

The background of the slide features several thin, light blue wavy lines that flow from the left side towards the right, creating a sense of movement and depth.

# **NASA Space Apps Challenge 2025 - WeatherPreview Project**

Reporter: Space Wandering

# Problem We Solve

Every day, people wonder: “Should I go to the concert? hike? parade?”

But weather forecasts are often:

## Too complex

raw numbers like  
“0.004 kg/m<sup>2</sup>/s” mean  
little to most users.

## Too slow

retrieving large datasets  
for multiple cities is  
time-consuming.

## Too technical

Forecast data is stored in  
scientific formats like  
GRIB files, and stored in  
locations that normal  
user don't know.

# Our Solution

WeatherPreview transforms raw meteorological data into intuitive, interactive visuals that help people decide — “Go or stay?” — in seconds.

We built a visual decision system combining:

Global Forecast System (GFS)

trusted, high-resolution global predictions.

Smart animation layers

we translate numbers (rain, wind, temperature) into smooth, color-coded animations that feel like weather, not stats.

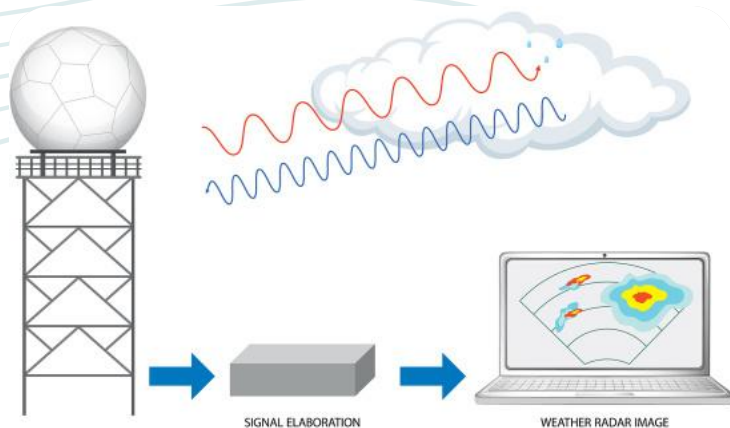
Optimized caching + multiprocessing

our system queries huge datasets from NASA/NOAA sources and serves them instantly, even on limited hardware.

AI Advisor

Users can simply ask, “Will it rain at the concert tonight?” or “Is it too windy for hiking tomorrow?” — and the AI answers in plain language, based on live forecast data.

# How It Works



## Data Fetching

We pull multi-layer GFS forecasts (rainfall, temperature, wind direction/speed) covering the entire globe.



## Processing & Indexing

A background multiprocess engine parses and caches forecast slices by time, location, and variable.



## Visualization:

The frontend converts these layers into real-time animation — like rain sweeping across your screen — helping users see the forecast instead of reading it.

A series of approximately ten thin, light teal wavy lines that originate from the top left corner and flow horizontally across the upper portion of the slide. The lines have a fluid, undulating quality, with some peaks and valleys, creating a sense of movement and elegance.

THE END

**Thank you!**