

Hackathon

Identifying Craters on Interplanetary Surfaces

Description: Develop a machine learning model or algorithm that can accurately identify and classify craters on the surfaces of planets and moons using images captured by spacecraft.

Challenge: The main challenge lies in handling the varying lighting conditions, terrain complexities, and image resolutions across different planetary bodies, which can make accurate crater detection difficult.

App/Website that Displays International Space Station Location

Description: Create a real-time web application or mobile app that tracks and displays the location of the International Space Station (ISS) as it orbits Earth, providing users with live updates and information.

Challenge: Integrating accurate real-time data and ensuring seamless user experience while accounting for potential network latencies and the station's fast-moving orbit.

Classifying Features from Satellite Imagery

Description: Develop a system that uses AI to classify and categorize various features (e.g., vegetation, urban areas, water bodies) from satellite imagery for purposes like environmental monitoring or urban planning.

Challenge: The challenge here is to create a model that can generalize well across different regions and seasons, dealing with factors like cloud cover, image noise, and varied resolutions.

Space Debris Management System: A Case Study

Description: Design a system or a case study that focuses on tracking, predicting, and mitigating space debris in Earth's orbit to ensure the safety of satellites and other space missions.

Challenge: The complexity of tracking small debris across vast distances, predicting their trajectories, and developing effective mitigation strategies are significant challenges in this field.

Chandrayaan 2: Reason of Failure and Detailed Case Study

Description: Conduct an in-depth case study on the Chandrayaan 2 mission, analyzing the reasons behind the failure of its Vikram lander, and proposing potential improvements for future missions.

Challenge: Accessing detailed and accurate information on the mission's failure and proposing feasible solutions that can be realistically implemented in future lunar missions.

Note : Participants are free to choose any of the problem statements listed above or propose and work on any other related problem statement that aligns with the hackathon's theme and objectives. Creativity and innovation are encouraged!