



# NASA Space Apps Noida 2024

World's Largest Space & Science Hackathon

5-6th October 2024 | 36 Hours Hackathon

Innovation partner **I12S**



## Team Details

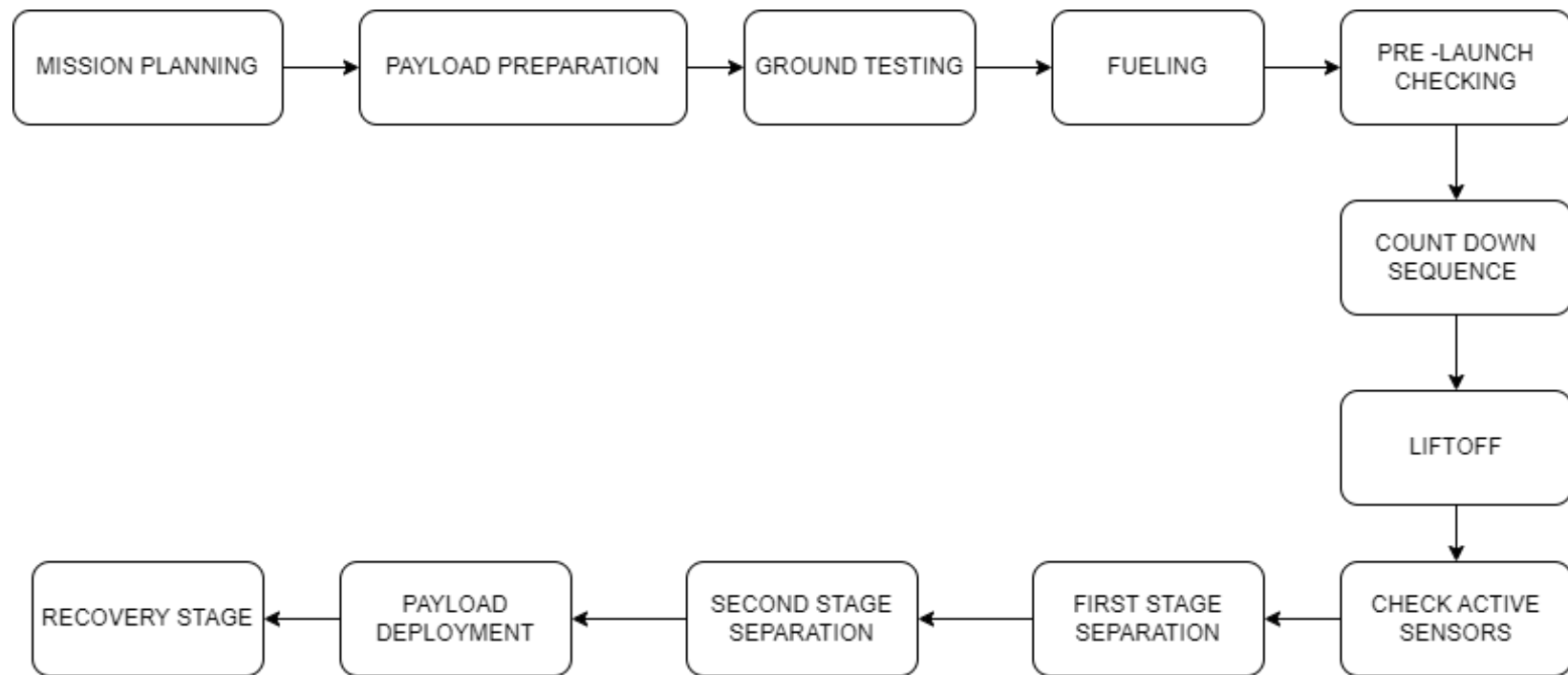
- a. Team name: Omniscient
- b. Team leader name: Anmol Kumar Pandit
- c. Problem Statement: Create Your Own Challenge

## DETAILED EXPLANATION OF THE PROPOSED SOLUTION :

- 1.Real-Time Anomaly Detection-**AI continuously monitors spacecraft sensor data, instantly detecting anomalies like **communication delays during missions**.
- 2.Predictive Maintenance and Health Monitoring-** AI **predicts system health**, **anticipating future failures** and recommending timely interventions, reducing downtime and enhancing mission success.
- 3.Autonomous Decision-Making Support-** In emergencies, AI-driven systems suggest **corrective actions in real-time**, assisting mission control in critical decision-making.
- 4.Adaptive Mission Planning-** AI dynamically adjusts mission parameters like **orbit correction** and resource allocation, proposing adaptive strategies based on environmental changes.



## Process flow diagram or Use-case diagram



## POTENTIAL CHALLENGES AND RISKS

### CHANDRAYAAN 3

- Risk of landing failures
- **Single Landing Attempt**
- Communication Failures if exists.
- Insufficient Funds



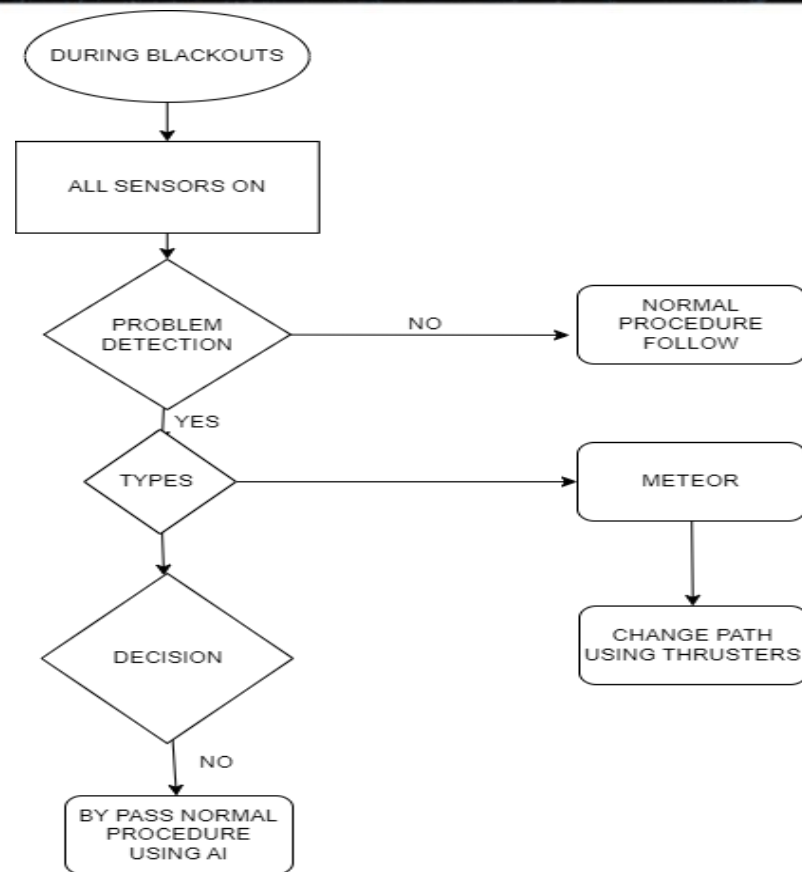
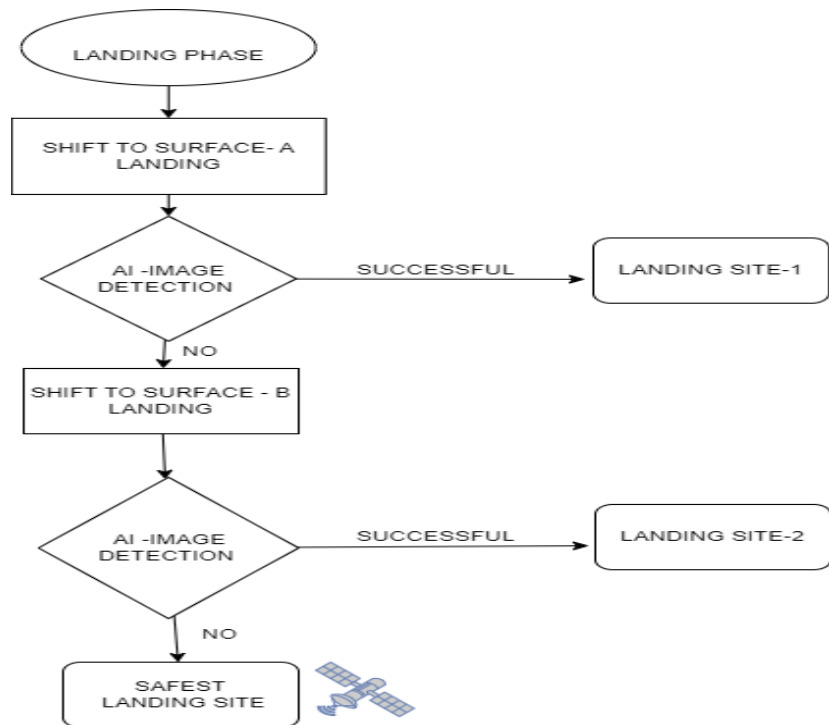
### MARS ORBITER MISSION(MOM)

- Non recoverable **Communication Blackout**
- Risk of collision during blackouts
- Data transmission delays
- Insufficient funds





## How will it be able to solve the problem?



## Technologies to be used in the solution



PyTorch



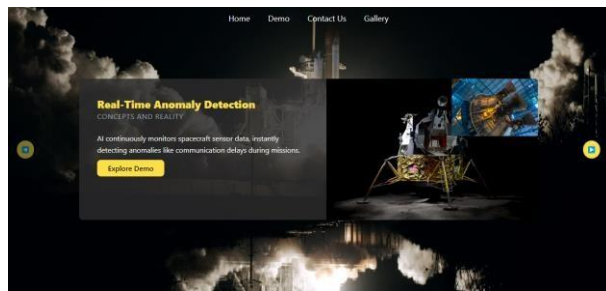
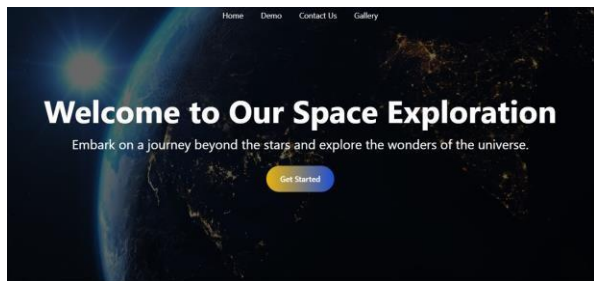
python™



Grafana



## Snapshots of the prototype



### Upload Image for Analysis

Upload Image File:

Choose File | No file chosen

Or Enter Image URL:

http://example.com/image.jpg

Upload

### Sample Images



### Results

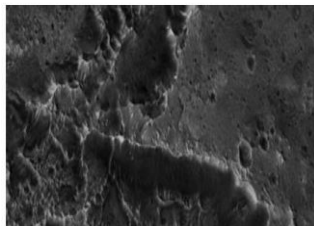
#### Altitude and Thrust

Estimated Altitude: 5693.697738647461 meters

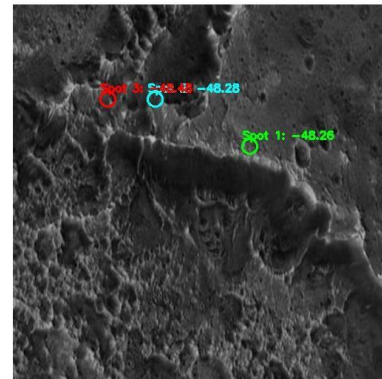
Required Thrust: 10843.790356608887 N

#### Images

Original Image with Marked Spots



### Landing Spot Map



### Graphs

## How different is it from any of the other existing ideas?

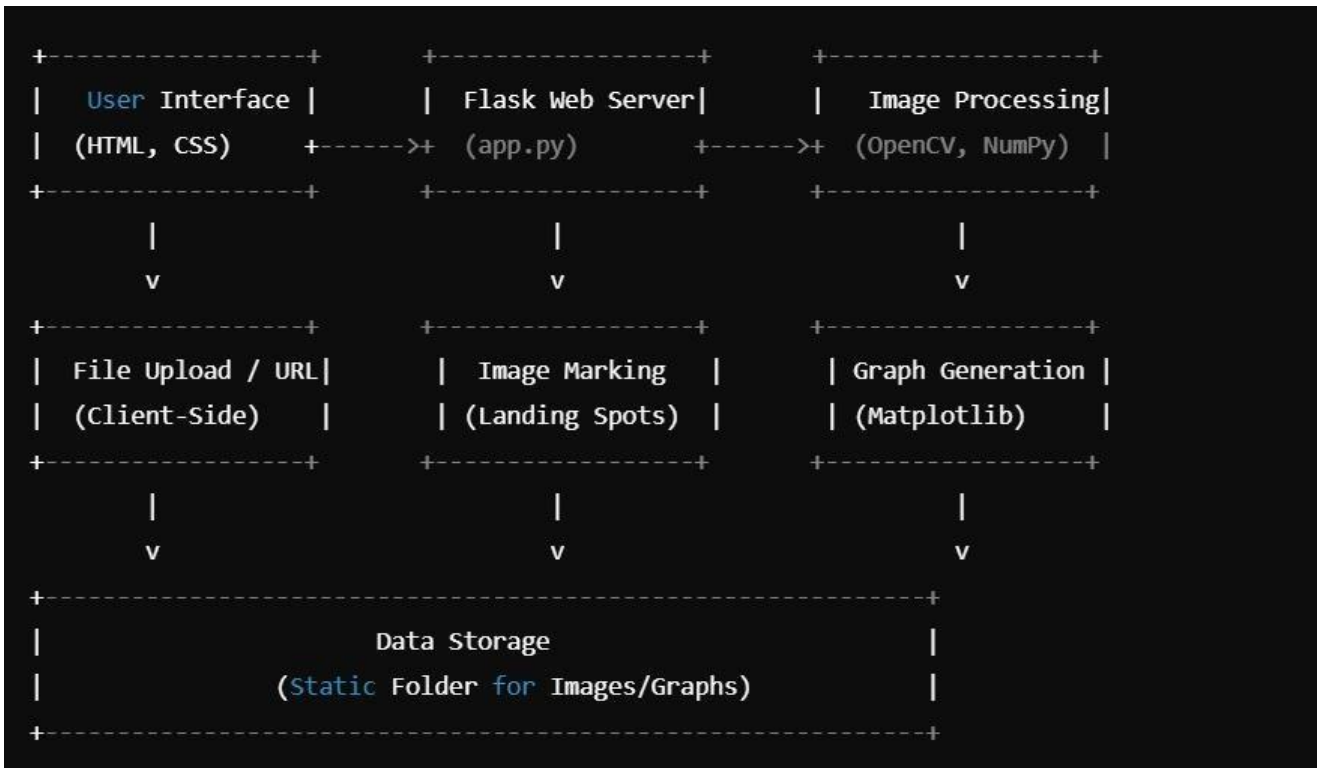
1. Train a machine learning classification model (e.g., decision trees, random forests, neural networks) for landing predictions.
2. Ensure the model achieves more than 80% accuracy using appropriate training and testing data.
3. Design the model to handle various planetary parameters, making it adaptable for different planets.
4. Clearly preprocess data and label outputs to display landing details in simple, understandable terms.
5. Enable easy modification for switching between planets and retrieving specific landing information.

## USP of the Proposed Solution:

- High accuracy (>80%) in landing predictions.
- Easily adaptable for various planets.
- Simple, user-friendly data representation.
- Customizable for switching planetary details.
- Scalable for future expansions.



## Architecture diagram of the proposed solution



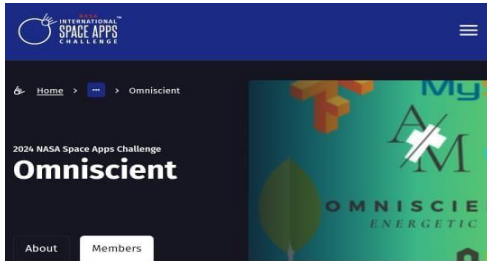
Provide links to your:

1. **GitHub Public Repository** – [https://github.com/Mayank-728190/space\\_ai](https://github.com/Mayank-728190/space_ai)
2. **Final Product Link** - <https://space-ai.netlify.app/>
3. **Demo Video Link(3 Minutes)** - <https://drive.google.com/file/d/1V-42vD16mwc-zh1f0L7j4pZIJbYBxBEk/view?usp=sharing>



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## TEAM MEMBERS



**Anmol Kumar Pandit**  
@anmol88  
India



**Mayank G**  
@mayank9918  
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**Deepanshi yadav**  
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**Rahul Chaudhary**  
@rahul0369  
India

You are a team member.



Leave Team

### Team Information

**Local Event**  
Noida, India

**Challenge**  
Create Your Own Challenge

#### Desired Skills

[Coding](#) [Graphic Design](#) [Open Science](#) [Web Design](#) [Web Development](#)

#### Languages Spoken

[English](#) [Hindi](#)

## NEW MEMBER REQUESTS

You may allow up to 4 users to join your team.

No Pending Requests.

## TEAM MEMBERS



**Anmol Kumar Pandit**  
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**Deepanshi yadav**  
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**Mayank G**  
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**Rahul Chaudhary**  
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India

YOU ARE THE TEAM OWNER.

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### Team Contact Information

Team Leader - Anmol phone no. 767850750 whatsapp no. 767850750 email - anmolpandit8@gmail.com  
Emergency No. - 76855 6162



2024 NASA Space Apps Challenge

## Omniscient

About

Members

## ABOUT THE TEAM

Btech. Artificial Intelligence And Data science Languages learning : Python , C++ , Javascript Currently learning Full Stack Development

## ABOUT THE CHALLENGE

Participants are invited to create their own challenge to tackle during the

You are a team member.

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# Thank You

