+ U.S. Government Shutdown Update: The 2025 NASA Space Apps Challenge will take place as scheduled on October 4–5!

2025 NASA Space Apps Challenge

Vibe Finders

About | Project | Members

Saved Revision

Project Summary — Complete

Project Name *

Give your project a title that helps describe what your team worked on.

Weather Vibes

Summary *

Provide a summary of your project. What did you develop? How does it address the challenge? Why is it important? We suggest a 50-200 word summary.

We're Vibe Finders, and our app "Weather Vibes" helps you find the perfect weather for any activity. We translate complex NASA climate data into simple, intuitive "when" and "where" recommendations for everything from stargazing to travel, making Earth science accessible for everyone. Our "Vibe Engine" uses historical data from the NASA POWER API to generate beautiful, actionable heatmaps and calendars, empowering users to make better plans and connect with their environment in a new way.

493/1500

Project Links — Complete

Project Demonstration *

Please provide a short demonstration (demo) of your project as either a slide presentation (no more than 7 slides, including the title and introduction) or a video (30 seconds or less). Upload your demo to a public hosting platform such as YouTube, Google Drive, GitHub, OneDrive, or Dropbox, and **share a link that does not require a password, permission, or registration.**

To be eligible for a Global Award in the NASA Space Apps Challenge, your demo must be accessible through this public link and be no more than 7 slides or longer than 30 seconds.

Important: Make sure your link is formatted using the entire URL, for example: https://www.spaceappschallenge.org.

https://github.com/vivekanandba/weather-vibes/blob/160d667b9dae09948714f4b15160f

Project *

Share a publicly accessible link to your project. This can be a website you created to showcase your project, a cloud-based hosting service or code repository, or platforms such as YouTube, Google Drive, GitHub, One Drive, Dropbox, etc. **The link you provide should not require a password, permission, or registration in order to access your final project. To be eligible for a Global Award, your project must be accessible via a public link.**

Important: Make sure your link is formatted using the entire URL, for example: https://www.spaceappschallenge.org.

https://github.com/vivekanandba/weather-vibes

Project Information — Complete

Project Details *

Provide details about your project. Consider the following questions: What does it do or how does it work? What benefits does it have? What is the intended impact of the project? What tools, coding languages, hardware, or software did you use to develop your project? How is your project creative? What factors did your team consider?

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What does your project do? How does it work?

Our project, **Weather Vibes**, is an intuitive, theme-based weather discovery engine designed to make NASA's vast climate data accessible and actionable for everyone. It answers two fundamental questions: "Given my activity, **where** is the best place to go?" and "For a specific location, **when** is the best time to go?"

It works through our core innovation, the **"Vibe Engine."** Instead of asking users for complex meteorological parameters, we ask them to choose a "vibe" or activity from a curated list, such as "Perfect Stargazing Night," "Ideal Beach Day," or "Optimal Farming Conditions."

1. **"Where" Feature:** The user selects a vibe, a time of year, and draws a search area on a map. Our backend then queries decades of NASA POWER historical data, calculates a "vibe score" for every point in the area, and displays a beautiful heatmap of the most suitable locations.
2. **"When" Feature:** The user selects a vibe and a specific location. Our app generates a "Vibe Calendar," showing a score for each month of the year, instantly revealing the best season for their activity.
3. **Specialized Advisors:** We also built advanced, pre-configured vibes for high-impact use cases like farming, fashion, and wellness, which provide specific recommendations, not just a score.

What benefits does it have? What is the intended impact of the project?

The primary benefit of **Weather Vibes** is that it **democratizes Earth science data.** We transform immense and complex climate datasets into simple, intuitive, and human-centric recommendations. This empowers users who are not climate scientists to make informed decisions.

Project Requires Submission for Judging — Lock: OFF

Last Saved: 05 October 2025 23:17

Save Progress | Submit for Judging | Close

Tips for Submitting Your Project

1) Review the Project Submission Guide for detailed instructions and best practices for submitting your project.

2) **Save your project often!** Use the "Save Progress" button to save your changes as you edit your Project. Your changes will now be viewable to anyone who visits your page. **Saving your project does not submit it for judging, you must click "Submit for Judging" to be considered for awards.**

3) If you have multiple team members who might be trying to edit your project at the same time, you can toggle the edit "Lock" to 'ON'. This will let other team members know you are making changes to the project tab so they do not try to make edits at the same time. However, another team member may still remove the lock and make changes to the project, overwriting any changes you had not yet saved.

4) Once you are ready, click the "Submit for Judging" button. You should see a notification bar at the top letting you know that your project has been submitted and that your certificate is available.

5) You can see the latest times your project was saved or submitted in the "Edit Details" box on the Project tab. **Only your final click on "Submit for Judging" will be reviewed by judges.**

6) Project submission closes on Sunday, October 5 at 11:59 PM local time, in accordance with the time zone of your Local Event. If your team is registered for the Universal Event, your project must be submitted in accordance with the local time of your Team Owner's area of residence. You must click the "Submit for Judging" button prior to 11:59pm local time of your Local Event. **Any projects saved or submitted past this deadline will not be eligible for judging. No edit requests or exceptions past this deadline are allowed. Submission is final.**

Intended Impact:

- **For Individuals:** Empower travelers, photographers, and hobbyists to plan their activities with confidence, reducing weather-related disappointments and maximizing their experiences. Our "Climate Mood" and "Fashion" advisors can even enhance daily well-being.
- **For Businesses:** Enable event planners, farmers, and tourism operators to optimize their scheduling, increase yields, reduce costs, and mitigate risks associated with adverse weather. Our "Farming Advisor" directly contributes to more efficient and sustainable agriculture.
- **For Society:** By making climate data easy to understand, we foster a greater appreciation for the Earth's climate patterns and the impact of environmental changes, encouraging more informed conversations about our planet.

What tools, coding languages, hardware, or software did you use?

Our project was built using a modern, scalable, and entirely open-source technical stack, significantly accelerated by a suite of AI-powered development tools.

- **Primary Data Source:** NASA POWER API (monthly regional climatology data).
- **Frontend:** Next.js (React)
- **Backend:** Python with FastAPI
- **Mapping:** Mapbox GL JS with `react-map-gl`
- **Data Processing:** Python with `rasterio`, `geopandas`, and `numpy`.
- **Data Store:** GeoTIFF files on a cloud storage provider.
- **UI/UX:** Chakra UI for components.

How is your project creative?

The creativity of **Weather Vibes** lies in its **human-centric abstraction.** Instead of presenting raw data (e.g., "CLOUD_AMT < 20%"), we present a feeling or a purpose (e.g., "Perfect Stargazing"). This translation layer is our core innovation.

- **The "Vibe" Concept:** We moved beyond typical weather forecasting to create a "weather *discovery*" tool. The idea of "finding a vibe" is a novel and engaging way to interact with scientific data.
- **The Recommendation Engine:** Our advanced "Advisors" don't just show data; they provide specific, actionable advice (e.g., "It's a great day for a linen shirt," or "Consider planting now to avoid the historical frost window"). This transforms the app from an analytical tool into a personal consultant.
- **Visual Storytelling:** We focused on making the data beautiful. The instant heatmap and calendar visualizations tell a compelling story at a glance, making complex climate patterns immediately understandable.

What factors did your team consider?

Our team, **Vibe Finders**, based in Bangalore, considered several key factors:

1. **User Experience First:** Our primary goal was to create something that our friends and family—who are not data scientists—would genuinely want to use. This drove our decision to focus on the "vibe" concept.
2. **Performance and Scalability:** We knew that making live API calls to NASA for every user interaction would be too slow. This led us to design a robust architecture where all data is pre-computed and cached locally, ensuring a fast and seamless user experience.
3. **Team Strengths:** We explicitly divided our roles based on our individual strengths (Frontend Lead, Backend Lead, Data Lead) while also assigning full-stack ownership for each core feature. This allowed for parallel work and efficient integration.
4. **Real-World Impact:** We chose our "Advisor" features based on their potential for real-world impact, particularly the "Crop & Farming Advisor," which could be a valuable tool for local farmers in our region and beyond.

Use of Artificial Intelligence (AI) *

The use of Artificial Intelligence (AI) tools is permitted for the NASA Space Apps Challenge and can be used as a tool to accelerate innovation and creativity. However, generated content may not use, contain, or modify any NASA branding or design elements (such as the NASA logos, flags, or mission identifiers). We also require that you clearly indicate where and how AI tools were utilized in your project, including:

- Images and videos: Must be amended to include a visible watermark indicating they are AI-generated.

- Audio: Must acknowledge AI generation in descriptive text and metadata.

- Code and data: Must acknowledge AI generation in descriptive text and metadata.

We look forward to seeing your original thoughts and your skills exemplified in your projects. Our judges will consider originality, intent, and execution in the context of AI-assisted work.

List below how you used AI for your project. If you did not use Artificial Intelligence tools/software, please write "N/A" in the box below

Bulleted List

AI Tool Integration

Our team, **Vibe Finders**, adopted an AI-augmented workflow to accelerate development and enhance creativity:

- **Miro (AI-Powered Whiteboard):** We used Miro's AI capabilities for our initial brainstorming sessions, generating mind maps and user flow diagrams that formed the foundation of our project plan.
- **Cursor (AI Code Editor):** Our primary code editor. We used Cursor's deep integration with LLMs to generate boilerplate code for our React components and FastAPI endpoints, debug complex issues, and rapidly refactor our Python data processing scripts.
- **Generative AI Models (Gemini Pro, Claude, Codex):** We used a combination of these models throughout the hackathon:
  - **Code Generation & Debugging:** For generating complex code snippets, such as the geospatial clipping logic in Python and the Mapbox heatmap styling in JavaScript.
  - **Documentation & Write-ups:** For helping us draft and refine our project descriptions, documentation, and this final submission text, ensuring clarity and impact.

NASA Data *

In order to be eligible for a Global Award, you must use NASA data or resources.

For "Link Text," please input the name of the resource. Please list all NASA data or resources used in your project.

Important: Make sure your link is formatted using the entire URL, for example: https://www.spaceappschallenge.org.

Link Text	Link Url
NASA POWER API - Climatology Data	https://power.larc.nasa.gov/

+ Add New Link

Space Agency Partner & Other Data

In addition to NASA data, please list all other data, resources, or tools used in your project from Space Agency Partners or other sources.

Resources should include any code, text, and images (even if they are open source or freely available) that you used when creating your project. If you are using any copyrighted materials, make sure you have permission to use them. All links must be publicly accessible.

For "Link Text", please input the name of the data or resource.

Important: Make sure your link is formatted using the entire URL, for example: **https://www.spaceappschallenge.org**.

Link Text	Link Url

+ Add New Link

– Project Submission Verification ✓ Complete

Agree to Terms and Conditions *

I have read and understand the project submission requirements as contained in the NASA Space Apps Project Submission Guide, and I agree to the Participant Terms and Conditions and Privacy Policy.

Confirm All Work is Original *

I confirm that the submitted project represents my team's original work and that all external resources, including code, text, and images used in the project, are listed in the NASA Data and the Space Agency Partner & Other Data fields of the project submission form. In creating your project, you confirm that your team did not use any copyrighted materials (i.e., music, images, text, etc.) that you don't have permission to use.