



NASA™
INTERNATIONAL
SPACE APPS
CHALLENGE

NASA SPACE APPS CHALLENGE 2024 SURAT



Executive Summary

The NASA Space Apps Challenge Surat 2024, hosted by the Computer Engineering Department of Sarvajanik College of Engineering and Technology (SCET) under Sarvajanik University, successfully brought together diverse participants to tackle Earth and space challenges inspired by NASA.

NASA Space Apps Challenge held on October 5-6, 2024, this event was organized in collaboration with IEEE Gujarat Section, ISTE, CSI, eChai, TiE Surat, SSIP Cell, MLSA, Yashvi Foundation Charitable Trust, RAHI ENGenius Solutions LLP, InsideFPV, The Surat People's Co-Operative Bank Limited, Tata Consultancy Services, 11ZA, and Sahajanand Technologies Private Limited, exemplifying the power of partnership.

As part of NASA's global hackathon, participants—ranging from software developers, engineers, technologists, scientists, developers and designers—used open NASA data to develop solutions for challenges in environmental sustainability, space science, and beyond, guided by mentors, judges, and notable guests. With this year's theme, "The Sun Touches Everything," participants explored the Sun's influence on Earth and space.

The event, which included both local and remote elements to engage participants and mentors globally, concluded with 17 local winners and five standout teams nominated for global recognition. This collaborative hackathon fostered innovation, teamwork, and creativity, empowering participants to contribute impactful solutions in line with NASA's mission.

What is the NASA Space Apps Challenge?

The NASA Space Apps Challenge is the world's largest hackathon, launched in 2012, inviting participants from all ages and backgrounds to solve challenges in space and Earth sciences. Open to everyone and entirely free, it fosters a culture of innovation through technology, creativity, and global collaboration, promoting DEIA (Diversity, Equity, Inclusion, and Accessibility) across diverse communities. With a STEAM focus—Science, Technology, Engineering, Arts, and Mathematics—the challenge encourages teamwork to create impactful solutions, leveraging NASA's open data and resources from partner space agencies to tackle real-world issues.

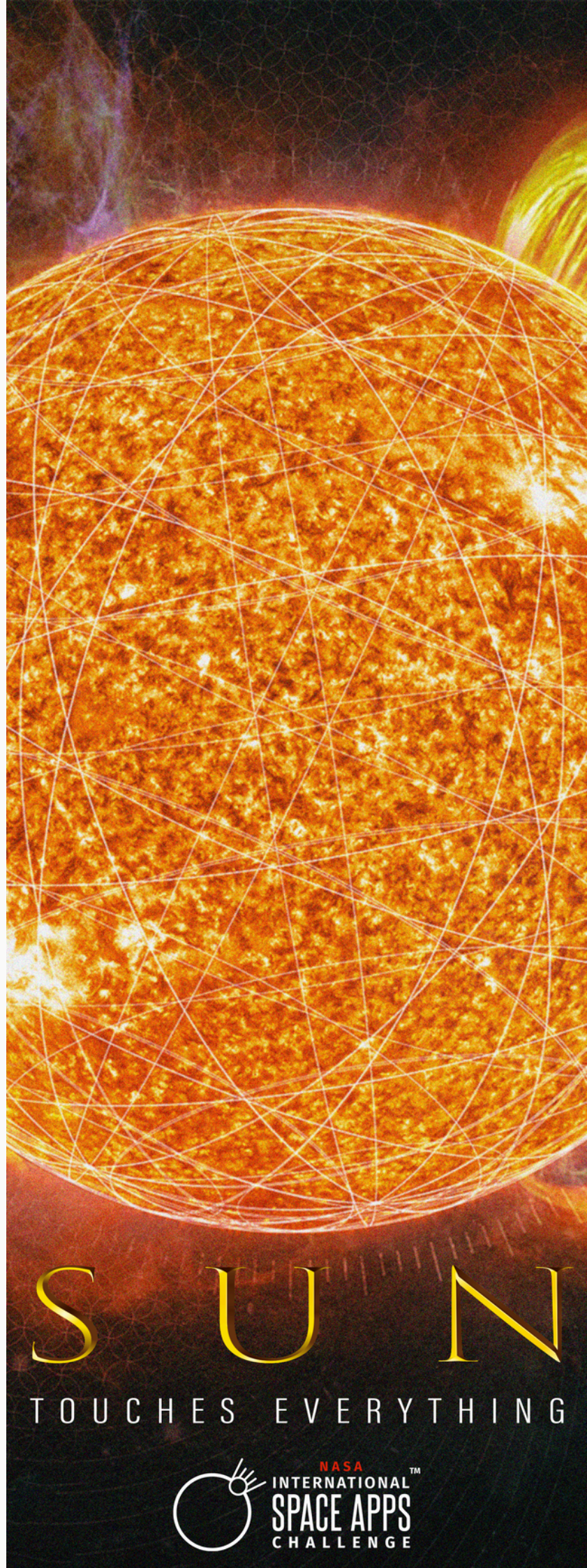
Goal and Purpose

To inspire global collaboration in solving real-world challenges using NASA's open data, fostering innovation and accessibility in space and Earth sciences.

Theme

"The Sun Touches Everything" – Exploring the Sun's influence on Earth and space science.

www.spaceappschallenge.org



SUN
TOUCHES EVERYTHING





NASA Space Apps Challenge Surat 2024



INNOVATE TOGETHER, EXPLORE BEYOND



The NASA Space Apps Challenge Surat 2024, hosted by the Computer Engineering Department of Sarvajani College of Engineering and Technology (SCET) under Sarvajani University, brought together a diverse group of participants to solve challenges inspired by NASA's missions. Held on October 5-6, 2024, this event celebrated innovation and collaboration on a global scale.

The NASA Space Apps Challenge Surat 2024 brought together a global community of innovators, connecting participants from schools, universities, and various fields. This collaborative effort fostered a dynamic exchange of ideas, with local and international mentors guiding passionate individuals to develop solutions to pressing space and Earth challenges.

The event also championed women's empowerment and upheld Space Apps' DEIA (Diversity, Equity, Inclusion, and Accessibility) values, creating an inclusive environment where all voices were valued. These principles, alongside the spirit of teamwork and innovation, made the NASA Space Apps Challenge a powerful example of unity and shared purpose in science and technology.



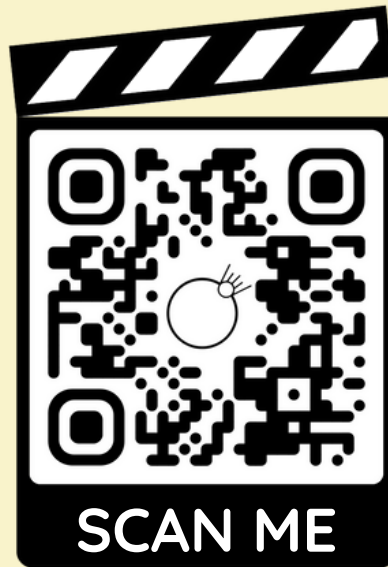
NASA INTERNATIONAL SPACE APPS CHALLENGE 2024 SURAT

470+ Participants

70+ Teams

17+ Total Winner
Teams

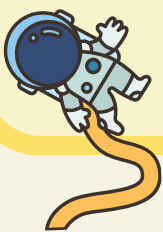
5+ Global Nominees
Team

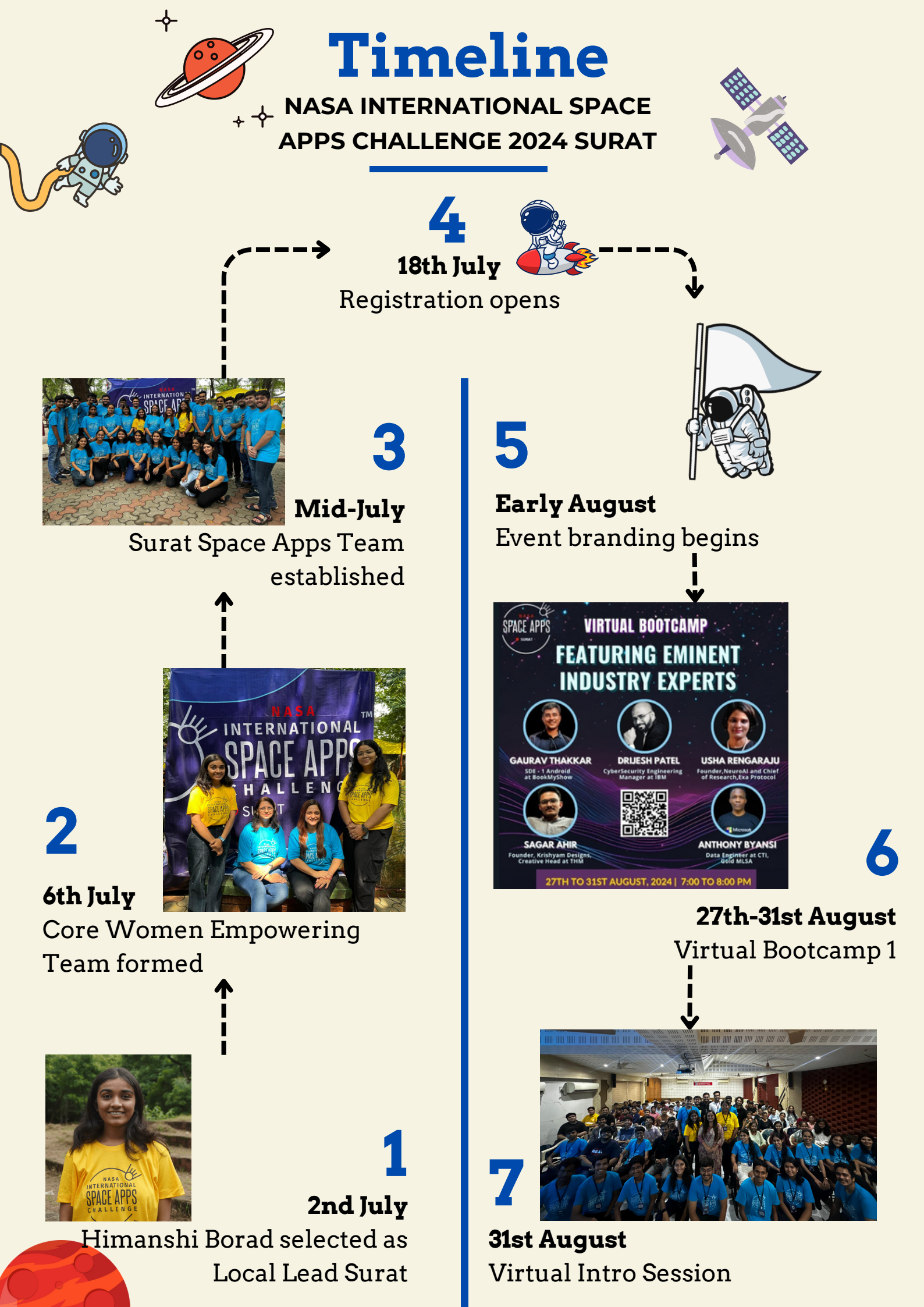


Innovate Together, Explore Beyond

5th-6th

**OCTOBER
2024**

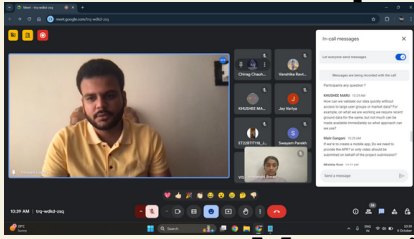




14

5th December

Celebration and Certification
Distribution Ceremony



13

6th October

Mentoring Session for
participants

12

5th October

Inauguration of the NASA Space
Apps Surat 2024 Hackathon



11

30th September

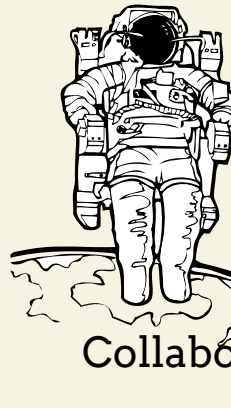
Offline Info Session held



8

August-September

Collaborators onboarded for the
event



9

23rd-24th September

Virtual Bootcamp 2 organized



10

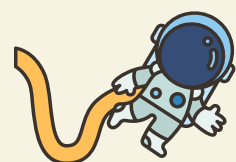
27th-28th September

School Info Sessions conducted



Timeline

**NASA INTERNATIONAL SPACE
APPS CHALLENGE 2024 SURAT**



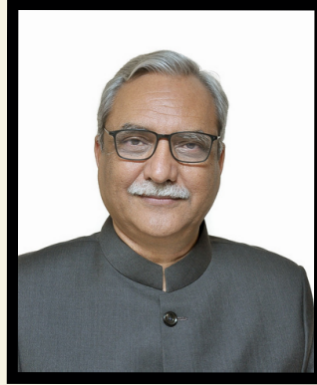
NASA Space Apps Challenge 2024

Surat Team

Patrons



Bharat Shah
SES Chairman
Sarvajanik University



Dr. Kiran Pandya
Provost
Sarvajanik University

Principal



Dr. Hiren Patel
Principal
SCET, Surat

Faculty & Student Lead

Dr. Dipali Kasat
Professor, HOD
Computer Engg Dept
SCET

Chairperson
NASA Space Apps
Challenge 2024 Surat



Prof. Dhatri Pandya
Assistant Professor
Computer Engg Dept
SCET

Faculty Lead
NASA Space Apps
Challenge 2024 Surat

Himanshi Borad

Local Lead
NASA Space Apps
Challenge 2024 Surat



Riddhika Cheruku

Co-Lead
NASA Space Apps
Challenge 2024 Surat

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
UNITED IN INSPIRING CHANGE.

Organizing Team



OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
UNITED IN INSPIRING CHANGE.

Organizing Team



Professional Networking Team

Sarah Shaikh

Krishna Patel

Namitha Yelugam

Neel Dedkawala

Soham Borad

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
UNITED IN INSPIRING CHANGE.

Organizing Team



Collaboration and Funding Team

Aum Kiran Patel
Shreya Chopra

OUR NASA SPACE APPS SURAT
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UNITED IN INSPIRING CHANGE.

Organizing Team



Creative Design Team

Piyush Singh
Dhyata Mehta
Divyam Desai
Prerna Gattani

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
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Organizing Team



School Marketing Team

Jay Reshamwala

Jit Prajapati

Chirag Chauhan

Meet Jariwala

Fenil Patel

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
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Organizing Team



Digital Promotions Team

Hetvi Patel

Jay Variya

Varun Parekh

Rudra Pandya

Krishna Panwala

Tisha Tandel

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
UNITED IN INSPIRING CHANGE.

Organizing Team



Community Management Team

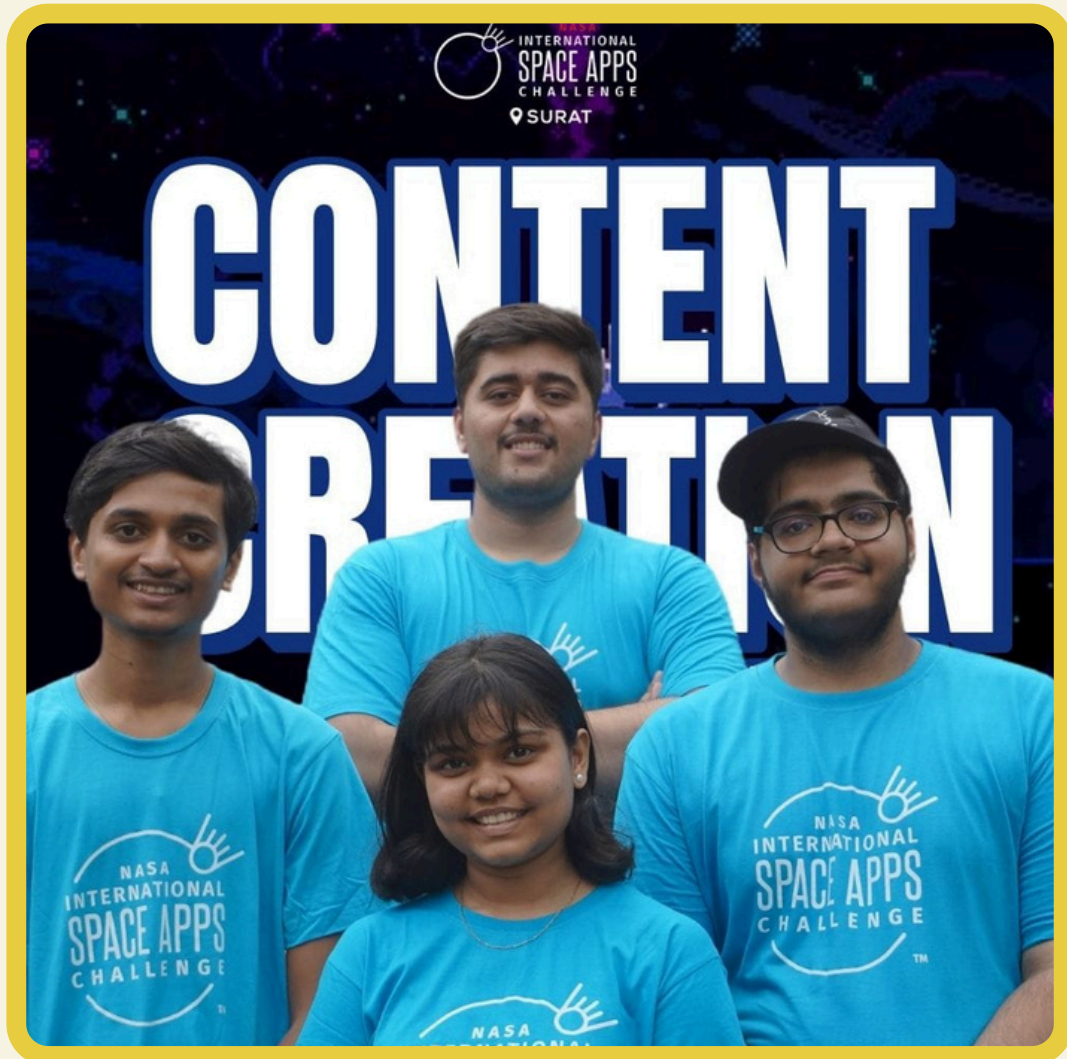
Aum Mukesh Patel

Khushee Maru

Swayam Parekh

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
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Organizing Team



Content Creation Team

Vansh Golakiya

Jeet Rao

Palak Tank

Manendra Jadeja

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
UNITED IN INSPIRING CHANGE.

Organizing Team



College Marketing Team

Palak Thumber

Parth Lathiya

Ansh Patel

OUR NASA SPACE APPS SURAT
TEAM: INNOVATIVE, DEDICATED, AND
UNITED IN INSPIRING CHANGE.

Organizing Team



Event Management Team

Niyati Majumdar
Harshita Pandit
Shivangi Vyas

Collaborators

EMPOWERING INNOVATION WITH
UNITY AND PURPOSE



Sarvajanik College of Engineering and Technology
Sarvajanik University



Sahajanand Technologies
Private Limited
(STPL)



Computer Society of India
(CSI)



Microsoft Learn
Student Ambassadors
(MLSA)



Tata Consultancy Services



11ZA



RAHI ENGenius Solutions LLP



IEEE Gujarat Section



Indian Society for
Technical Education
(ISTE)



eChai Ventures



The Indus Entrepreneurs
(TiE)
Surat



Student Startup
and
Innovation Policy
Cell
(SSIP)



The Surat People's Co-Operative Bank Limited



Yashvi Foundation Charitable Trust

PROBLEM STATEMENTS

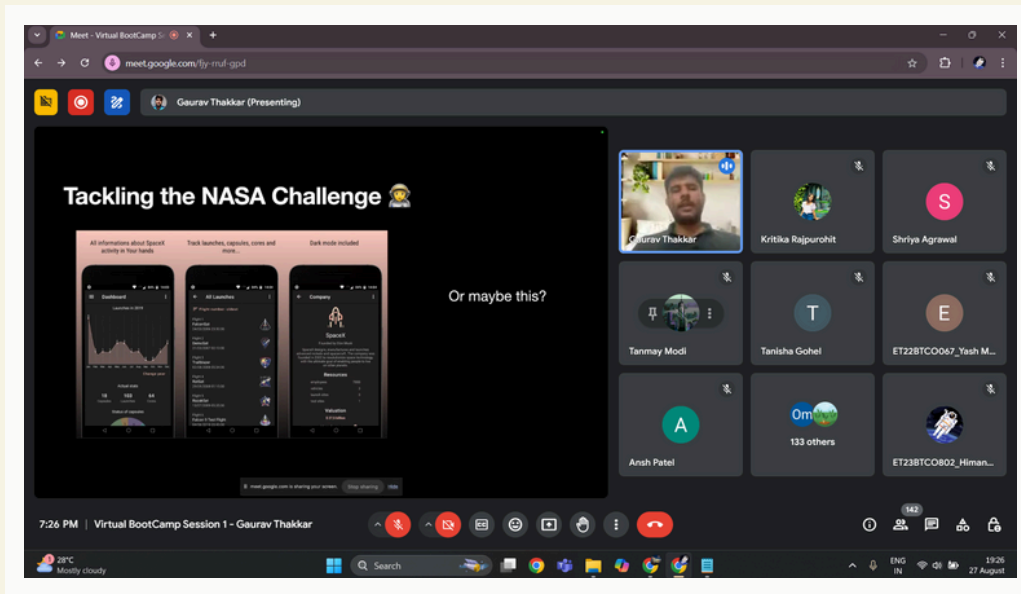


1. Beyond Sunlight: An Aquatic Chemosynthetic World
2. Chronicles of Exoplanet Exploration
3. Community Mapping
4. Create an Orrery Web App that Displays Near-Earth Objects
5. Visualize Space Science
6. Exosky!
7. Galactic Games: Fun in a Microgravity Environment!
8. Gender and Climate
9. GLOBE Protocol Games
10. Imagine our Connected Earth
11. Landsat Reflectance Data: On the Fly and at Your Fingertips
12. Leveraging Earth Observation Data for Informed Agricultural Decision-Making
13. Navigator for the Habitable Worlds Observatory (HWO): Mapping the Characterizable Exoplanets in our Galaxy
14. PACE in the Classroom
15. SDGs in the Classroom
16. Seismic Detection Across the Solar System
17. Show Us What the May 2024 Geomagnetic Storms Looked Like
18. Symphony of the Stars: Harmonizing the James Webb Space Telescope in Music and Images
19. Tell Us a Climate Story!
20. Uncover the Role of Greenhouse Gases in Your Neighborhood!

Virtual Bootcamp 1

27th - 31st August, 2024

NASA International Space Apps Challenge 2024



GAURAV THAKKAR

SDE-1 Android
BookMyShow

27th Aug, 2024

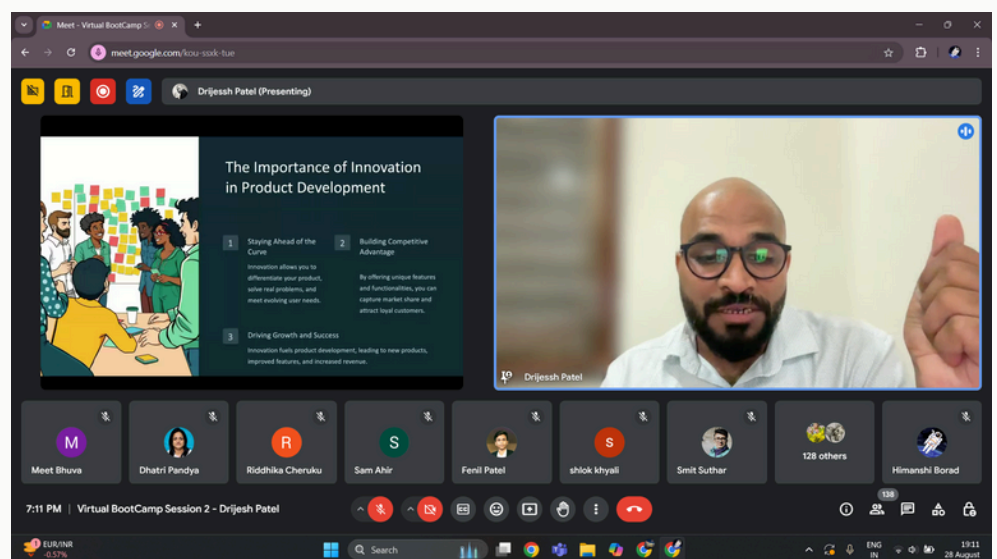
Appstronaut: Launching into NASA Space Apps Challenge with your First App

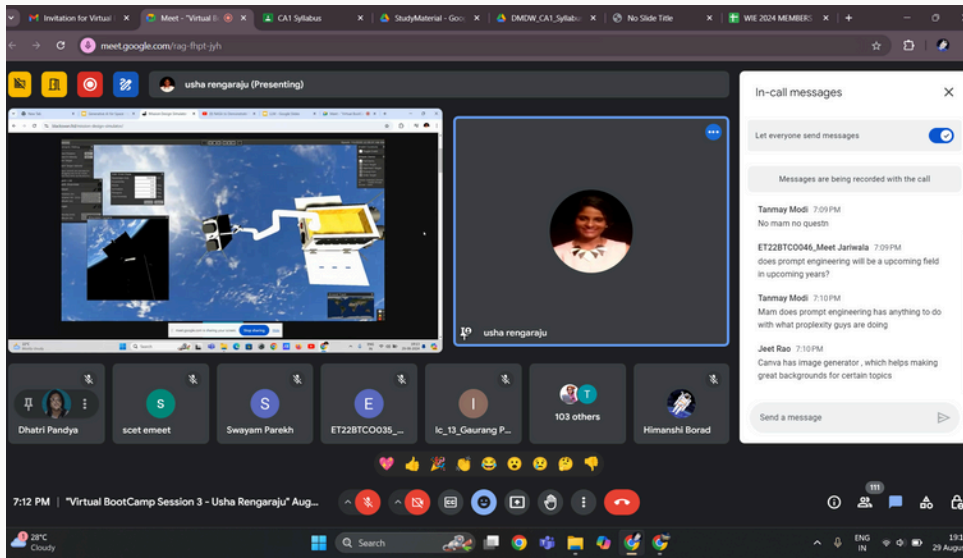
DRIJESH PATEL

Cyber Security Engineer
Manager
IBM

28th Aug, 2024

**Innovate, Implement,
Iterate: A Roadmap for
Lasting Product Success**





USHA RENGARAJU
Exa Protocol
Founder, NeuroAI

29th Aug, 2024

Generative AI for Space

SAGAR AHIR
Founder,
Krishyam Design

30th Aug, 2024

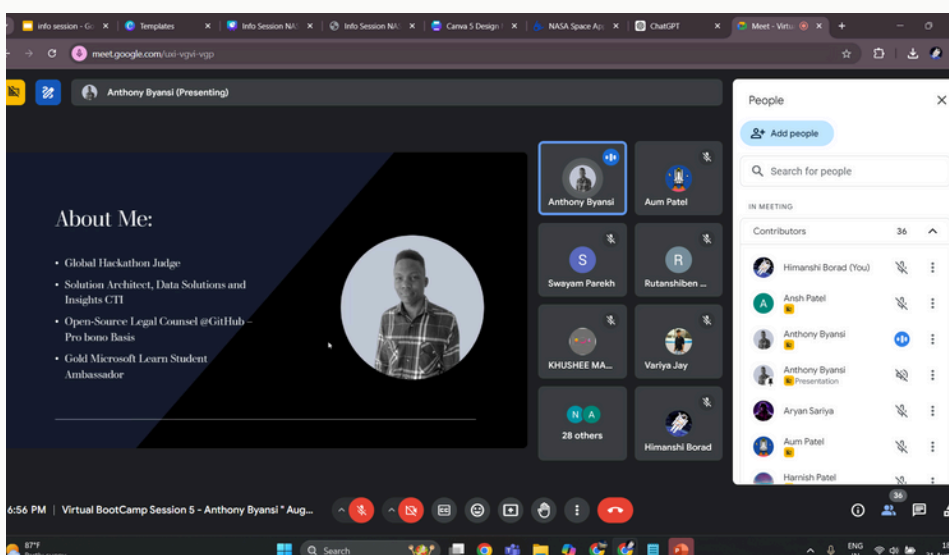
The Art of Design:
Creating Effective and
Engaging Visuals



ANTHONY BYANSI
Gold MLSA
Data Engineering
CTI Africa

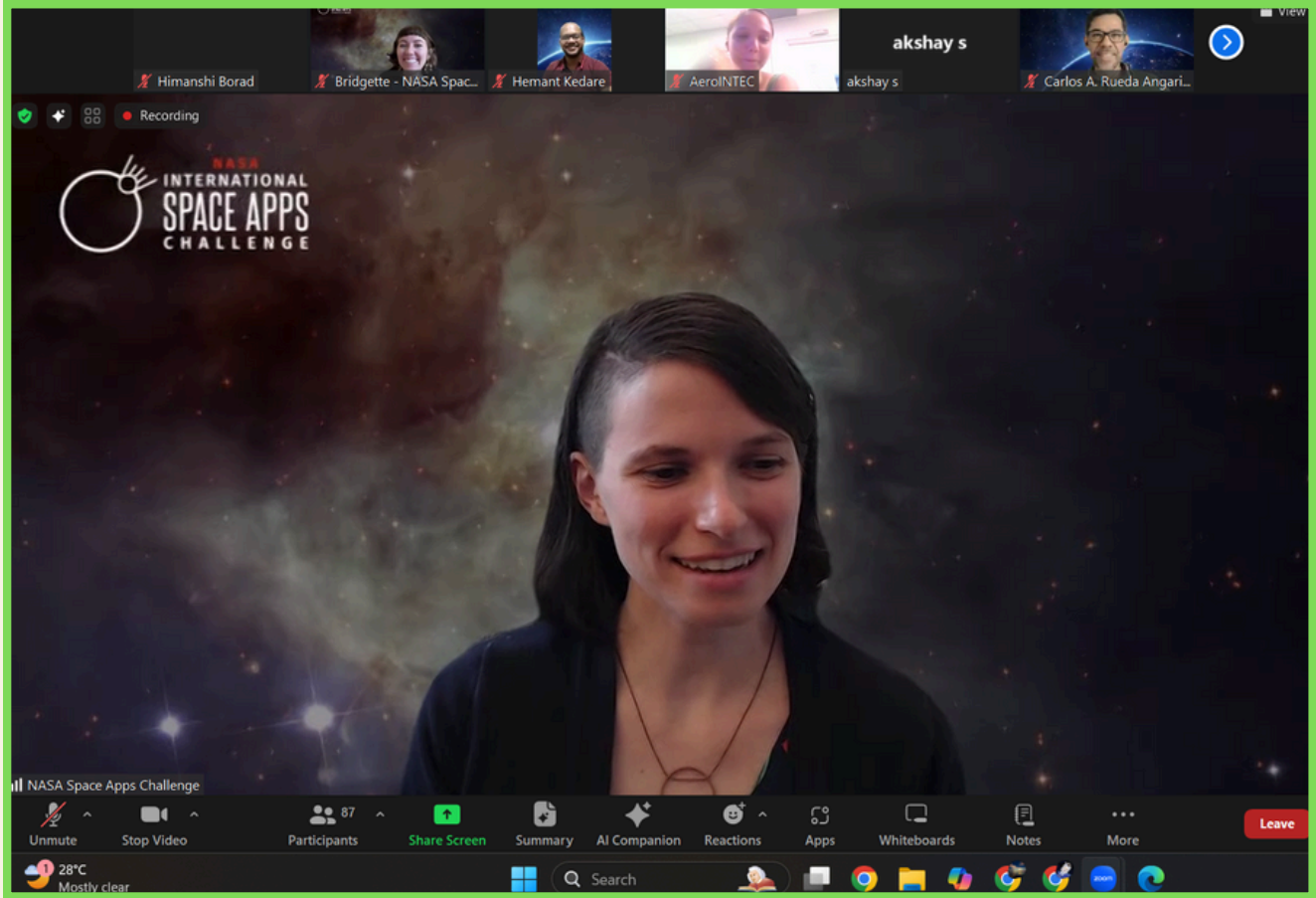
31st Aug, 2024

Think like a Judge:
Inside Tips and Tricks for
Hackathon Success

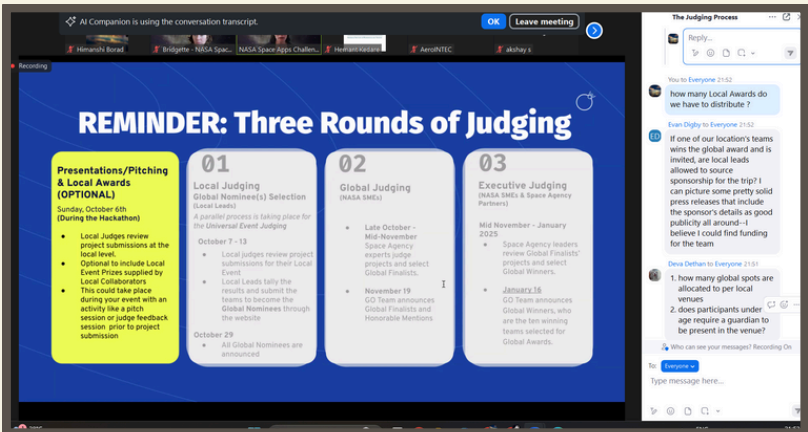


Meeting with Global Organizing Team

NASA International Space Apps Challenge 2024

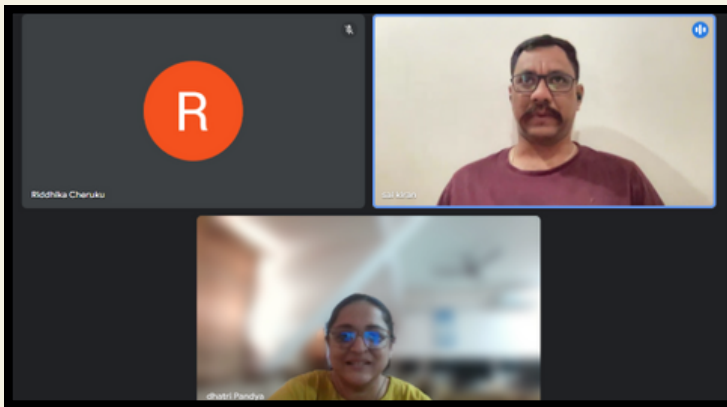


Allison James
on
Judging
Criteria



Meeting with Sathwik Polineni & Katapally Saikiran

KATAPALLY SAIKIRAN



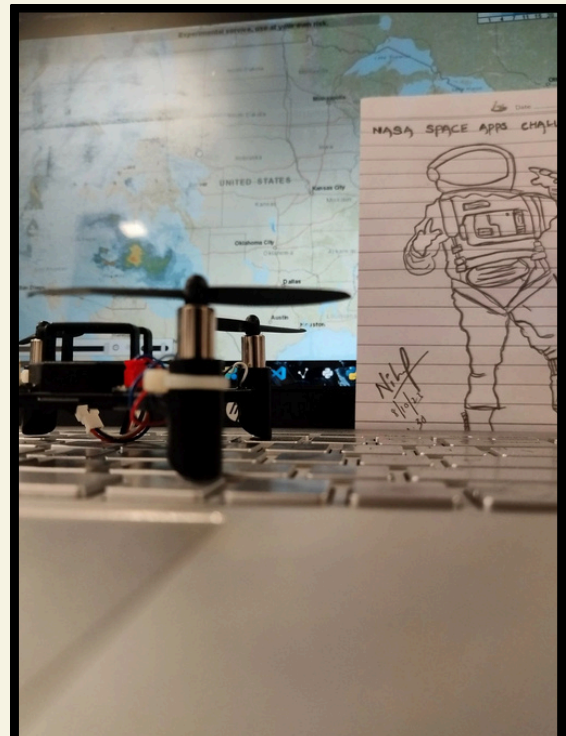
Interacting with Katapally Saikiran, an enthusiastic mentor and contributor to NASA Space Apps Hyderabad, was insightful. His guidance and expertise in nurturing innovative ideas have been instrumental in shaping successful projects and empowering participants.

Insightful mentorship from a dedicated contributor shaping impactful Space Apps projects.

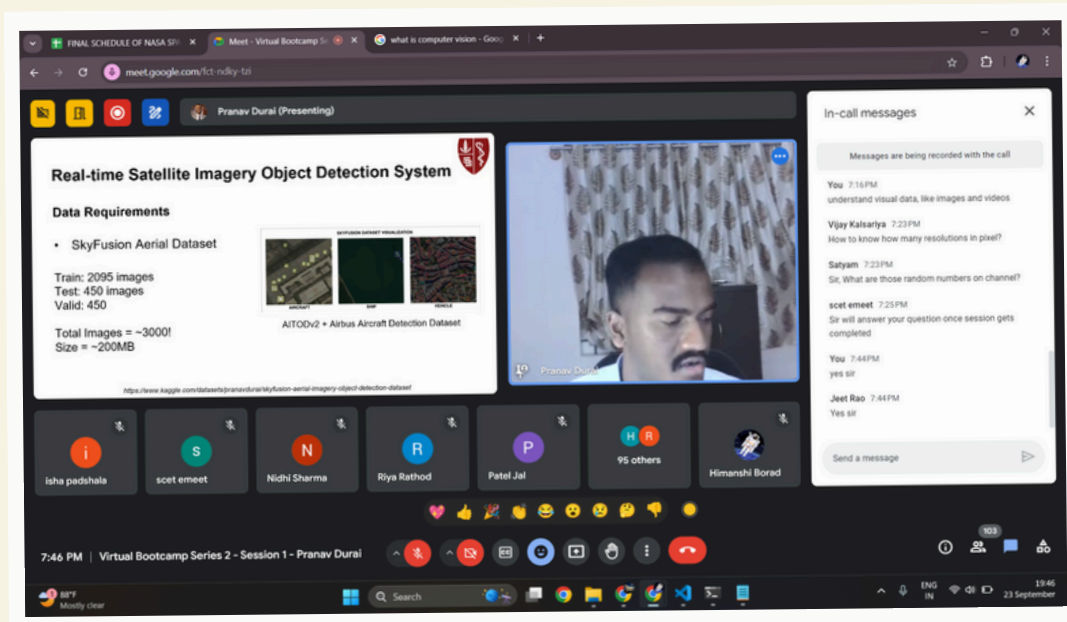


Meeting Sathwik Polineni, a NASA Space Apps Challenge winner, was an inspiring experience. His passion for leveraging technology to solve real-world challenges using NASA's open data highlighted the incredible opportunities the hackathon provides for innovation and collaboration.

An inspiring encounter with a NASA Space Apps Challenge winner driving innovation through NASA's open data.



SATHWIK POLINENI



PRANAV DURAI
Research Fellow at
Stanford University
Palo Alto, USA

23rd Sep, 2024

**Gentle Introduction on
Computer Vision**

MANUEL PIMENTA
Founder and CEO,
Virtual Moon

24th Sep, 2024

**Virtual Moon: Your
Spacetime Portal To The
Moon**



Virtual Bootcamp 2

23rd - 24th September, 2024

NASA International Space Apps
Challenge 2024

Awareness Programs

26th September, 2024; Thursday
NASA International Space Apps Challenge 2024



SCHOOL SESSION



Awareness Programs

27th September, 2024; Friday

NASA International Space Apps Challenge 2024



COLLEGE SESSION





Offline Info Session

SARVAJANIK COLLEGE OF
ENGINEERING AND TECHNOLOGY

Unlock the secrets to success at the NASA Space Apps Challenge with our Offline Info Session—your guide to innovation and collaboration!

An Offline Info Session for NASA Space Apps is a pre-hackathon event designed to prepare participants for the challenge. It provides insights into the hackathon's structure, themes, and problem statements while introducing NASA's open data and tools. Participants can connect with like-minded individuals, build teams, and brainstorm innovative ideas. These sessions often feature success stories, tips from mentors, and opportunities to clarify doubts. They serve as a platform to inspire creativity and collaboration, setting the stage for an impactful hackathon experience.



Offline Info Session

**SARVAJANIK COLLEGE OF
ENGINEERING AND TECHNOLOGY**

30TH SEPTEMBER, 2024

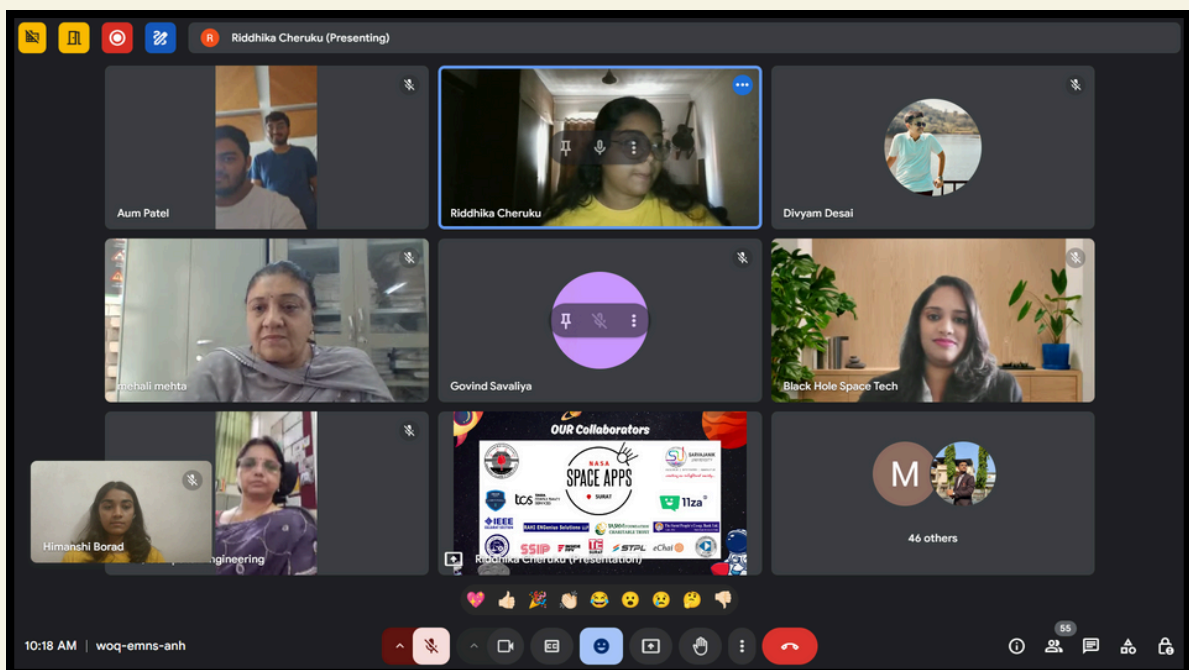


Inauguration Ceremony

5th October, 2024; Saturday

NASA International Space Apps Challenge 2024

The inauguration of the NASA Space Apps Hackathon Surat 2024 on October 5th, 2024, set the stage for a weekend of innovation and collaboration. The event celebrated exploration and diversity, inspiring participants to tackle real-world challenges using NASA's open data.

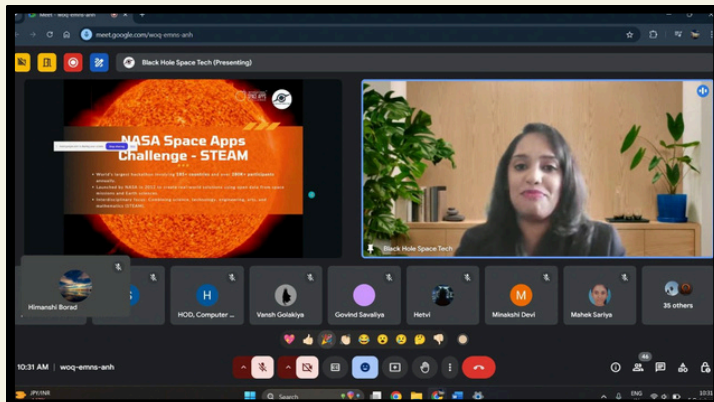
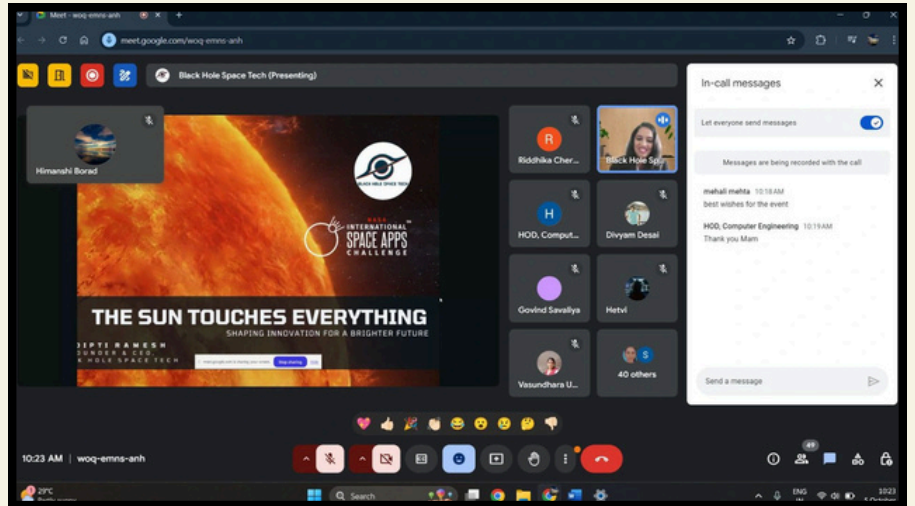


The inauguration of the NASA Space Apps Hackathon Surat 2024 on October 5th, 2024, marked the start of a weekend dedicated to innovation, creativity, and collaboration. With the theme “The Sun Touches Everything,” this globally renowned hackathon united participants from diverse disciplines to solve real-world challenges using NASA's open data. The ceremony celebrated exploration and diversity, providing students, professionals, and innovators a platform to connect, share ideas, and create impactful solutions in science, technology, and space exploration.

Keynote Speaker

5th October, 2024; Saturday

NASA International Space Apps Challenge 2024

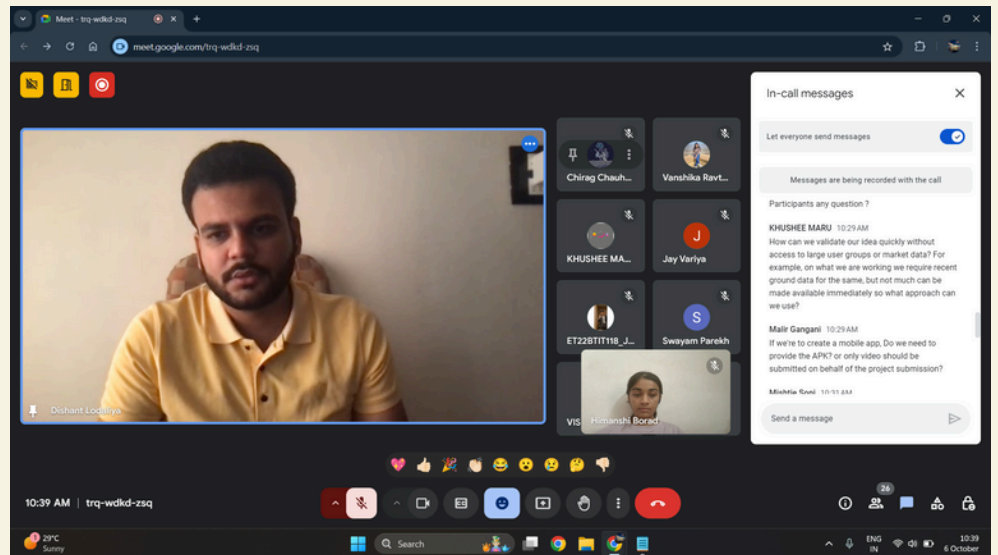


DIPTI RAMESH

Dipti Ramesh is the Founder and CEO of Black Hole Space Tech, a leading organization fostering innovation in space technology. She actively contributes to initiatives like NASA's Space Apps Challenge, inspiring STEAM innovation globally.

Dipti Ramesh, a trailblazer in space technology and innovation, graced the NASA Space Apps Challenge, Surat 2024, as the Keynote Speaker. Her enlightening session delved into the intricacies of the Solar Event 2024, offering a fascinating exploration of solar energetic particles, their impact on Earth, and the ongoing dynamics of Solar Cycle 25. She also shared valuable knowledge about the geomagnetic system and its critical role in understanding solar weather and space exploration. Her address inspired participants to delve deeper into this year's theme, encouraging innovative ideas around solar phenomena and their influence on our planet and beyond.

DISHANT LODALIYA



In the recently concluded NASA Space Apps Challenge Surat, we had the privilege of hosting Dishant Lodaliya, the Information Technology Head at Whitelion, as a mentor. Dishant, with his extensive experience in the tech industry, including roles at AWS and JPMC - Chase Travel, and his certifications in cloud technologies, provided invaluable insights to the participants.

During the mentoring session, Dishant engaged with participants in an interactive Q&A, offering guidance on technology, innovation, and career development. His session was a great opportunity for attendees to learn from seasoned professional, enriching their experience at the event and broadening their knowledge in the tech field.

Mentoring Session

6th October, 2024; Sunday
NASA International Space Apps Challenge 2024

Judges

MEET OUR JURIES BEHIND THE
INNOVATION!

DISHANT LODALIYA
Information Technology Head
Whitelion



DIPTI RAMESH
CEO & Co-Founder
Black Hole Space Technology

GARVIT CHORARIA
Co-Founder
11za



BHOOMI GADHIYA
Engineering Lead - Android
Box Box Club



RAVI BHATT **SOUMYA BASAK** **SACHINKUMAR TAILOR**
Assistant Consultant Technical Lead Autonomous Solution Architect
System and Robotics

Tata Consultancy Services



PARTH BHATT
Assistant Teaching Professor, Researcher & GIS Program Director
Michigan Technological University

Judges

MEET OUR JURIES BEHIND THE
INNOVATION!



Prof. (Dr.) Keyur Rana

Professor
Computer Engineering Department
SCET, Surat

Prof. (Dr.) Bintu Kadhiwala

Assistant Professor
Computer Engineering Department
SCET, Surat



Prof. Jaydeep Barad

Assistant Professor
Computer Engineering Department
SCET, Surat

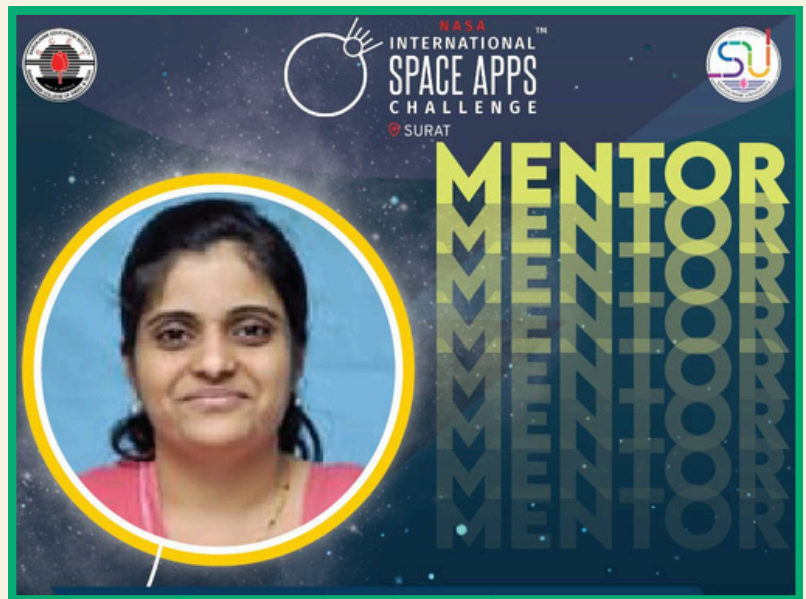


Mentors

BACKBONE OF OUR INNOVATION JOURNEY!

Prof. Vandana Joshi

Assistant Professor
Computer Engineering Department
SCET, Surat



Prof. Jaydeep Gheewala

Assistant Professor
Computer Engineering Department
SCET, Surat

Nishant Painter

Founder,
CEO of Shivantra



Charmy Patel

Assistant Professor
Ramkrishna Institute of Computer
Education, Surat



BACKBONE OF OUR INNOVATION JOURNEY!

Mentors

Prof. Nitya Suraj

Assistant Professor
Information Technology Department
SCET, Surat



Jay Ketanbhai Patel

Teacher
Chandulal Chhaganlal Shah
Sarvajanic High English School
SCET, Surat





Prof. Vivek Champaneria

Assistant Professor
Information Technology Department
SCET, Surat

Prof. Palak Desai

Assistant Professor
Computer Engineering Department
SCET, Surat



Dr. Nitin Sakhare

Assistant Professor
Computer Engineering Department
VIIT, Pune

Mentors

BACKBONE OF OUR INNOVATION JOURNEY!

Mentors

BACKBONE OF OUR INNOVATION JOURNEY!



Dr. Krishna Delvadiya

Assistant Professor
Information Technology Department
SCET, Surat

GLOBAL NOMINEE

Global Nominees are exceptional projects from local Space Apps events, selected for international recognition based on innovation and impact.



[LINK](#)

VISIONARY EXPLORERS COMMUNITY MAPPING

A lifesaving GIS tool mapping landslide-prone areas in India, enhancing disaster preparedness and resilience through real-time risk assessment and evacuation planning.

LOCAL IMPACT AWARD

GLOBAL NOMINEE

Global Nominees are exceptional projects from local Space Apps events, selected for international recognition based on innovation and impact.



[LINK](#)

TEAM LINE

LANDSAT REFLECTANCE DATA: ON THE FLY AND AT YOUR FINGERTIPS

An innovative web application bridging ground-based spectral observations with Landsat data, enabling precise environmental monitoring and advancing research in climate science, agriculture, and urban planning.

BEST USE OF DATA AWARD

GLOBAL NOMINEE

Global Nominees are exceptional projects from local Space Apps events, selected for international recognition based on innovation and impact.



[LINK](#)

SPACE CIPHERS RACE IN THE CLASSROOM

An interactive web app bringing ocean science into classrooms with 3D visualizations, real-world PACE mission data, and engaging tools like marine life simulations, quizzes, and community pledges to inspire environmental stewardship.

ART & TECHNOLOGY AWARD

GLOBAL NOMINEE

Global Nominees are exceptional projects from local Space Apps events, selected for international recognition based on innovation and impact.



[LINK](#)

STELLER PIONEERS SDGS IN THE CLASSROOM

A student-focused website presenting concise, interactive, and visually engaging information on all 17 UN SDGs, featuring presentations with quizzes, graphs, and solutions to make learning dynamic and accessible.

GLOBAL CONNECTION AWARD

GLOBAL NOMINEE

Global Nominees are exceptional projects from local Space Apps events, selected for international recognition based on innovation and impact.



[LINK](#)

LIFE LIKE EARTH (LLE)

CHRONICLES OF EXOPLANETS EXPLORATION

A mobile app that makes learning about exoplanets fun and accessible through interactive 3D models, quizzes, and engaging content, inspiring curiosity and education for all.

BEST USE OF TECHNOLOGY AWARD

Local Winners

[LINK](#)

Agri_Visionaries

Leveraging Earth Observation
Data For Informed Agricultural
Decision-Making



Elena_Team

Tell Us A Climate Story!

[LINK](#)



[LINK](#)

Astral Adventures

Galactic Games: Fun In
Microgravity Environment

MOST INSPIRATIONAL AWARD

Local Winners

[LINK](#)

Galaxy Crew

Tell Us A Climate Story!



[LINK](#)

Hunter Lioness

Beyond Sunlight: An Aquatic
Chemosynthetic World



[LINK](#)

The Nova

Show Us What May 2024
Geomagnetic Storm Looked
Like



BEST STORYTELLING AWARD

Local Winners

[LINK](#)

AstroCoder

Tell Us A Climate Story!



Tech Pandavas

Tell Us A Climate Story!

[LINK](#)

GALACTIC IMPACT AWARD

Local Winners

[LINK](#)

Team Mars

Create an Orrery Web
App



AkashGanga

Show Us What May 2024
Geomagnetic Storm
Looked Like

[LINK](#)

BEST USE OF SCIENCE AWARD

Local Winners

[LINK](#)

**404 Innovators
Found**

Global Protocol Games



Team Rocket

Galactic Games

[LINK](#)



BEST MISSION CONCEPT AWARD

Dr. Kiran Pandya
Provost



COLLABORATOR CERTIFICATE DISTRIBUTION

Dr. Hiren Patel
Principal

Sarvajanik College of
Engineering and
Technology





Institute of Electrical and Electronics Engineers (IEEE)

Prof. (Dr.) Chirag N. Paunwala

Professor
Electronics & Communication
Engineering

COLLABORATOR CERTIFICATE DISTRIBUTION



Ashish Desai

I/C Registrar
Sarvajanik University

**STUDENT STARTUP
AND INNOVATION
CELL (SSIC), SCET**

Indian Society for Technical Education (ISTE), SCET

Dr. Mehali Mehta

Associate Professor
Civil Engineering
Department



COLLABORATOR CERTIFICATE DISTRIBUTION

Prof. (Dr.) Keyur Rana

Professor
Computer Engineering
Department

Computer Society of
India (CSI), SCET



Collaboration between NASA Space Apps Challenge 2024 Surat and STPL



We are honored to be recognized as a collaborator for the NASA Space Apps Challenge 2024 Surat, hosted by Sarvajani College of Engineering & Technology and Sarvajani University. This collaboration highlights our commitment at STPLGlobal to fostering innovation and driving the tech-forward vision of a brighter future through strategic partnerships.

At STPLGlobal, we are dedicated to empowering the next generation of tech leaders, nurturing creativity, and pushing the limits of technology. Through this collaboration, we aim to inspire and support next-gen innovators while shaping the future of technology with cutting-edge solutions. Together, we are paving the way for a brighter future and empowering students to become the creative minds of tomorrow.



DISHANT LODALIYA

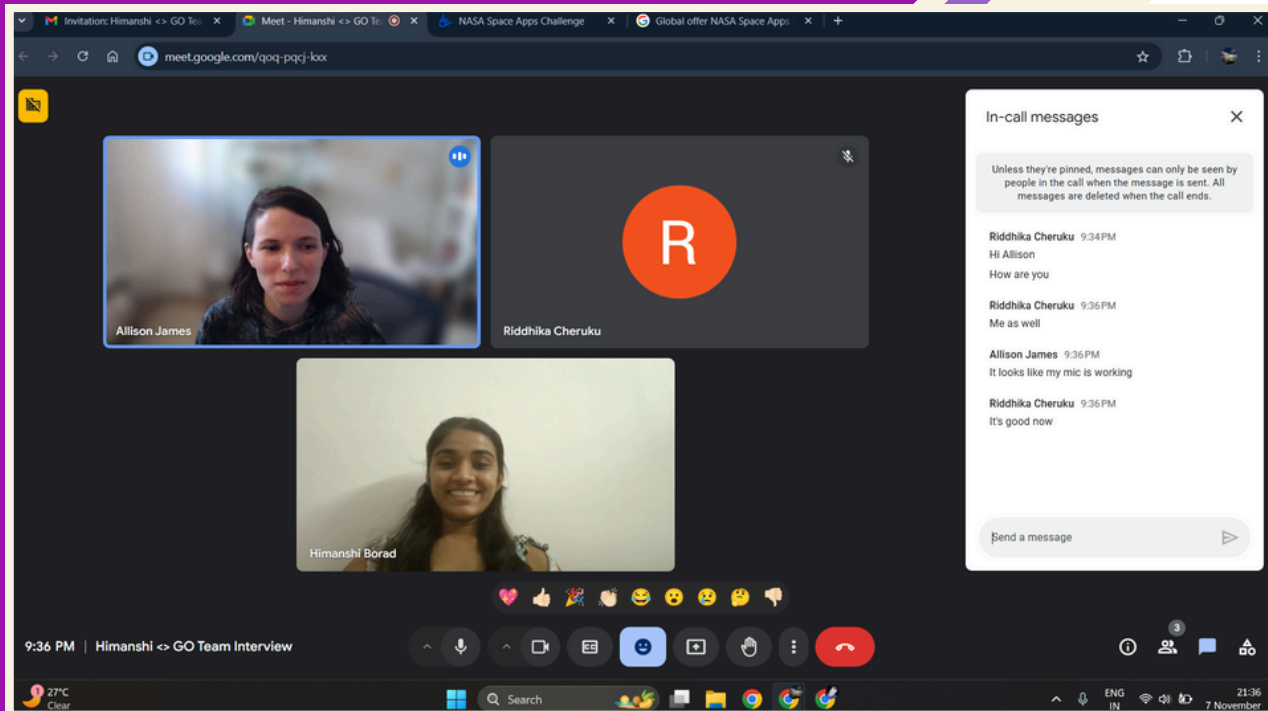
Information Technology Head
Whitelion

Co-Founder
11za

GARVIT CHORARIA



INTERVIEW WITH GLOBAL ORGANIZING TEAM



ALLISON JAMES

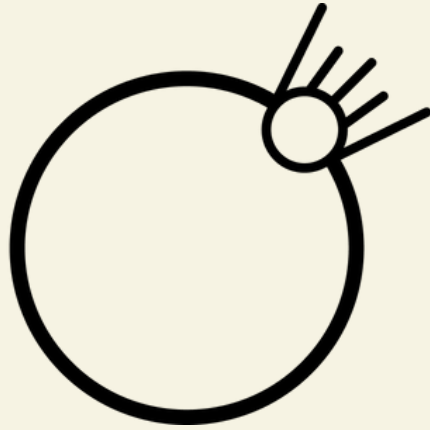
Manager GO TEAM

7th November, 2024

Thursday

The post-hackathon interview with Allison James shed light on the highlights of the NASA Space Apps Surat 2024 event. During the discussion, Allison applauded the exceptional projects developed by participants, particularly those showcasing innovative approaches to real-world challenges using NASA's open data. She also commended the emphasis on Women's Empowerment, celebrating the strong representation of women in leadership and participation.

The interview highlighted the significant role of collaborators in making the hackathon a success, showcasing their support in fostering creativity and innovation. Allison also discussed the impact of the hackathon in Surat, emphasizing how it inspired the local community to explore science and technology, bringing global problem-solving to a local stage and leaving a lasting legacy in the city.



NASA TM
INTERNATIONAL
SPACE APPS
CHALLENGE
SURAT

THANK
YOU

Dr. Dipali Kasat

Chairperson

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