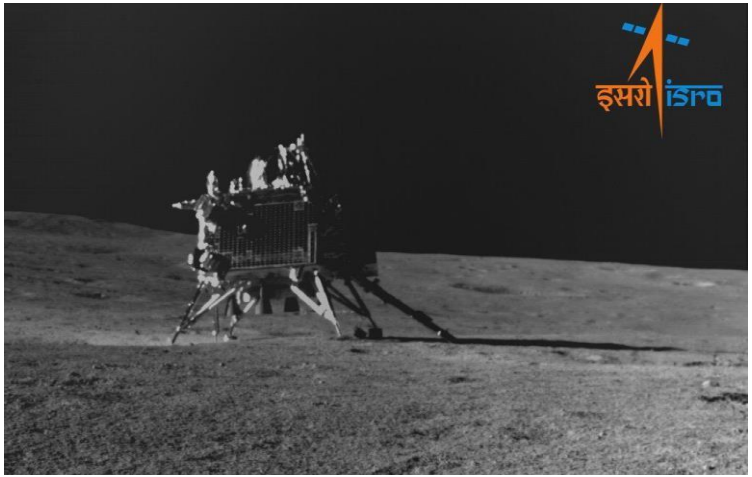
Team Details

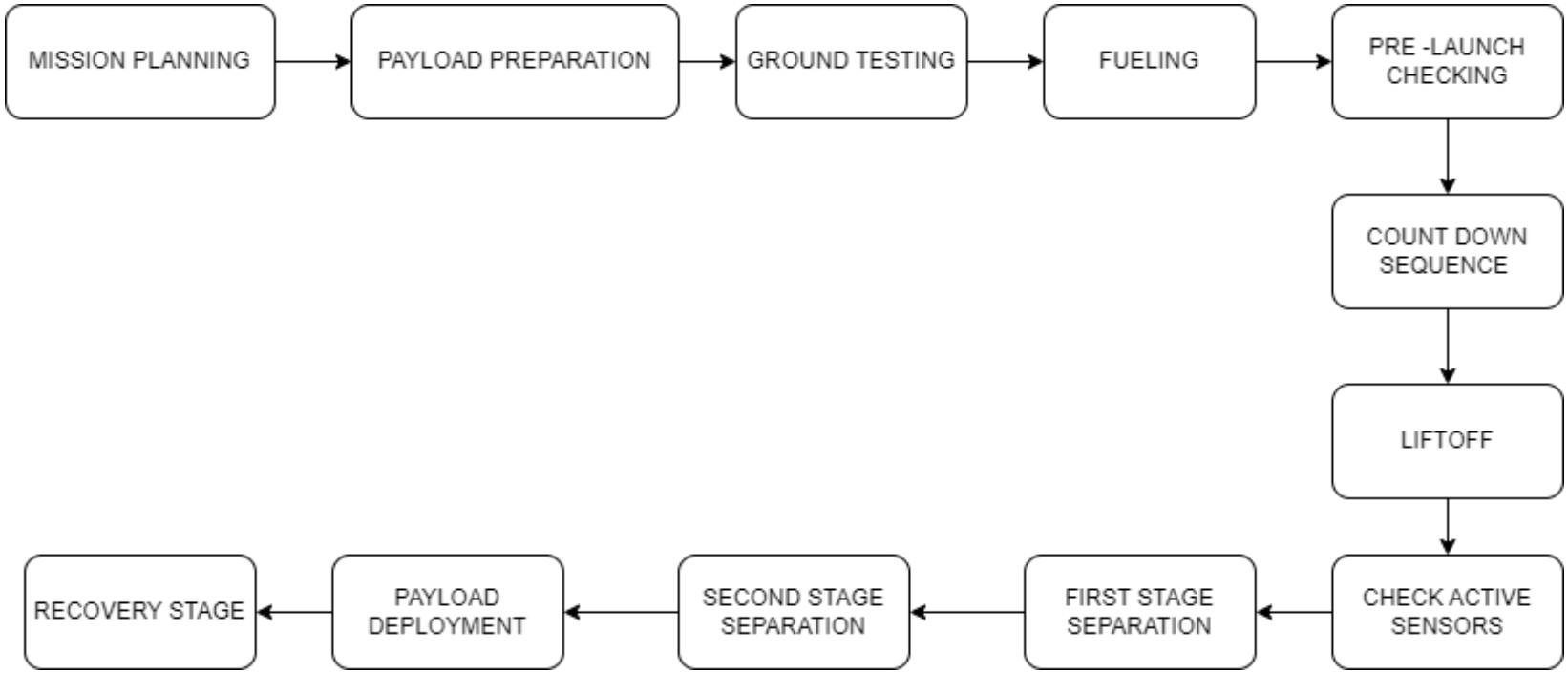
a. Team name: Omniscient
b. Team leader name: Anmol Kumar Pandit
c. Problem Statement: Create Your Own Challenge

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

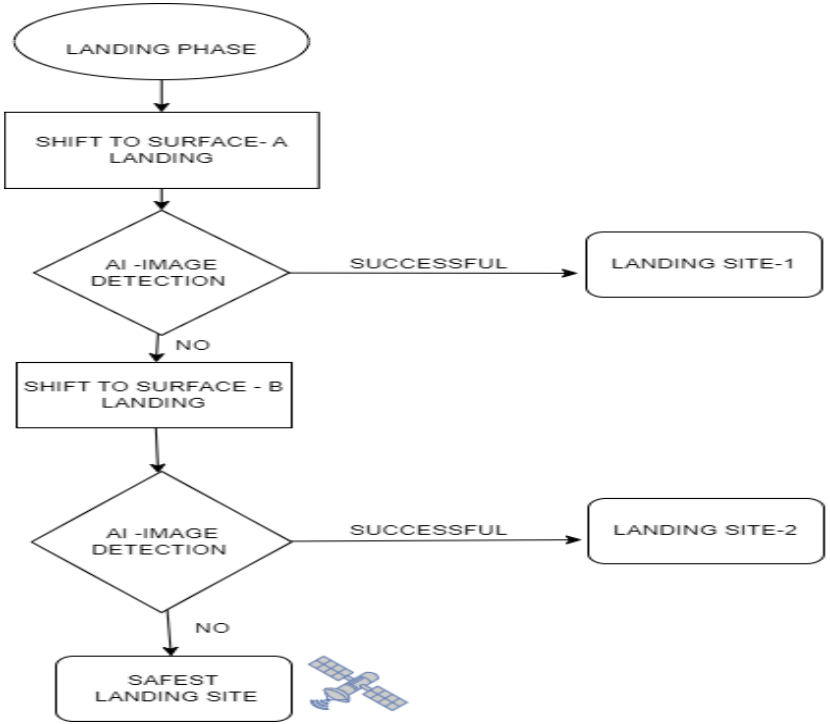
CHANDRAYAAN 3

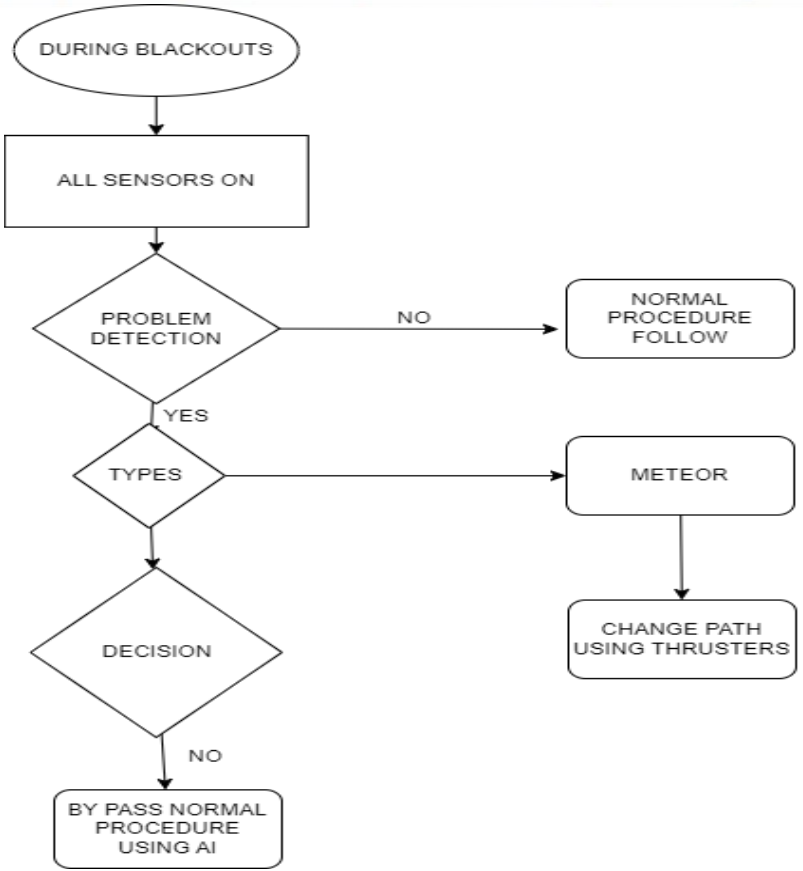
- Risk of landing failures
- Single Landing Attempt
- Communication Failures if exists
- Insufficient Funds

MARS ORBITER MISSION(MOM)

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

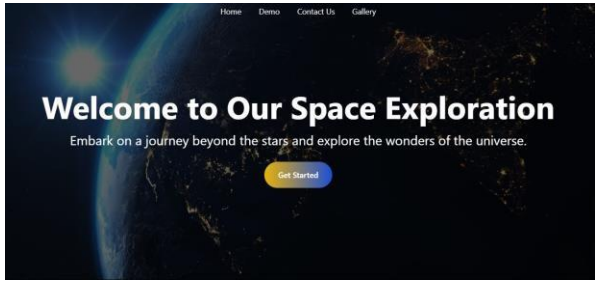
How will it be able to solve the problem?

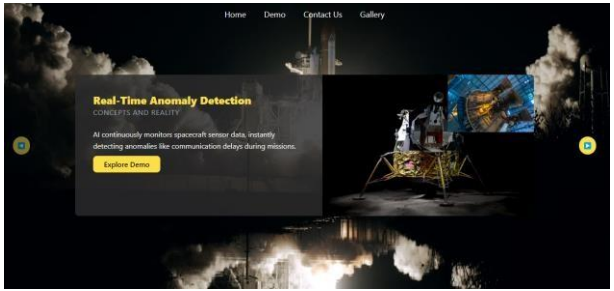


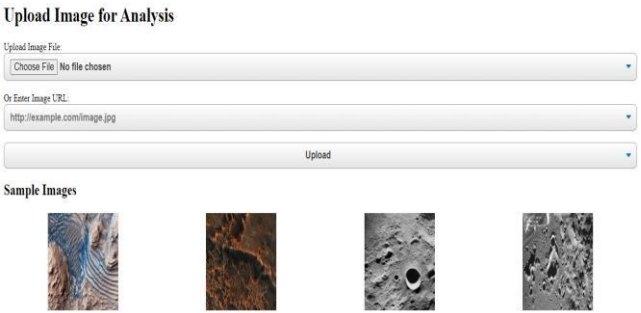


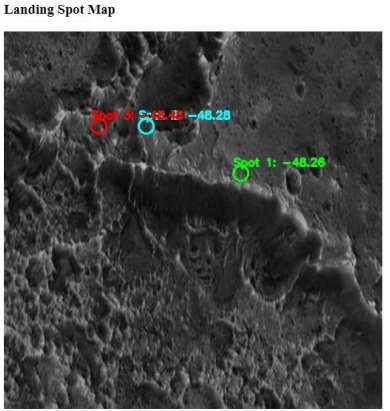
Technologies to be used in the solution

Snapshots of the prototype









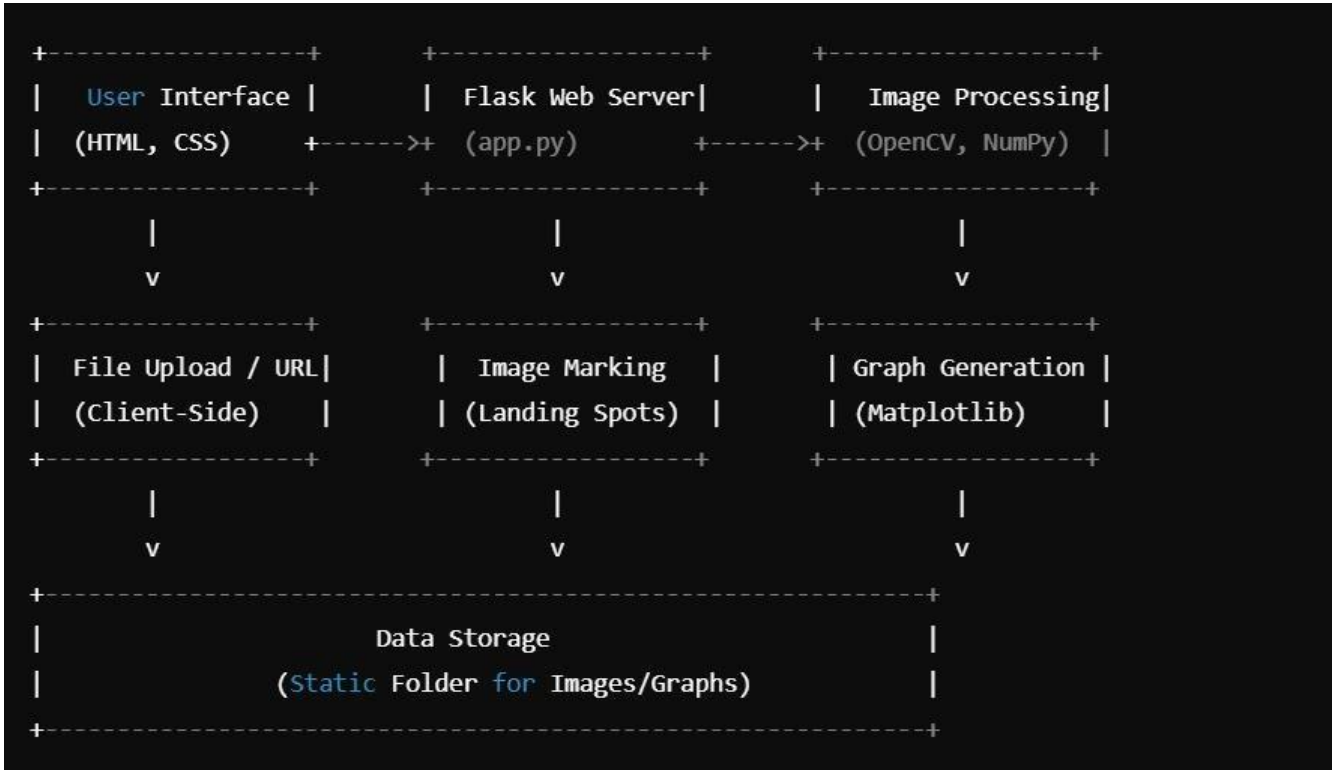
How different is it from any of the other existing ideas?

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

2. **Final Product Link** - https://space-ai.netlify.app/

3. Demo Video Link(3 Minutes) - https://drive.google.com/file/d/1V-42vD16mwc-zh1f0L7j4pZlJbYBxBEk/view?usp=sharing

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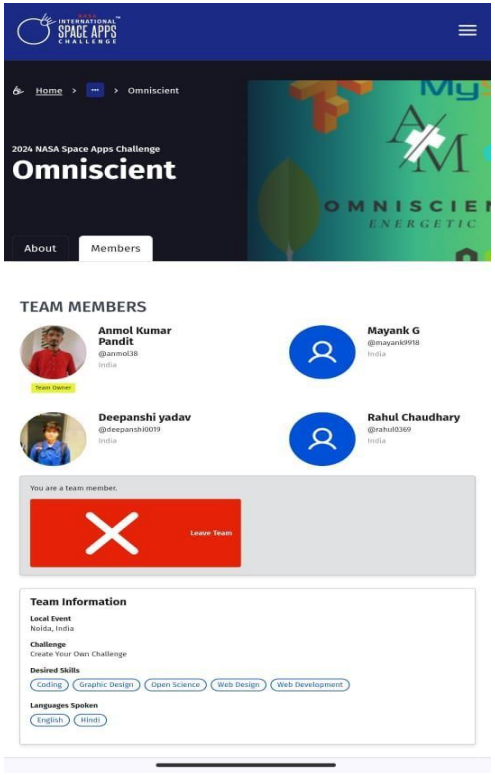

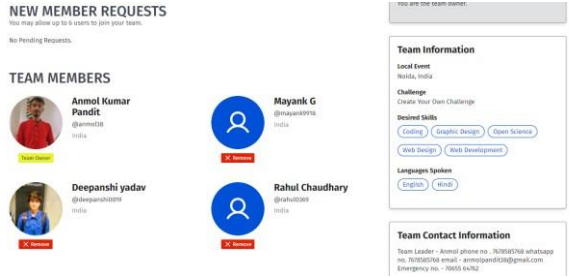

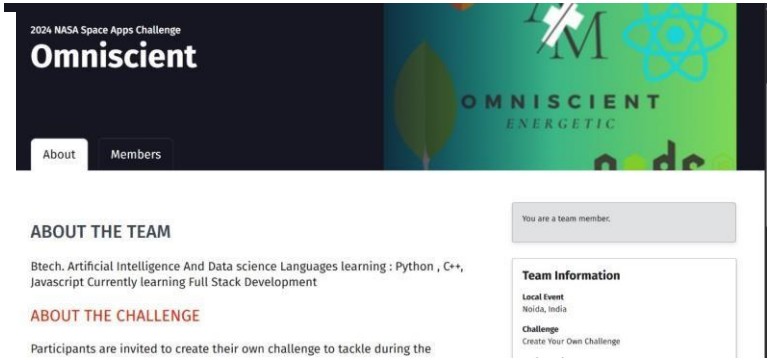

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Thank You