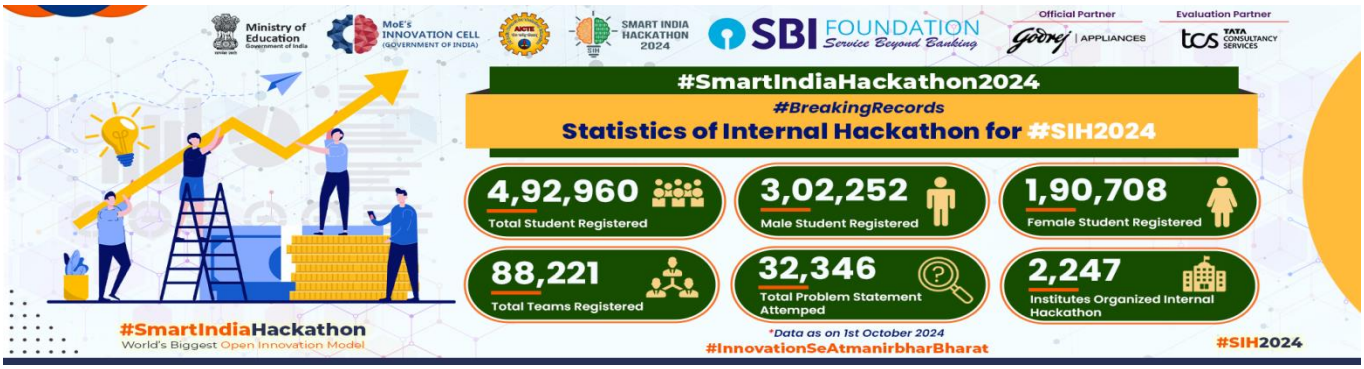
MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

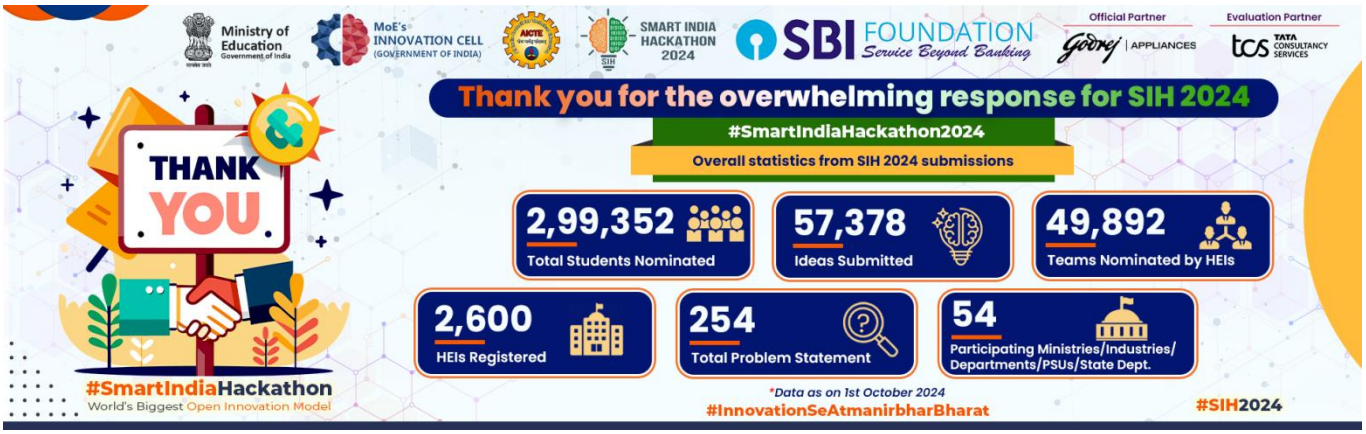
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Awards Received at different events

Smart India Hackathon (SIH) – 2024

(Hardware Edition)





Achievement	**:**	Selected for Grand Finale
Event	**:**	Smart India Hackathon (SIH) – 2024
Organized by	**:**	AICTE, MoE'S Innovacation Cell, I4C
Sponsored by	**:**	SBI, TCS, Godrej Enterprises
Event Place:	**:**	Indian Institute of Technology, Roorkee

Worked on:

PS Number	SIH1565
Category	Hardware
Theme	Clean & Green Technology
Organization	National Technical Research Organization (NTRO)
Problem Statement Title	Target detection by optimizing Anomaly Detection in Hyperspectral Image Processing using AI/ML

Student Details:

Roll No	Name of the Student	Year of Studying	Dept.
217Y1A05F5	P Navaneeth Reddy	IV	CSE
217Y1A05I5	A Vamshi	IV	CSE
217Y1A05F0	V Joshi Vishal	IV	CSE
217Y1A05E3	D. Gouthami	IV	CSE
217Y1A05G6	L. Roshan Kumar	IV	CSE
217Y1A05E1	K Dileep Kumar Reddy	IV	CSE

The **Smart India Hackathon (SIH) 2024** is a nationwide initiative by the Ministry of Education's Innovation Cell (MIC) and AICTE, aiming to provide students with a platform to solve pressing problems faced by society, industries, and government bodies. It encourages innovative thinking and problem-solving skills among students across India.

What is SIH 2024?

SIH 2024 is the 7th edition of this annual hackathon, featuring both **Software and Hardware editions**. Participants work in teams to develop innovative solutions for real-world problem statements provided by various ministries, departments, and industries.

Problem Statements

SIH 2024 presented **254 problem statements**, categorized into:

- **186 Software-related challenges**
- **68 Hardware-related challenges**

These problem statements span various themes, including:

- Robotics and Drones
- Transportation & Logistics
- Smart Automation
- Healthcare & Biomedical Devices
- Agriculture & Rural Development
- Clean & Green Technology
- Smart Education
- Security & Surveillance
- Space Technology

Team Formation & Eligibility:

- **Team Composition**: Each team must consist of **6 members**, including a **Team Leader** and **at least one female member**.
- **Institution Criteria**: All team members must be from the **same institution**; inter-college teams are not allowed.
- **Academic Level**: Participants can be from any year of study (E1 to E4).
- **Mentorship**: Teams may select mentors to guide them through the process.
- **Restrictions**: A student cannot be part of multiple teams, and team members cannot be changed after registration.

Registration Process :

1. **SPOC Registration**: Each institution must appoint a **Single Point of Contact (SPOC)**, typically a faculty member, who will handle all communications and registrations.
2. **Internal Hackathon**: Institutions conduct an internal hackathon to shortlist teams.
3. **Team Nomination**: The SPOC nominates up to **50 teams** (45 shortlisted + 5 waitlisted) based on the internal hackathon results.
4. **Idea Submission**: Nominated teams submit their ideas through the SIH portal.

Key Dates for SIH 2024:

- **Internal Hackathon**: Conducted by institutions in early September 2024.
- **Idea Submission Deadline**: September 12, 2024.
- **Final Submission Deadline**: Extended to September 30, 2024.

Grand Finale:

The **Grand Finale** of SIH 2024 was held concurrently at **51 nodal centers** across India.

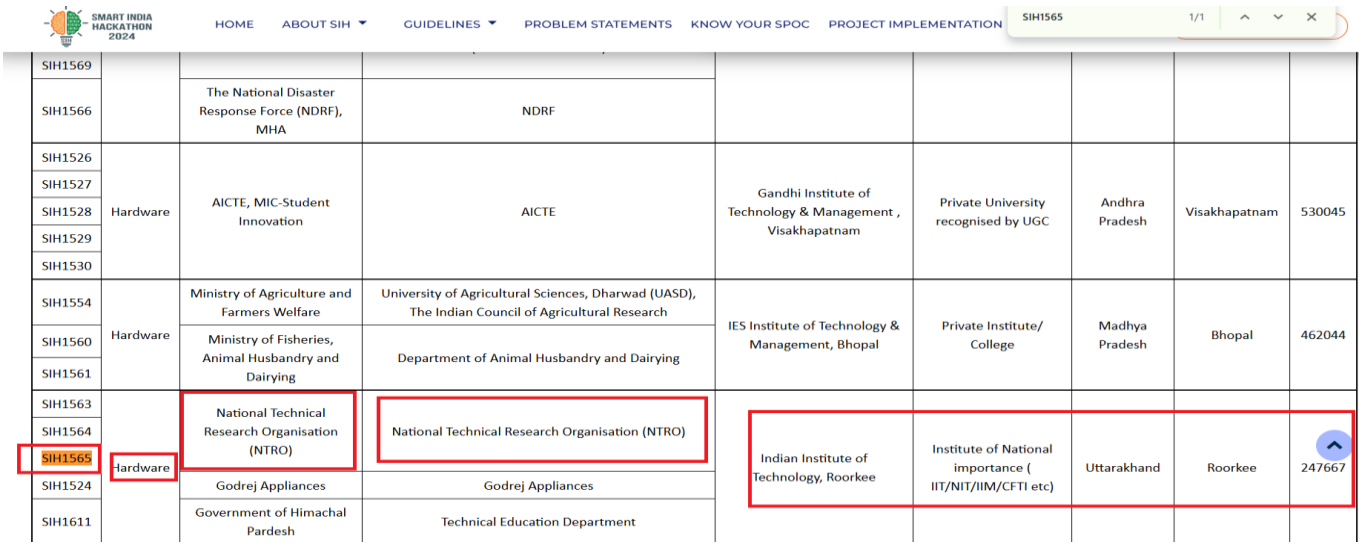
- **Software Edition**: A 36-hour nonstop coding event.
- **Hardware Edition**: Extended over several days to accommodate prototyping and testing.

Figure: Smart India Hackathon 2024 (Hardware Edition) at IITR

Figure: Certificates Received at SIH -24 Hardware Edition

Nodal Center List for SIH-2024 Grand Finale:

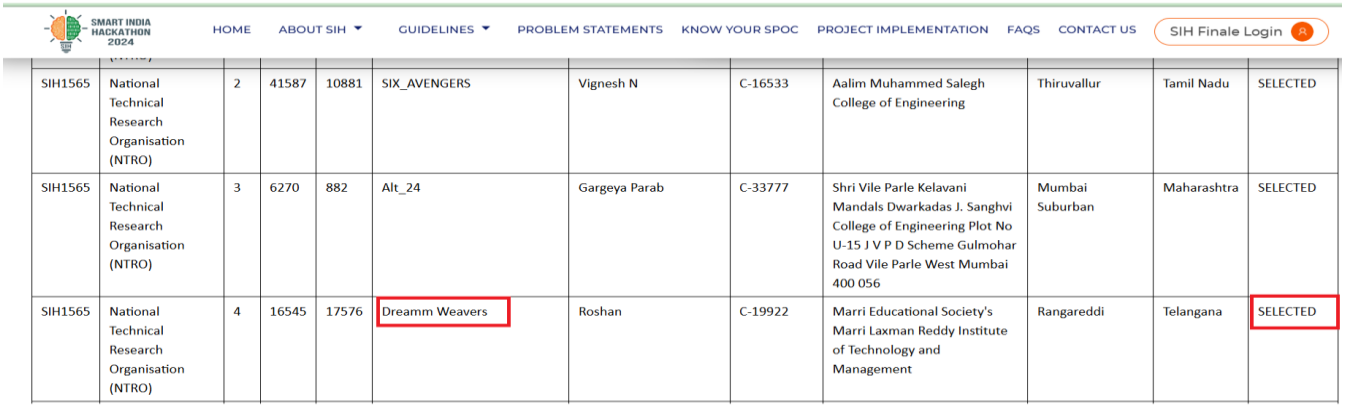
https://sih.gov.in/sih2024/nodalcenter



SIH1569								
SIH1566		The National Disaster Response Force (NDRF), MHA	NDRF					
SIH1526	Hardware	AICTE, MIC-Student Innovation	AICTE	Gandhi Institute of Technology & Management , Visakhapatnam	Private University recognised by UGC	Andhra Pradesh	Visakhapatnam	530045
SIH1527								
SIH1528								
SIH1529								
SIH1530								
SIH1554	Hardware	Ministry of Agriculture and Farmers Welfare	University of Agricultural Sciences, Dharwad (UASD), The Indian Council of Agricultural Research	IES Institute of Technology & Management, Bhopal	Private Institute/ College	Madhya Pradesh	Bhopal	462044
SIH1560		Ministry of Fisheries, Animal Husbandry and Dairying	Department of Animal Husbandry and Dairying					
SIH1561								
SIH1563	Hardware	National Technical Research Organisation (NTRO)	National Technical Research Organisation (NTRO)	Indian Institute of Technology, Roorkee	Institute of National importance (IIT/NIT/IIM/CFTI etc)	Uttarakhand	Roorkee	247667
SIH1564								
SIH1565								
SIH1524		Godrej Appliances	Godrej Appliances					
SIH1611		Government of Himachal Pardesh	Technical Education Department					

Shortlisted List for SIH-2024 Grand Finale:

https://sih.gov.in/sih2024/screeningresult



SIH1565	National Technical Research Organisation (NTRO)	2	41587	10881	SIX_AVENGERS	Vignesh N	C-16533	Aalim Muhammed Salegh College of Engineering	Thiruvallur	Tamil Nadu	SELECTED
SIH1565	National Technical Research Organisation (NTRO)	3	6270	882	Alt_24	Gargeya Parab	C-33777	Shri Vile Parle Kelavani Mandals Dwarkadas J. Sanghvi College of Engineering Plot No U-15 J V P D Scheme Gulmohar Road Vile Parle West Mumbai 400 056	Mumbai Suburban	Maharashtra	SELECTED
SIH1565	National Technical Research Organisation (NTRO)	4	16545	17576	Dreamm Weavers	Roshan	C-19922	Marri Educational Society's Marri Laxman Reddy Institute of Technology and Management	Rangareddi	Telangana	SELECTED

Target Detection by Optimizing Anomaly Detection in Hyperspectral Image Processing using AI/ML

Abstract:

This project aims to develop Anomaly Detection Models for Hyperspectral Image Processing using AI/ML. The focus will be on optimizing deep learning models to identify targets and anomalies in hyperspectral data, which is critical for environmental monitoring and resource management.

Key Components

- **Data Preprocessing:** Implement techniques for data correction, de-noising, and calibration to enhance image quality.
- **AI/ML Models:** Use deep learning models for anomaly detection, ensuring high spectral clarity and accurate target identification.
- **Target Detection Methodology:** Develop a methodology for identifying and classifying targets of interest based on spectral signatures

Expected Outcome

The models will improve the accuracy and efficiency of hyperspectral image analysis, aiding in environmental monitoring and management.