

# भारत अंतरिक्ष अकादमी

अंतरिक्ष शिक्षा विभाग (आईएसडब्ल्यू)

बी ए/14 बी जनकपुरी

नई दिल्ली - 110058, भारत

दूरभाष संख्या : 011-44749707, 8130317917

ईमेल: info@isa.ac.in, contact@isa.ac.in

वेबसाइट: www.isa.ac.in



## India Space Academy

Department of Space Education (ISW)

BA/ 14 B Janakpuri

New Delhi - 110058, India

Telephone no: 011-44749707, 8130317917

Email : info@isa.ac.in, contact@isa.ac.in

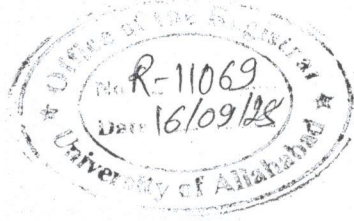
Website: www.isa.ac.in

Ref: ISA/IND/RSE/123/2025

Date: 11 September, 2025

From

Director,  
India Space Academy,  
New Delhi.



Dean (Science) / Director, IIT

R  
17/09/25

To

Registrar, Vice Chancellor, Principal,  
All Central Universities, State Universities, Deemed Universities,  
State Private Universities, Colleges, Institutions,  
All States - India.

REGISTRAR  
कुलसचिव

Subject: Regarding the registration of students and faculty of your University/College/Institution for Six - Day Online program on "AI & ML in Space Sector"

Respected Sir/Madam,

This specialized training program is designed to equip students, faculty, and researchers with cutting-edge knowledge of Artificial Intelligence (AI) and Machine Learning (ML) and their transformative role in the space sector. As space missions grow more complex, sensors generate massive volumes of data, and the demand for autonomous systems accelerates, AI and ML have become essential enablers of innovation and efficiency in space science and engineering..

The Government of India, under the visionary leadership of **Honorable Prime Minister Shri Narendra Modi Ji**, is driving major reforms in the space sector to strengthen India's role in global space exploration and industry. Progress in advanced propulsion technologies, private participation, and commercialization of space has opened up exciting career and research opportunities for students, educators, and professionals.

In alignment with the vision of Viksit Bharat, India Space Academy, an autonomous part of India Space Week, is delighted to announce Our Six Days Program AI & ML In Space Sector . This Program will provide students and faculty with insights into the fundamentals of Space Exploration ,Operations, Robotics , and the future of AI (Artificial intelligence) and ML (Machine Learning) in India and worldwide. It aims to equip participants with the knowledge and inspiration to contribute towards India's growing space ecosystem.

### Program Details:

- Day 1 — Intro to AI & ML in Space
- Day 2 — Space Exploration & Robotics
- Day 3 — Satellite Operations
- Day 4 — Spacecraft Systems
- Day 5 — Data Analysis & Pattern Recognition
- Day 6 — Optical Communication & Case Studies

Dr. V. K. Pandey

Please do the needful.

19/9/2025



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### Important Updates

Mode: Online (Virtual Workshop)

Program Start Date : 13 October 2025

Program Last Date : 18 October 2025

Session Length : 90 Minutes (Per Day)

Total Duration : 6 Days

Venue : Zoom Platform

Language: English

Eligibility: Undergraduate & Postgraduate students, Faculty members, research scholars, Enthusiasts

Tuition Fee: ₹1200/- (Students)

Certificate: Participants will receive an official Certificate of Completion upon successful participation

Completion upon successful participation

### Registration:

Start Date: 11<sup>th</sup> September 2025

End Date: 10<sup>th</sup> October 2025,

Registration Link: [https://indiaspaceweek.org/ai\\_ml/](https://indiaspaceweek.org/ai_ml/)

We request Your College to kindly circulate this information among students and faculty members and encourage their active participation. This Program will not only enhance technical knowledge and practical skills but also inspire the next generation of space scientists, engineers, and innovators.

Your support in ensuring wide participation will contribute to strengthening India's position in global rocket science and space innovation

भवदीय

निदेशक/Director

भारत अंतरिक्ष अकादमी/India space Academy

नई दिल्ली/New Delhi

निदेशक कार्यालय/Director Office

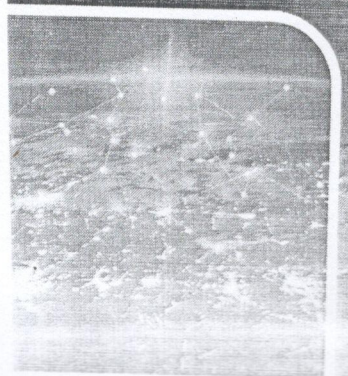
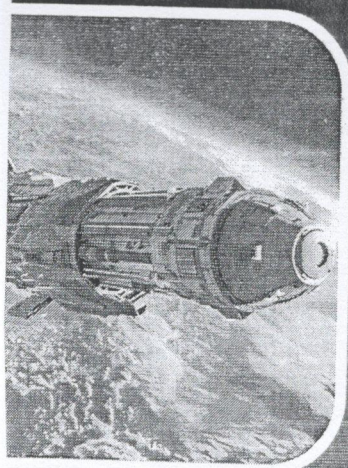
भारत अंतरिक्ष अकादमी/India Space Academy





# INDIA SPACE ACADEMY

DEPARTMENT OF SPACE EDUCATION  
INDIA SPACE WEEK



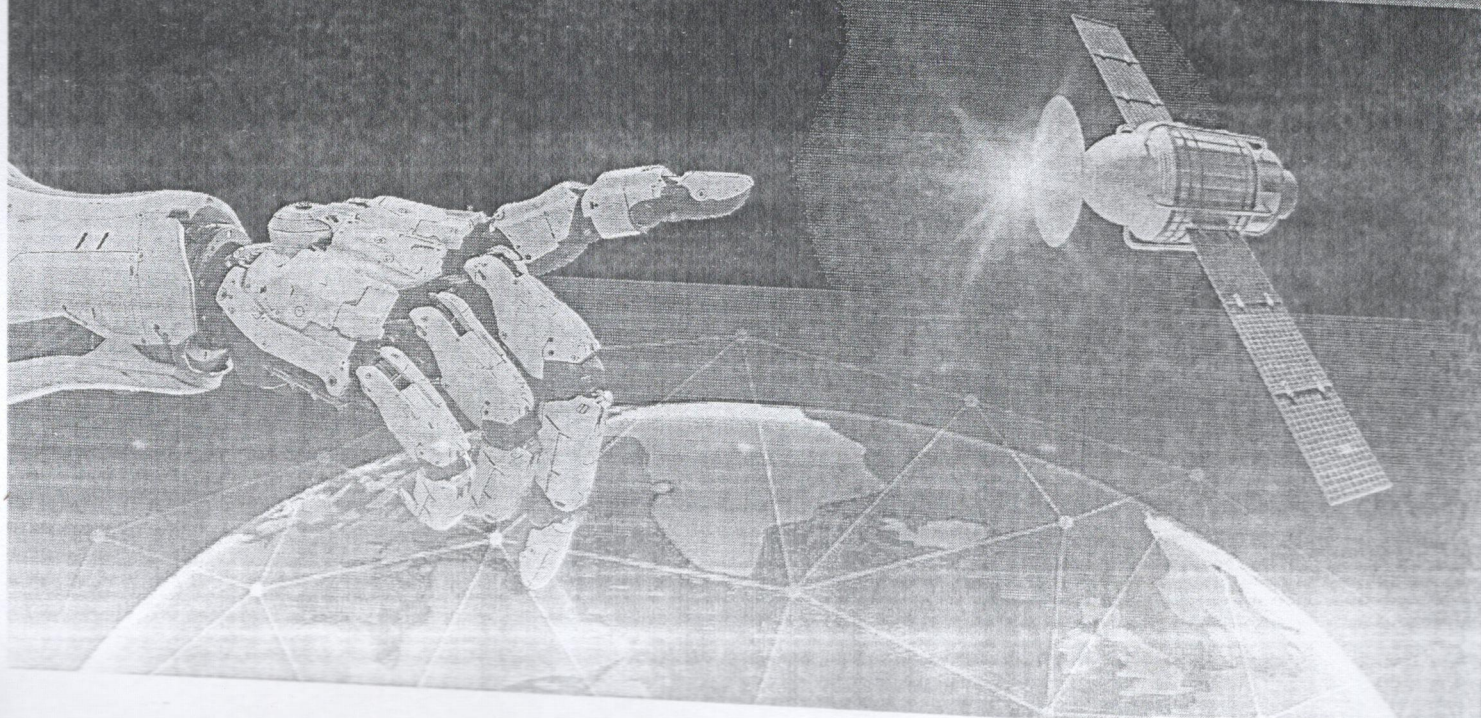




# USAGE OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN THE SPACE SECTOR

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ORGANIZED BY INDIA SPACE ACADEMY







# INDIA SPACE ACADEMY



India Space Academy is an academic institution under the Department of Space Education of India Space Week.

India Space Week is an autonomous body with support from central and state governments. The role of India Space Week is to promote space education and employment among the students, teachers, and research scholars of schools, colleges, universities, and institutions.

The academy develops workshops that spread awareness about the current requirements of the space industry. Also, it develops various programs to equip the students with the right information, skills, practical exposure, research exposure, and training to make them future-ready.





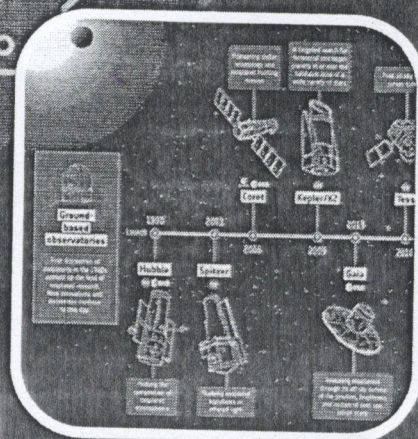
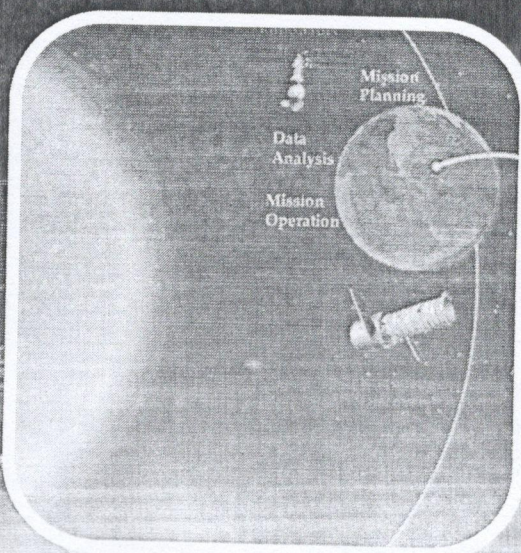


# PROGRAM OVERVIEW



This specialized training program is designed to introduce students, faculty, and scholars to the practical applications of Artificial Intelligence (AI) and Machine Learning (ML) in the space sector. With increasing mission complexity, vast data volumes from advanced sensors, and the growing need for autonomous systems, AI and ML are becoming indispensable tools in space science and engineering.

The program provides focused instruction on applying AI/ML techniques to real-world space challenges, including mission operations, space data analysis, and onboard autonomy.



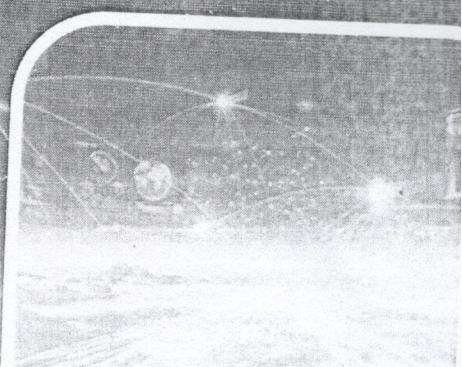
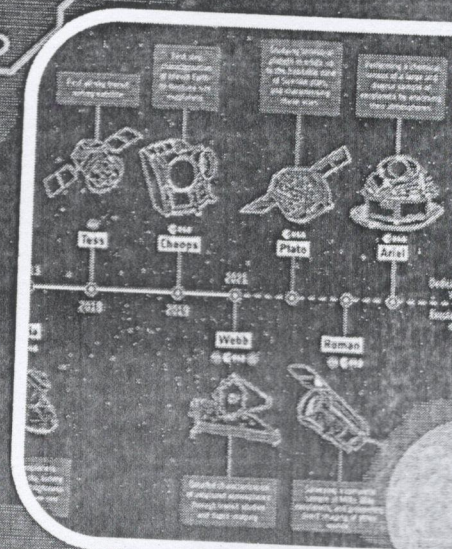
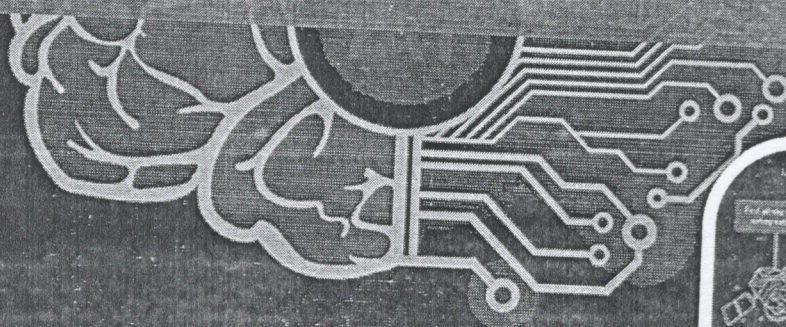




# OBJECTIVES



- Apply AI & ML algorithms for mission planning and predictive maintenance
- Process and analyze space datasets for telemetry and astronomical problems using Python libraries
- Develop strategies for deploying AI onboard spacecraft under real-time constraints
- Understand implementation frameworks for AI & ML in space systems
- Examine case studies from national and international space missions







# TRAINING SCHEDULE



## **Day 1 — Intro to AI & ML in Space**

→ Overview of key concepts and applications in missions

## **Day 2 — Space Exploration & Robotics**

→ Rovers, landers, autonomous systems and control

## **Day 3 — Satellite Operations**

→ Monitoring, orbit control, anomaly detection

## **Day 4 — Spacecraft Systems**

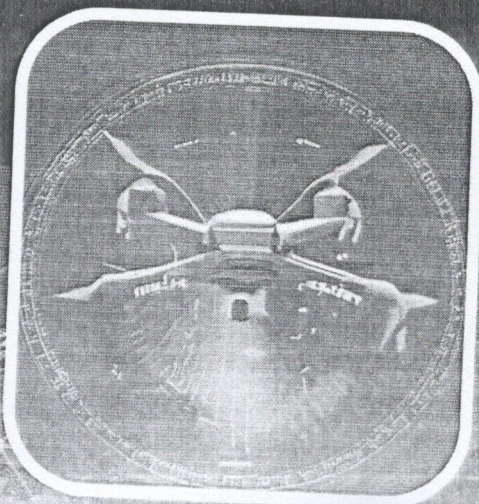
→ Onboard autonomy, AI decision engines

## **Day 5 — Data Analysis & Pattern Recognition**

→ Telemetry and astronomy data via ML

## **Day 6 — Optical Communication & Case Studies**

→ Signal optimization, final applications



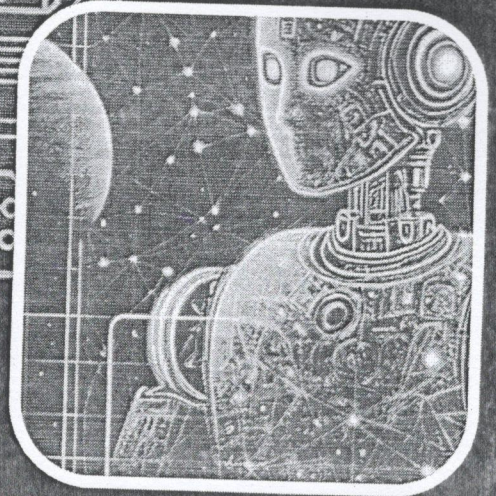




# BENEFITS OF PARTICIPATION



- Exposure to emerging technologies in the space domain
- Skill development aligned with national missions such as Skill India and NEP 2020
- Opportunity to engage with experts and practitioners in AI and space science
- Strengthening academic and research credentials in frontier technologies



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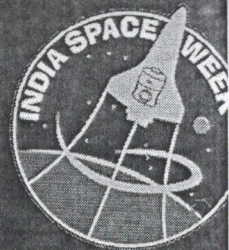


Skill India  
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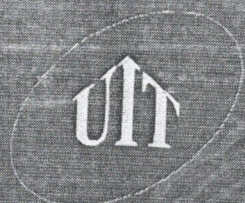




# PROGRAM SUPERVISOR



## DR. ASHOK GOPALAKRISHNAN



Learn Research  
Innovate

Professor Emeritus  
United Institute of Technology

District Coordinator (For  
Coimbatore)

INDIA SPACE WEEK

### About Dr. Ashok Gopalakrishnan

Dr. Ashok Gopalakrishnan is a senior academician and researcher with over three decades of experience in the fields of computer science, aerospace engineering, artificial intelligence, and environmental modeling, having served in key capacities at institutions such as NASA, IBM, the University of Texas at Austin, and ISRO.

He holds dual PhDs from the Georgia Institute of Technology, an MS from Oxford University, and an M.Tech from IIT Bombay.

His contributions include AI-based space mission planning systems such as Eagle Eye and CASPER at NASA, as well as ongoing research on black hole binaries supported by ISRO.

Dr. Gopalakrishnan has published over 285 research papers in reputed journals and has been recognized with awards such as the IBM WebSphere Champion (2013), the Indian Achievers Award for Excellence in Education (2017), and the Top 100 Global Leaders in Education (2019).

He currently serves as Professor Emeritus and leads multiple national space science outreach and education initiatives at the United Institute of Technology, Coimbatore, in collaboration with ISRO and other agencies.

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# PROGRAM DETAILS



- **Mode:** Online
- **Start Date of Registration:** 11 September 2025
- **Last Date of Registration:** 10 October 2025
- **Program Start Date:** 13 October 2025
- **Program End Date:** 18 October 2025
- **Total Duration:** 6 Days
- **Session Length:** 90 Minutes per Day
- **Eligibility:** Undergraduate & Postgraduate students, Faculty members, research scholars, Enthusiasts.
- **Tuition Fee (Non-Refundable):** ₹1200/-
- **Certificate:** Participants will receive an official Certificate of Completion upon successful participation
- **Registration Link:** [https://indiaspaceweek.org/ai\\_ml](https://indiaspaceweek.org/ai_ml)





# CONTACT INFORMATION



## INDIA SPACE ACADEMY

- Email: [contact@isa.ac.in](mailto:contact@isa.ac.in)
- Phone: 011-44749707
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- Website: [www.isa.ac.in](http://www.isa.ac.in)

## INDIA SPACE WEEK Regional Office (Central Eastern Zone)

- Email: [up@indiaspaceweek.org](mailto:up@indiaspaceweek.org)
- Phone: 0532-4031244

