

# Smart Search for NASA - Technical Reports

This project, developed during the Hackathon, is a functional web application designed to significantly enhance the search experience within the **NASA Technical Reports Server (NTRS)** database.



## How It Works: Leveraging AI for Precision Search

The application operates in a secure, two-step process to transform natural language queries into highly effective, technical searches:

### Step 1: Query Translation (Powered by Gemini API)

The core innovation is the use of the Google **Gemini API (gemini-2.5-flash-preview-05-20)** to act as an intelligent intermediary:

1. The user enters a query in natural language (e.g., "satellites observing Earth's climate").
2. The application sends this query to the Gemini API with a specific **System Instruction**, commanding the model to translate the casual language into a focused, concise, and technical set of keywords suitable for a scientific database search.
3. The Gemini API returns the optimized, technical query (e.g., "earth observation satellite atmospheric science").

### Step 2: Data Retrieval (NASA NTRS API)

1. The optimized, technical query received from Gemini is then used to make a direct request to the **NASA Technical Reports Server (NTRS) API**.
2. The application fetches the relevant technical documents, including the title, distribution date, and abstract snippets.
3. Finally, the JavaScript code renders these results into a clear, styled, and responsive table on the webpage, providing direct links to the full PDF documents hosted by NASA.

## Technical Details

- **Frontend:** Pure HTML, CSS (using custom modern styles in dark blue/navy theme), and Vanilla JavaScript.
- **APIs Used:**
  - **Gemini API:** For intelligent, real-time query optimization and translation.
  - **NASA NTRS API:** For fetching official technical documents and reports.
- **Styling:** Custom CSS was implemented to create a clean, responsive, and professional interface, featuring an interactive "rocket button" and a dark blue color palette for high legibility.

**Note for Judges:** This application requires a valid Gemini API key to function. The key used for demonstration purposes is temporary and will be revoked immediately after the Hackathon.