**Nirma University**

**Press note:** NASA International Space Apps Challenge

E-cell Nirma University in association with team Arush, the SRM Institute of Science and Technology organised the three-day NASA Space Apps Challenge at Nirma University campus from 7th–9th October 2023 with 600+ registration.

Dr. Mehul Naik, Head, Incubation Centre at Nirma University, and Rashmika Shah, Manager, Incubation Centre inaugurated the event. The inauguration witnessed students and teams from various colleges and universities of Ahmedabad. With over 95 teams & 612 participants from more than 15 different Universities all over INDIA. The teams worked on various problem statements announced by the Nasa space application challenge.

Teams from different cities except for Gujarat states– Bhopal, Pune- Jaipur- Rajasthan, Bangalore.

College name- Adani Institute of technology, Nirma University, Silver Oak College, Sal Institute of Technology, Gandhinagar Institute of Technology etc..

The inaugural ceremony was a reflection of the grandeur and significance of the event. Dr. Mehul Naik with his visionary leadership, emphasized the importance of fostering an entrepreneurial spirit among the youth and the potential of space technology as a catalyst for innovation. Nirma University is proud to be part of this global endeavour, and we are excited to witness the brilliance that participants will bring to the table and we believe it will be a transformative experience for all involved.”

The event, initiated by NASA, the United States' premier space agency, served as a platform for participants to explore creative solutions to challenges in the field of space technology and science. This year's hackathon featured a diverse group of participants, including experts and students, working together to advance innovation in space exploration and technology. This event brought together bright minds and innovators from around India added Incubation Manager, Rashmika Shah.

Over the course of the 48-hour event, participants tirelessly formed teams and brainstormed innovative ideas to address the multifaceted challenges presented by NASA. Industry experts and academicians were invited to mentor the participants. More than 15 mentors came in and inspired the participants. Some notable mentors who motivated students were Mr. Chirag Kakani, Lead product manager at Apna, Mr. Moin shirazi, Project manager at Tech lead ,Mr. Aditya dave, Alumni of Nirma University, Mr Mitesh Shethwala- Founder and CEO Currently, Dr.Trilok Sharma professor, Nirma University.

Judges Details:

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Mr. Ragesh Bateriwala – Managing director, Keepsake Engineering and consultancy

Mr.Ashwini Vairu - Founder and CEO @Resourceful | Creating an ecosystem.

Mr. Himanshu Patel – Scientist /Engineer ISRO

The NASA International Space Apps Challenge created in-person and virtual teams to solve challenges using open-source data from NASA and its Space Agency Partners. With their boundless creativity, participants embarked on a journey of coding, design, and innovation to meet the competition's demands. Amidst the intense problem-solving atmosphere, participants benefited from invaluable mentoring sessions. These seasoned experts generously shared knowledge, provided feedback, technical advice, and strategic direction, empowering teams to enhance their solutions effectively.

Three teams out of 95 teams are nominated for the next phase of competition by the esteemed judges.

1. Team Caster (GeoAInova):

The "Detecting Deforestation Using Foundation Model" project is a critical endeavour aimed at tackling the environmental problem of deforestation. We developed sophisticated AI models by combining approaches such as Pixel- Wise Change Detection, Tile-Based Intensity-Based Change Detection, and Temporal Analysis. These models assist us in detecting deforestation early by analysing changes in photos. What's very noteworthy about this initiative is that it may benefit not just large organisations, but also smaller groups and non-governmental organisations (NGOs) that aim to safeguard the environment. It provides them with the tools they need to monitor and combat deforestation, even if they have little resources. Deforestation is a major issue because it causes the extinction of animal and plant species, exacerbates climate change, and harms our ecosystems and water

1. Team Cybernauts:

we developed a machine learning model which analyzes the data from the satellites launched by NASA named "ACE" which gives X,Y and Z components of magnetic field of both earth and sun and the feature was that the dipole of the magnetic field of the collision of both the fields. We mainly used Python languages and used its predefined libraries Tensorflow, Keras, MatPlotlib, NumPy, Steamlit. We trained our model using 24 lakh data provided in the resources and cleaned that data to produce efficient and accurate results and used SVM( and LSTM(Long Short Term Memory) algorithms and achieved 83% accuracy.

1. Team Quantum:

With a vision to achieve success in future, we took a step in direction of finding "habitable exoplanets: creating worlds beyond our own". Here we have compiled the pre-existing information and on basis of that we virtually created an exoplanet that is having better features for existence of life. This is very important as there will be a demand of such land mass in coming future because of increasing threats towards the planet earth.