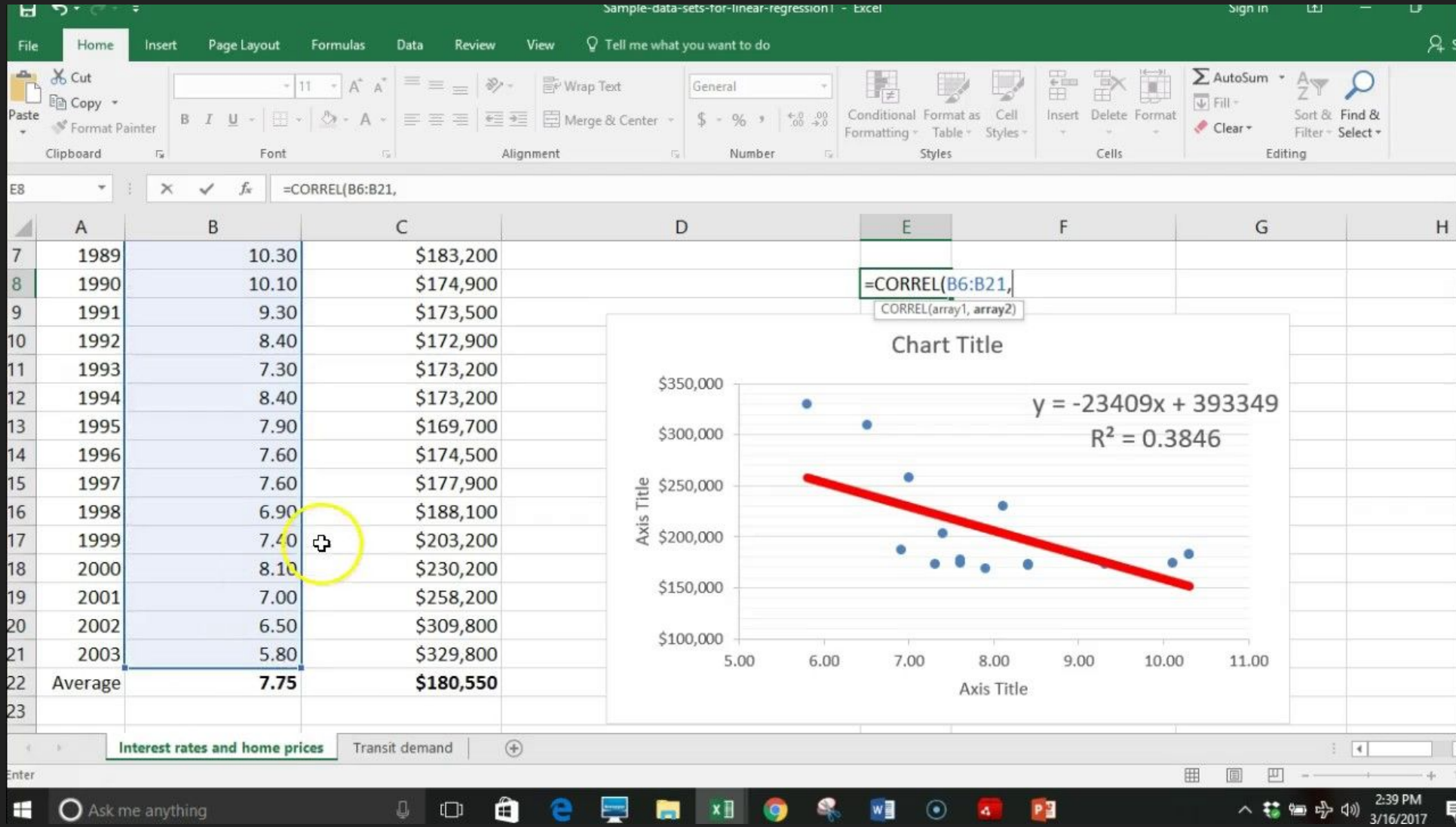
BY LARRY GREENEMEIER

The Sciences ▾

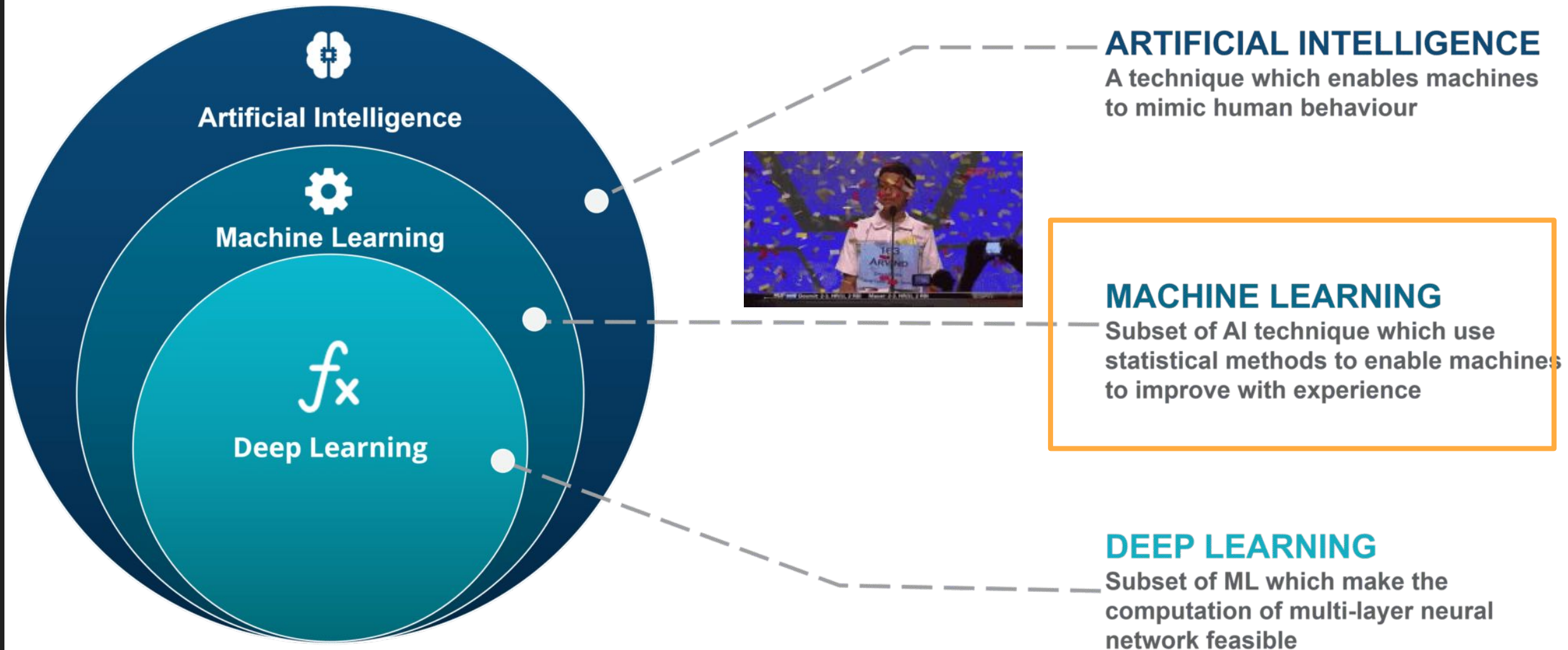
I WORK AT A DATA CENTER!



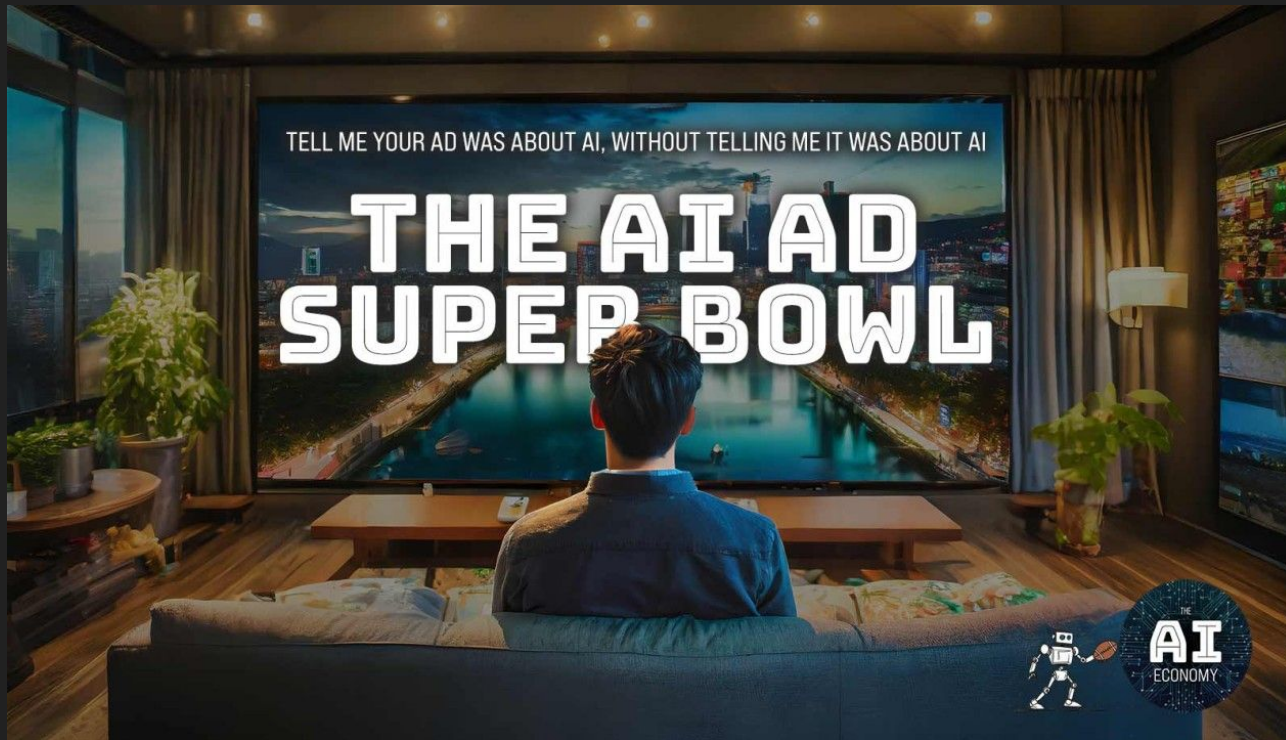
AI is not a New Concept



AI is not a New Concept



There Are Concerns! (Private Sector)



BUSINESS INSIDER

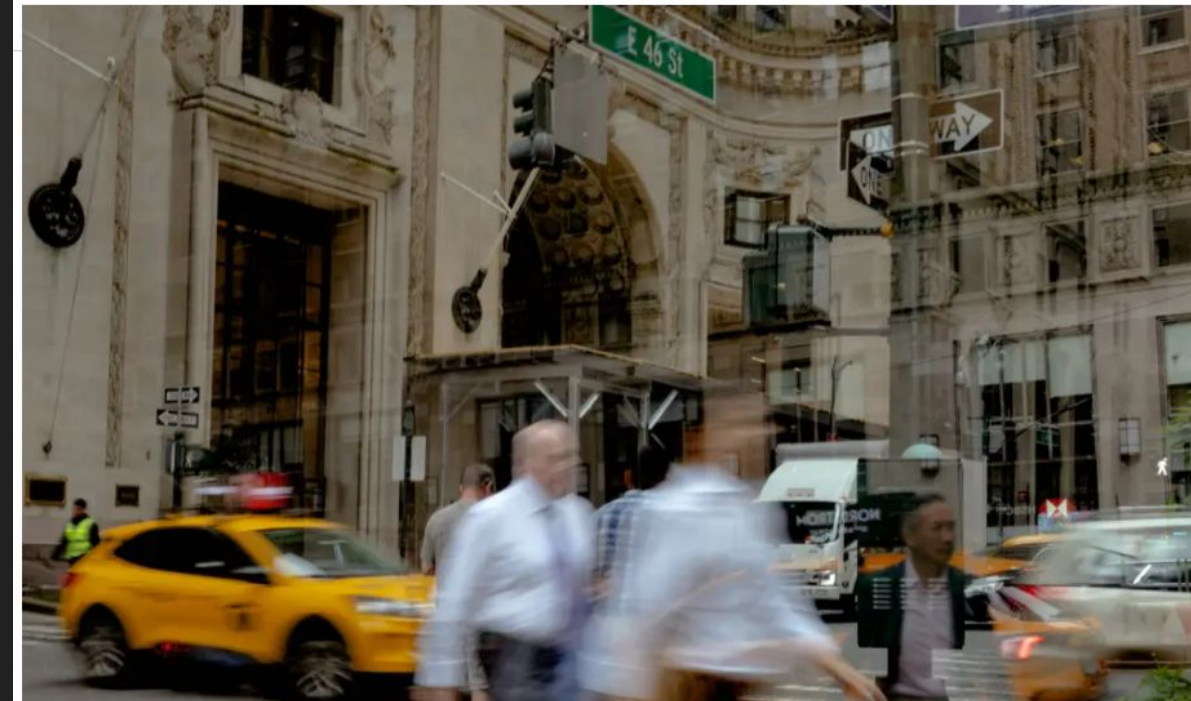
Subscribe

DAQ ▲ +0.45% S&P 500 ▲ +0.28% AAPL ▲ +0.62% NVDA ▲ +1.39% MSFT ▼ -0.88% AMZN ▲ +0.26% META ▲ +1.31% TSLA ▲ +0.67%

CAREERS

Despite concerns of a bubble, CEOs say they are spending big on AI this year

By [Tim Paradis](#) [+ Follow](#)



There Are Concerns! (Broadcast Sector)

Amy Freeze AI
8.03K subscribers

Subscribe

Mild Skies Over Chi...

Watch later Share

Des Moines Chicago Peoria Fort Wayne Indianapolis Columbus Louisville Charleston Bowling Green

Kansas City Springfield St. Louis

194956

MORE VIDEOS

AMY FREEZE AI

0:31 / 4:01

CC Settings YouTube

This is a YouTube video player interface. On the left, a woman in a purple dress (Amy Freeze AI) is shown. The main area displays a weather radar map of the United States with various cities labeled. A 'Subscribe' button is visible. The video title is partially visible as 'Mild Skies Over Chi...'. The video progress bar shows 0:31 / 4:01.

RYAN HALL, Y'ALL

NATIONAL RADAR 10:19 AM ET

Currently viewing: United States

RYAN HALL, Y'ALL
Happy birthday, Yallobot!

This graphic features a large image of a field with a storm cloud. On the right, there is a 'NATIONAL RADAR' map of the United States with a color-coded legend for rain, mixed, and snow. A small robot character is in the bottom right corner. A text box at the bottom reads 'RYAN HALL, Y'ALL Happy birthday, Yallobot!'.

There Are Concerns! (Academic Sector)

HIGHER EDUCATION

Everyone Is Cheating Their Way Through College

ChatGPT has unraveled the entire academic project.



By James D. Walsh, *Intelligencer* features writer

MAY 7, 2025

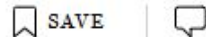


Illustration: New York Magazine

This article was featured in One Great Story, New York's reading recommendation newsletter. [Sign up here](#) to get it nightly.

Chungin “Roy” Lee stepped onto Columbia University’s campus this past fall and, by his own admission, proceeded to use generative artificial intelligence to cheat on nearly every assignment. As a computer-science major, he depended on AI for his introductory programming classes: “I’d just dump the prompt into ChatGPT and hand in whatever it spat out.” By his rough math, AI wrote 80 percent of every essay he turned in. “At the end, I’d put on the finishing touches. I’d just insert 20



AXIOS

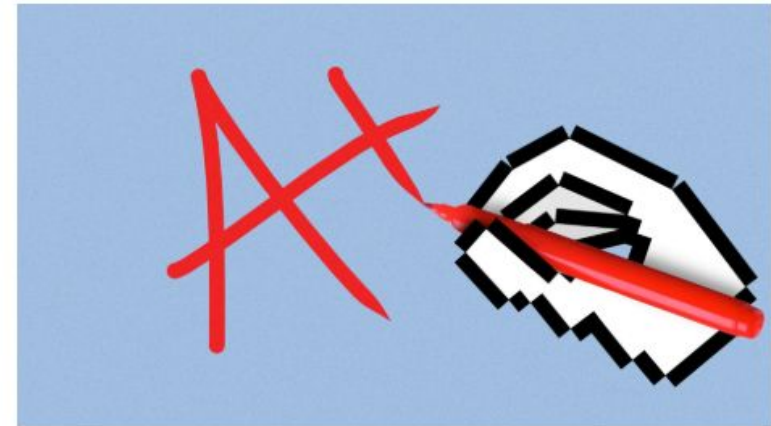


Illustration: Aida Amer/Axios

A new tool called Writable, which uses ChatGPT to help grade student writing assignments, is being offered widely to [teachers](#) in grades 3-12.

Why it matters: Teachers have quietly [used ChatGPT](#) to grade papers since it first came out — but now [schools](#) are sanctioning and encouraging its use.

Driving the news: Writable, which is [billed](#) as a time-saving tool for teachers, was [purchased](#) last month by

There Are Concerns! (Academic Sector)



				<p>level. These findings support an impact-based probabilistic framework for landslide awareness, where low probabilities of exceedance (e.g., 10–30% chance of exceeding 5") are treated as meaningful indicators for "reasonable worst-case" situational awareness, analogous to probabilistic messaging approaches used for other flood-related hazards such as river flooding and storm surge.</p>
Jared Rennie	NOAA National Centers for Environmental Information	I, For One, Welcome Our AI Overlords		<p>Artificial intelligence and machine learning are not new concepts, but in recent years they have become deeply embedded in both our personal and professional lives. As a result, many in the weather, water, and climate enterprise are now expected to integrate these technologies into their daily work—often without a clear understanding of how AI meaningfully applies to their mission. While concerns around AI adoption are valid, these tools also offer unprecedented opportunities to increase efficiency and distill the complex equations of the atmosphere into more accessible insights. Our field is uniquely positioned to take advantage of AI's capabilities: vast historical and real-time datasets from NOAA and other repositories provide an invaluable foundation for experimentation, model development, and improved environmental understanding. Some recent successes include weather prediction using ECMWF's Artificial Intelligence/Integrated Forecasting System (AIFS) and Google DeepMind, building a large language model to interpret climate data from xmACIS and using OpenAI to help draft this abstract. This presentation will take a measured look at the current landscape of AI in the environmental sciences—examining how we got here, the challenges we face, and the ways we can responsibly adapt and evolve in the years ahead.</p>

There Are Concerns! (Federal Sector)

MAXIMUM OBSERVED WINDS (SO FAR)

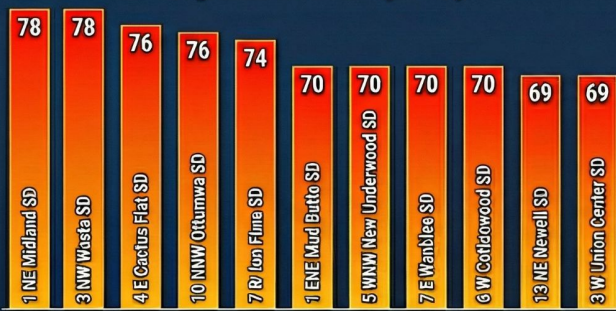
Western South Dakota & Northeast Wyoming - Nov 24-25, 2025



WIND REPORT LEADERBOARD

LOCATION	MAX WIND (MPH)	TIME/DATE
1 NE Midland SD	78	7:12 AM 11/25/2025
3 NW Wasta SD	78	5:33 AM 11/25/2025
4 E Cactus Flat SD	76	5:23 AM 11/25/2025
10 NNW Ottumwa SD	75	6:54 AM 11/25/2025
1 ENE Mud Butte SD	74	4:56 AM 11/25/2025
5 WNW New Underwood SD	70	6:19 AM 11/25/2025
7 E Wanblee SD	70	5:49 AM 11/25/2025
6 W Cottonwood SD	70	5:19 AM 11/25/2025
13 NE Newell SD	69	4:44 AM 11/25/2025
3 W Union Center SD	69	5:36 AM 11/25/2025

Top Wind Gusts (MPH)

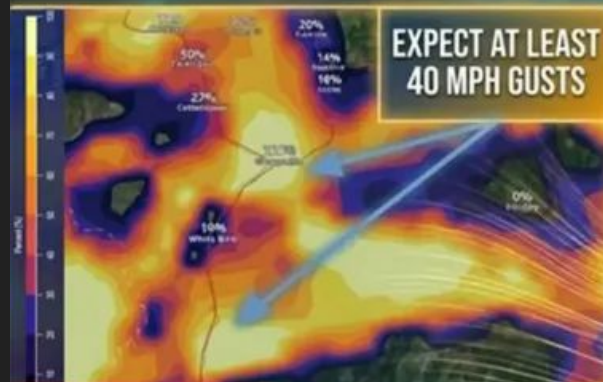


Other Notable Gusts (60+ MPH)

- Rapid City Arprt SD (68 MPH)
- Howes SD (68 MPH)
- 1 E Dwtm Rapid City SD (67 MPH)
- 1 NE Echeta WY (64 MPH)
- 5 NNW Dwtm Gillette WY (62 MPH)
- 1 W Box Elder SD (60 MPH)
- 7 E Wanblee SD (60 MPH)
- W Hontstowm SD (60 MPH)
- W Rockwood SD (69 MPH)
- W Cattus Flat SD (60 MPH)

Preliminary Data. Source: NWS / Local Observations. Times are Local.

GUSTY SOUTH WINDS TONIGHT (Camas Prairie, ID)



IMPACTS:



Blowing debris at Outdoor Activities



Hazardous Crosswinds for High Profile Vehicles

AI-GENERATED

There Are Concerns! (F



Search NOAA sites



Home / News & Features

NOAA deploys new generation of AI-driven global weather models

Focus areas: Weather

Topics: modeling, forecasts, artificial intelligence or AI, weather

Share:

UPDATED: February 17, 2026. An expert Q&A about the role of AI in NOAA hurricane forecasting was added at conclusion of news release.

December 17, 2025



WeatherNext 2: Our most advanced weather forecasting model

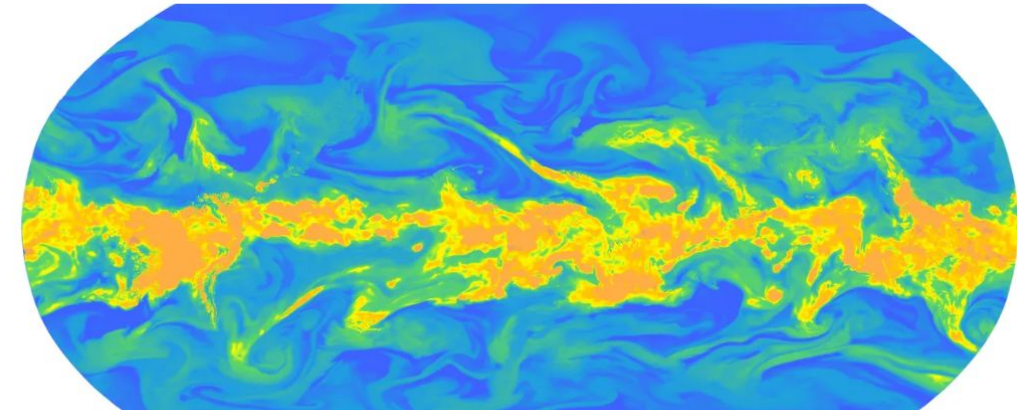
Nov 17, 2025
4 min read

The new AI model delivers more efficient, more accurate and higher-resolution global weather predictions.

The WeatherNext team

Read AI-generated summary

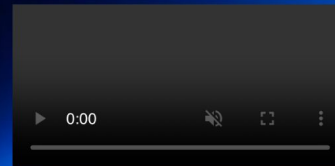
Share



About | Impacts | News and Media | Fire Weather | Research



New upgrades to HRRR-Cast: the experimental AI-powered regional model



There Are Concerns! (Federal Sector)



The image is a screenshot of a news article from CBS News. At the top left is a grid icon, and at the top right is the CBS NEWS logo. Below the logo is a navigation bar with links for U.S., Iran Latest, Hospice Fraud, World, Politics, HealthWatch, and MoneyV. The article is categorized under Politics. The main headline reads "Hundreds of NOAA employees laid off in latest cuts to federal workforce". The byline is "By Jordan Freiman, Tracy J. Wholf". The update information is "Updated on: February 28, 2025 / 12:51 PM EST / CBS News". There is a button that says "Add CBS News on Google". The first paragraph of the article text is visible at the bottom of the screenshot.

 **CBS NEWS**

[U.S.](#) [Iran Latest](#) [Hospice Fraud](#) [World](#) [Politics](#) [HealthWatch](#) [MoneyV](#)

[Politics](#)

Hundreds of NOAA employees laid off in latest cuts to federal workforce

By [Jordan Freiman](#), [Tracy J. Wholf](#)

Updated on: February 28, 2025 / 12:51 PM EST / CBS News

 Add CBS News on Google

Hundreds of staffers at the National Oceanic and Atmospheric Administration, or NOAA, were laid off Thursday as the Trump administration and its newly-created [Department of Government Efficiency](#), or [DOGE](#), continue slashing the federal workforce.

A close-up, profile shot of two men in a dark setting. The man on the right is speaking to the man on the left. The lighting is dramatic, highlighting their faces against the dark background.

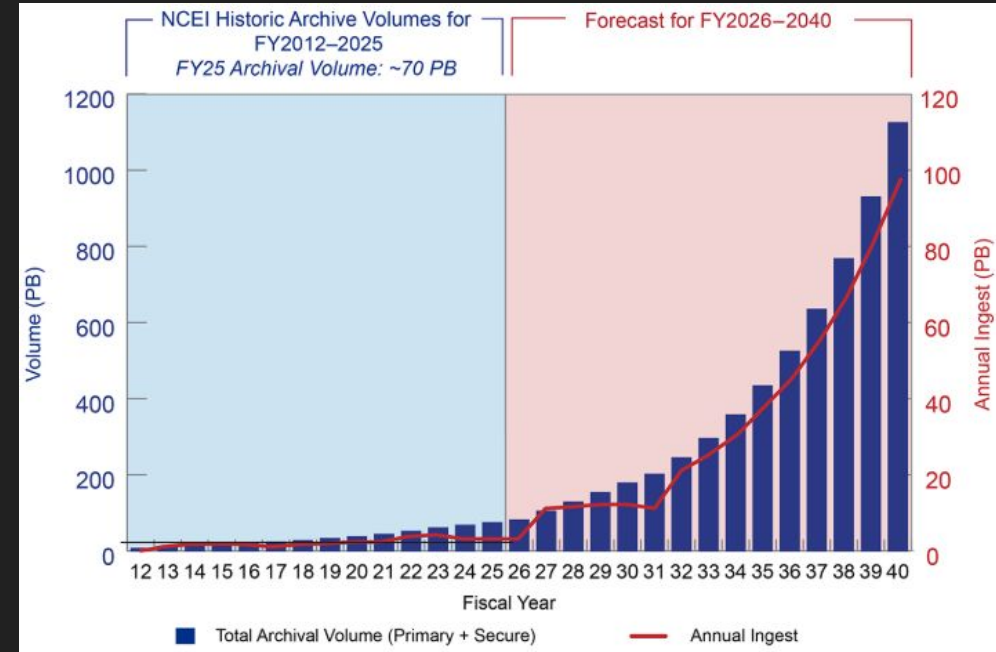
**DUDE, YOU'RE DOING A
TERRIBLE JOB**



What's My Point?

- AI Is A Tool
- It is not going away
- How can you harness it?

We have a lot of data!



Our Website Sucks!

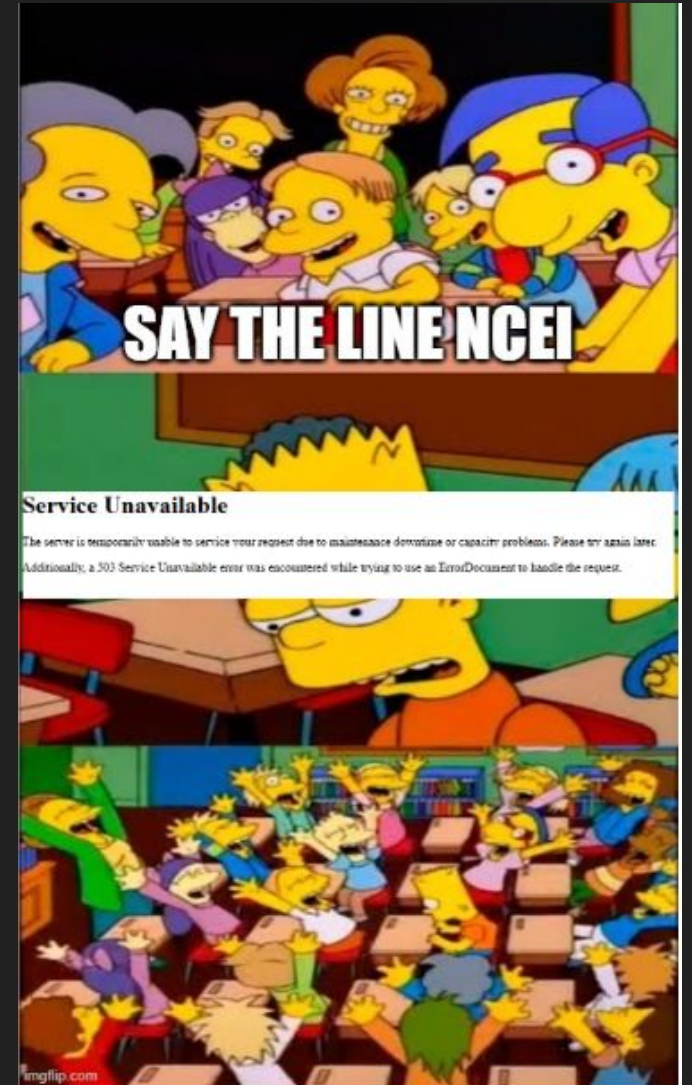
Browse by Category, Parameter, or Instrument/Method

Category



Apply

- Arctic, Antarctic, and Polar Data
- Climate Data Records
- Climate Monitoring
- Coastal Monitoring and Indicators
- Geomagnetism
- Gulf of America
- Marine Biology
- Marine Geology and Geophysics
- Natural Hazards
- Ocean Acoustics
- Ocean Chemistry
- Ocean Climate Laboratory
- Ocean Exploration
- Ocean Physics
- Paleoclimatology
- Radar Meteorology
- Regional Ocean Climatologies
- Satellite Meteorology
- Satellite Oceanography
- Severe Weather
- Space Weather
- Spanish Language News Stories
- Surface Weather Observations
- Upper Air Observations
- Weather and Climate Models



We have a center for AI




National Oceanic and Atmospheric
Administration
U.S. Department of Commerce

Search NOAA sites



Home

A collage of images representing AI, oceanography, and nature. It includes a satellite in space, a map of the United States, a sea turtle, and a glowing blue brain with circuitry.

NOAA Center for Artificial Intelligence (NCAI)

<https://www.noaa.gov/ai>

NCEI Uses AI As a Tool Code Assist

Code Cleanup and Refactoring

can you clean up this code for me, and include headers and appropriate documentation?

```
# Written by Jared Rennie, NOAA NCEI
...
```

◆ This is a solid script for meteorological data visualization. To "clean it up," I've focused on **modularity**, **PEP 8 compliance**, and **efficiency**.

Key changes made:

- **Vectorization:** Removed the manual counter for a cleaner `sum()` approach where possible (though kept the loop for memory efficiency with large Zarr files).
- **Constants & Config:** Moved hardcoded paths and bounds to the top for easy editing.
- **String Formatting:** Replaced old-style `%` formatting with modern **f-strings**.
- **Error Handling:** Added a basic check for file existence/loading.
- **Refactoring:** Grouped plotting logic to make it more readable.

Python

```
#!/usr/bin/env python3
```

Enter a prompt for Gemini

+ Tools

Fast



GOES-16 Hurricane Helene GeoColor

matplotlib installed) to download and plot the specific file from that morning.

Python

```
import boto3
import numpy as np
import matplotlib.pyplot as plt
import netCDF4
from botocore import UNSIGNED
from botocore.config import Config

# 1. Setup S3 client for anonymous access to NOAA Open Data
s3 = boto3.client('s3', config=Config(signature_version=UNSIGNED))
bucket = 'noaa-goes16'

# September 26, 2024 is Day of Year 270.
# We'll look for a file around 14:00 UTC (10:00 AM EDT).
prefix = 'ABI-L2-MCMIPC/2024/270/14/'

# 2. List and select the first file in the 14:00 UTC hour
response = s3.list_objects_v2(Bucket=bucket, Prefix=prefix)
file_key = response['Contents'][0]['Key']
local_file = 'goes16_helene.nc'

print(f"Downloading {file_key}...")
s3.download_file(bucket, file_key, local_file)

# 3. Open and process the data
nc = netCDF4.Dataset(local_file)
R = nc.variables['CMI_C02'][:] # Red (Band 2)
```

Enter a prompt for Gemini

Tools

Fast



NCEI Uses AI As a Tool Code Assist

The screenshot displays a Visual Studio Code workspace titled "Workshop". The Explorer panel on the left shows a directory structure for "WORKSHOP" containing various HRRRCast dewpoint files (e.g., hrrrcast_dewpoint_20260324_01z_m00_f00.png) and utility scripts like make_gif.py and plot_hrrrcast_dewpoint.py. The main editor window shows the Python script plot_hrrrcast_dewpoint.py with the following code:

```
def download_dewpoint(date, cycle, fhr, member=0):  
    """Download only the DPT (dewpoint) message via  
    base = f"HRRRCast/{date}/{cycle}/hrrrcast.m{memb  
    idx_url = f"{BUCKET}/{base}.f{fhr:02d}.idx"  
    grb_url = f"{BUCKET}/{base}.f{fhr:02d}"  
  
    # Parse idx to find byte range for DPT:2 m above  
    with urllib.request.urlopen(idx_url) as r:  
        idx_lines = r.read().decode().strip().split("  
  
    start = end = None  
    for i, line in enumerate(idx_lines):  
        if ":DPT:2 m above ground:" in line:  
            start = int(line.split(":")[1])  
            if i + 1 < len(idx_lines):  
                end = int(idx_lines[i + 1].split(":")  
                break  
  
    if start is None:  
        raise ValueError("DPT field not found in ind  
  
    # Range request for just the dewpoint message  
    req = urllib.request.Request(grb_url)  
    range_hdr = f"bytes={start}-" if end is None els  
    req.add_header("Range", range_hdr)
```

The right-hand editor window displays a map titled "HRRRCast Member 00 - 2-m Dewpoint (°F) Run: 20260324 01Z + F00". The map shows a color-coded representation of dewpoint temperatures across the United States, with a color scale at the bottom ranging from -15 to 75 degrees Fahrenheit. The map shows higher dewpoint values (red/orange) in the eastern and southern regions, and lower values (green) in the western and northern regions.

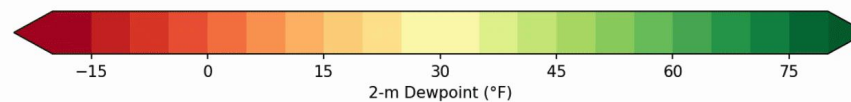
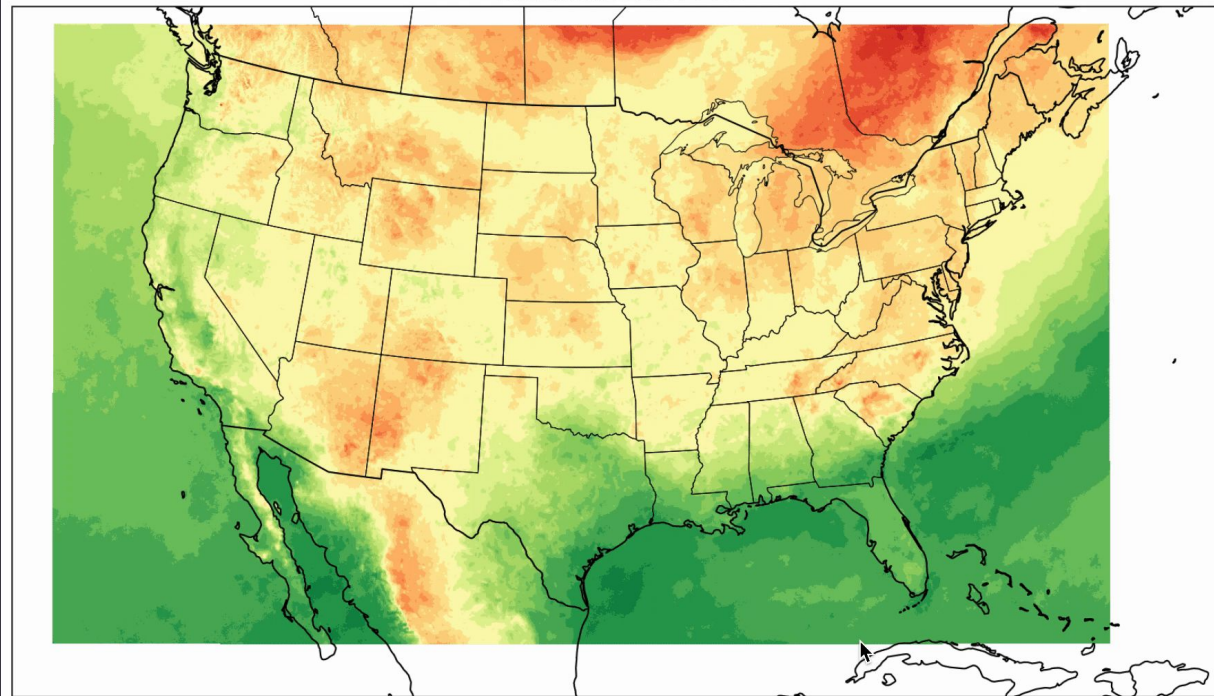
The bottom panel of the workspace shows the TERMINAL output, which includes instructions for opening a browser at <http://localhost:8000> and displaying the generated GIFs. The terminal also shows the command prompt and the output of the script, including the credits and time taken: "Credits: 0.99 • Time: 47s".

NCEI Uses AI As a Tool Code Assist

HRRRCast 2-m Dewpoint

20260324 01Z — Member M00

HRRRCast Member 00 — 2-m Dewpoint (°F)
Run: 20260324 01Z + F04



NCEI Uses AI As a Tool Product Documentation



AI Knowledge Base

brought to you by



Type your message to the NCICS AIK Assistant here...



Good morning. Can you help me understand what the OISST algorithm does? I'm not a scientist, I would like a basic explanation of how it works in 500 words or less. Thank you!



Understanding the OISST Algorithm: A Basic Explanation

The Optimum Interpolation Sea Surface Temperature (OISST) algorithm is a method for creating a complete, gap-free map of global sea surface temperatures on a daily basis. Here's how it works in simple terms:

What OISST Does

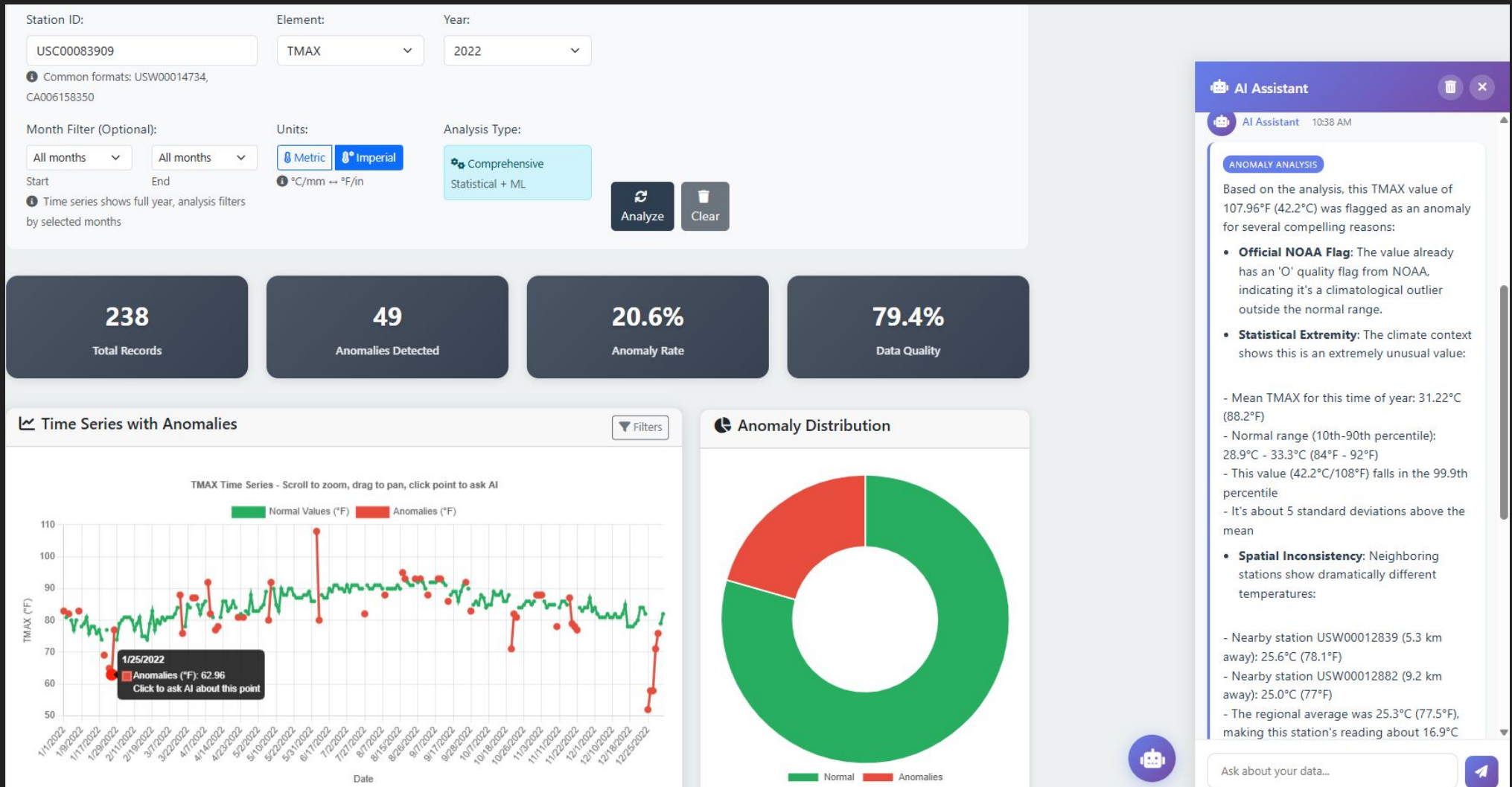
OISST combines different types of sea surface temperature (SST) measurements into a single, consistent dataset. Think of it as creating a complete "picture" of ocean temperatures across the entire globe when you only have scattered "puzzle pieces" of data.

The Data Sources

OISST uses three main types of data:

1. **Satellite measurements:** Primarily from AVHRR (Advanced Very High Resolution Radiometer) instruments on weather satellites, which can "see" the ocean's surface temperature from space
2. **In-situ measurements:** Direct temperature readings from ships and buoys floating in the ocean
3. **Sea ice data:** Information about where sea ice exists, which helps estimate temperatures in polar regions

NCEI Uses AI As a Tool QA/QC with ADDIS



NCEI Uses AI As a Tool xmACIS-Style Chatbot

GHCN WebGL Viewer

End Date: February 24, 2026

Analysis Days: 1 | Statistic: Sum

Element: SNOW (Snowfall) | Units: Imperial / US

Run Spatial Analysis

Ready. Time: 0.7s | Reqs: 0

Snowfall (in) legend: 0, 1.4, 2.8+

Mapping Overlay: None | 7 periods

PROVIDENCE (USW00014765) - SNOW
POR: 1948-01-01 to 2025-02-06 | Completeness: 95.2%
Daily MAX

Gemini 3.1 Assistant

AI Engine: Defaulting to local built-in AI (Gemini Nano). For higher quality or full historical processing, paste a Gemini API Key:

.....

can you give me the top 10 snowiest days?

Based on the dataset provided, here are the top 10 snowiest days:

- **1961-02-04**: 46.5 inches
- **2022-01-29**: 47.8 inches
- **1996-01-08**: 48.3 inches
- **2015-01-27**: 40.6 inches
- **1969-02-24**: 36.1 inches
- **2009-12-20**: 36.3 inches
- **2018-01-04**: 35.8 inches
- **1956-03-19**: 37.3 inches
- **2003-02-17**: 37.3 inches
- **2011-01-12**: 31.0 inches

Wettest day? Total accumulation per year?
Longest dry spell? Record event?

Ask a question about the data...

Time-series chart showing Snowfall (in) from 1960 to 2025.

NCEI Uses AI As a Tool Storm Events Chatbot

StormDB Studio

● Engine Ready

GEMINI API KEY
..... Save

DATASET SCHEMA

BEGIN_YEARMONTH	BIGINT
BEGIN_DAY	BIGINT
BEGIN_TIME	VARCHAR
END_YEARMONTH	BIGINT
END_DAY	BIGINT
END_TIME	VARCHAR
EPISODE_ID	BIGINT
EVENT_ID	BIGINT
STATE	VARCHAR
STATE_FIPS	BIGINT
YEAR	BIGINT
MONTH_NAME	VARCHAR
EVENT_TYPE	VARCHAR
CZ_TYPE	VARCHAR
CZ_FIPS	BIGINT
CZ_NAME	VARCHAR
WFO	VARCHAR
BEGIN_DATE_TIME	TIMESTAMP

Welcome! Set your API key in the sidebar. Ask me for aggregated data (e.g., "Top 5 states by damage") to see dynamic charts!

Are you able to show me the storm information that occurred in Alabama on April 27th 2011?

```
SELECT * FROM storms WHERE STATE = 'ALABAMA' AND YEAR = 2011 AND MONTH_NAME = 'April' AND BEGIN_DAY = 27 LIMIT 100;
```

BEGIN_YEARMONTH	ATE	STATE_FIPS	YEAR	MONTH_NAME	EVENT_TYPE	CZ_TYPE	CZ_FIPS	CZ_NAME
201104	ABAMA	1	2011	April	Tornado	C	49	DEKALB
201104	ABAMA	1	2011	April	Tornado	C	49	DEKALB

E.g., Which 5 states had the most property damage? Send

There are Concerns!

"The world does not need another social media nitwit telling people how to think..."

—James Spann

There are Concerns!.....but

"The world does not need another social media nitwit telling people how to think..."

—James Spann

"On Twitter people want information right now.. If you don't provide information that people want, **they'll go somewhere else.**"

—James Spann



James Spann

333.7K posts



ALABAMA
WEATHER NETWORK



Following

James Spann

@spann Follows you

AMS Certified Broadcast Meteorologist. WeatherBrains host. Instagram: spannwx

Science & Technology The Deep South alabamawx.com

Born June 6 Joined June 2008 >

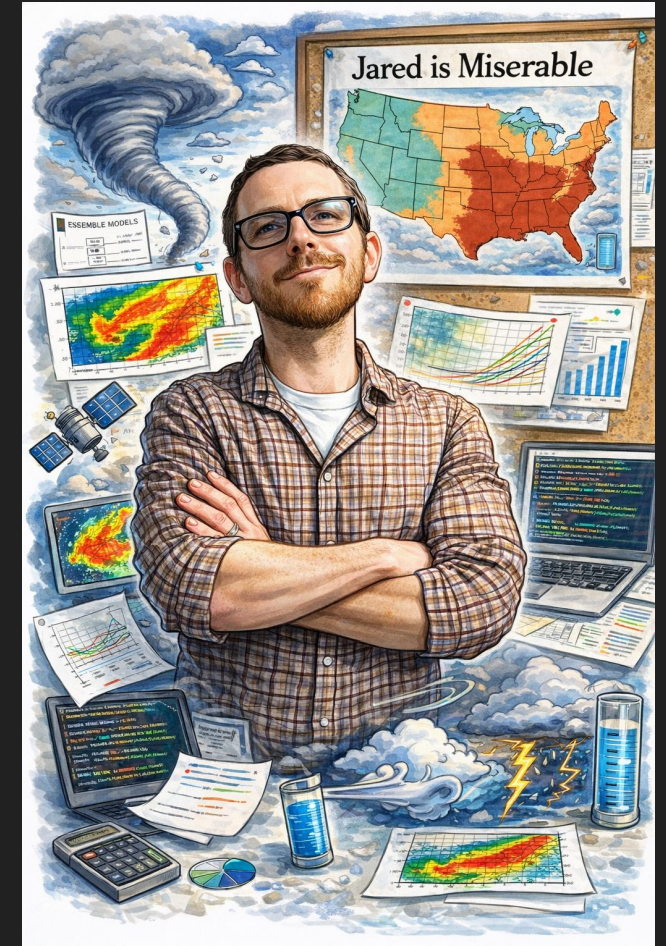
48.4K Following **552.5K** Followers



Followed by Arkansas Weather Network, Meteorologist Austin Stance, and 998 others you follow

Thank You!

- AI Is A Tool
- It is not going away
- How can you harness it?



“Don’t waste your time or time will waste you”

Jared Rennie: Research Meteorologist, Asheville, NC