

# MARS

DREAM | INNOVATE | BUILD



**Mechatronics and Robotics Society**

**2024-25**

This magazine captures our year of challenges, breakthroughs, and the spirit of teamwork that fuels our mission. As we set our sights on the future, we continue to dream, design, and deliver. Welcome to the world of MARS—where innovation meets exploration.



# Outline

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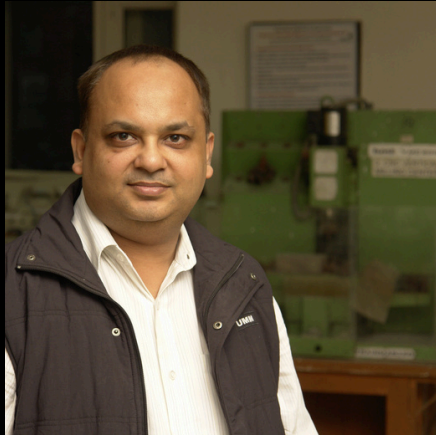
# About MARS



The Mechatronics and Robotics Society(MARS) is the sole robotics society of Thapar Institute of Engineering and Technology, Patiala. MARS is highly dedicated towards robotics and innovation. Our organization actively participates in prestigious robotics-based national and international competitions like ERC, IRC, SIH, DD Robocon and keeps bringing laurels to the institution.

We motivate students of our institution to sharpen their technical skills by providing our resources and a platform to learn, perform, and experiment with individual technical abilities and eager to build a brighter future.

# PRESIDENT's Note



**Dr. Ashish Singla**  
Associate Professor, MED

As President of the Mechatronics and Robotics Society (MARS), I am honored to witness our student's unwavering commitment to transforming ideas into reality. MARS is not just a platform for technical learning; it is a thriving community where curiosity meets purpose, and knowledge becomes the foundation for innovation.

Our mission extends beyond technical skill-building. At MARS, we inspire students to apply their talents to tackle meaningful challenges—from developing sustainable technologies to advancing autonomous systems that enrich human life. Through collaborative projects and hands-on exploration, our members cultivate resilience, creativity, and a sense of responsibility as future engineers.

With the support of our university, MARS has grown into a beacon of progressive thought and dedication, spreading our knowledge and insights to the world, fostering a culture of innovation and inclusivity within robotics. By engaging with pressing issues and sharing their work, our students are creating a lasting impact on the wider community and inspiring a culture that values robotics as a tool for societal advancement. I am immensely proud to support this journey and look forward to the future our young visionaries will build.

Thapar Institute of Engineering and  
Technology

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Ph.D.

Indian Institute of Technology, Kanpur



# VICE PRESIDENT's Note



**Dr. Sachin Kansal**  
Assistant Professor, CSED

As Vice President of the Mechatronics and Robotics Society (MARS), I am continually inspired by the ambition and creativity of our members. MARS is a space where students blend knowledge with purpose, translating theories into real-world applications that push the boundaries of possibility.

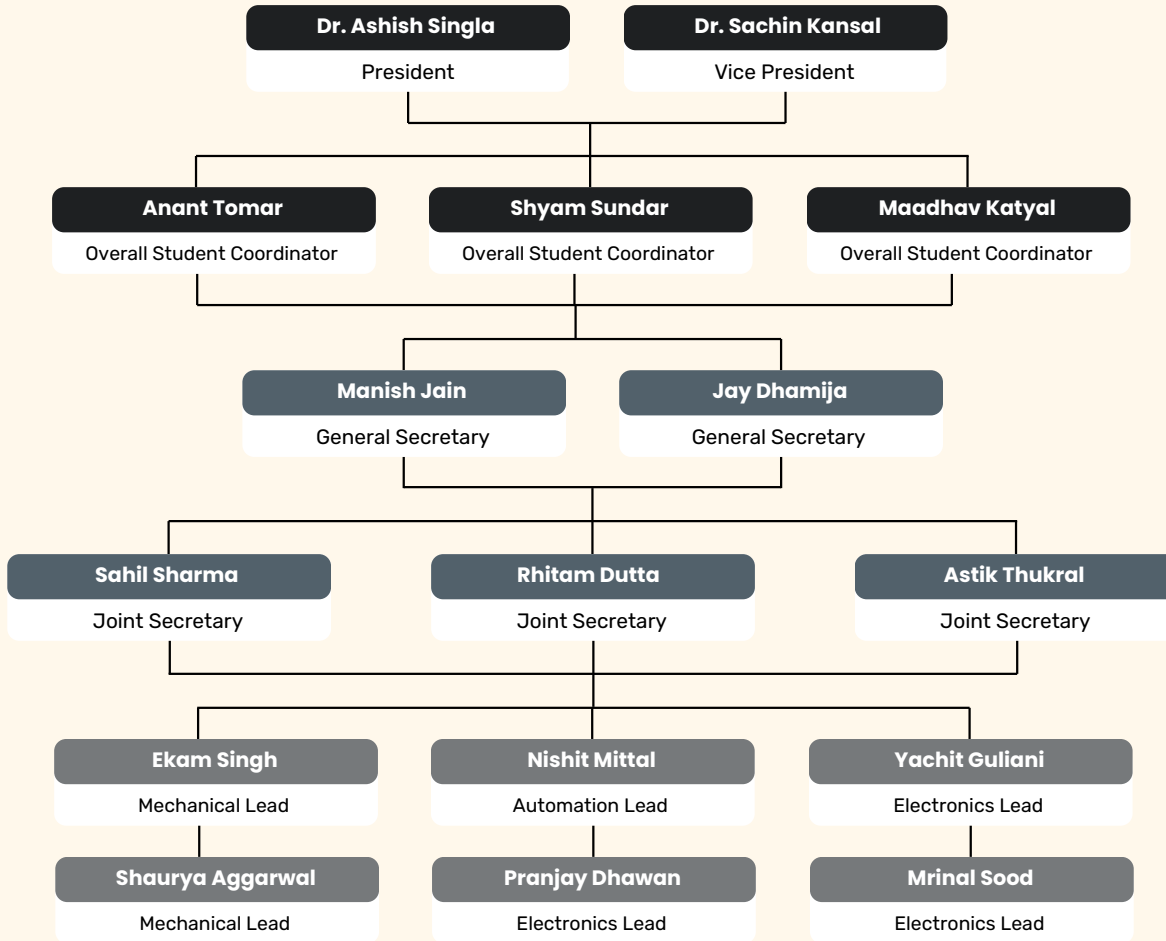
Our society takes on challenges that matter—from designing autonomous systems to pioneering solutions for sustainability. We actively participate in conferences and publish research, ensuring we remain connected to the latest global innovations. Engaging with the wider scientific community allows us to implement cutting-edge developments into our work, even in the smallest details, as we share our progress with the world.

At MARS, learning extends beyond classrooms; it thrives through exploration, resilience, and practical experience. We are preparing young engineers to lead with empathy, innovation, and a commitment to progress. I am grateful to be part of this journey, supporting our students as they create technologies that make a lasting impact.

Thapar Institute of Engineering and  
Technology

Ph.D.

Indian Institute of Technology, Delhi



# TEAM Structure

## FY 2024-25



Sr No	Category	Event/Project Name	Year	Budget (Rs.)	Expenditure (Rs.)
1.	Competitions	IRC-2025 (At BITS Goa)	2025	2,35,000	2,35,000 1,25,000* 1,00,000**
2.	Projects	Robomuse	2024	30,000	29,000
3.	Events	Society Fair	2024	5,000	5,000
		Orientation	2024	5,000	5,000
4.	Miscellaneous	Tools	2024	25,000	25,000
		<b>TOTAL</b>		<b>3,00,000</b>	<b>5,24,000</b>

\*Extra Funds over and above budget for Components

\*\*Extra Funds over and above budget for Travel Purposes





## FY 2023-24

Sr No	Category	Event/Project Name	Year	Budget (Rs.)	Expenditure (Rs.)
1.	Competitions	IRC-2024(At PSG iTech, Coimbatore)	2024	1,95,500	1,95,500 1,25,000* 25,000**
2.	Events	Society Fair	2023	5,000	5,000
3.	Projects	Robomuse	2023	50,000	50,000
4.	Workshops	Space Robotics Workshop	2023	10,000	10,000
		<b>TOTAL</b>		<b>2,60,500</b>	<b>4,10,000</b>

\*Extra Funds over and above budget for Components

\*\*Extra Funds over and above budget for Travel Purposes

# BUDGET

## FY 2022-23



Sr No	Category	Events/Project Name	Year	Budget (Rs.)	Expenditure (Rs.)
1.	Competitions	IRC-2023(At Presidency University, Banglore)	2023	2,75,000	2,75,000 1,50,000* 50,000**
2.	Events	Society Fair	2022	5,000	5,000
		Orientation	2022	5,000	5,000
3.	Miscellaneous	Lab Equipment	2022	15,000	15,000
		<b>TOTAL</b>		<b>3,00,000</b>	<b>5,00,000</b>

\*Extra Funds over and above budget for Components

\*\*Extra Funds over and above budget for Travel Purposes

# Hall of FAME



AT THE 2023 EDITION OF SATURNALIA, THE PRESTIGIOUS ANNUAL TECHNO-CULTURAL FEST HELD AT THE THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY, TEAM MARS ACHIEVED A REMARKABLE FEAT BY EMERGING VICTORIOUS IN THE HIGHLY COMPETITIVE ROBOWARS COMPETITION.



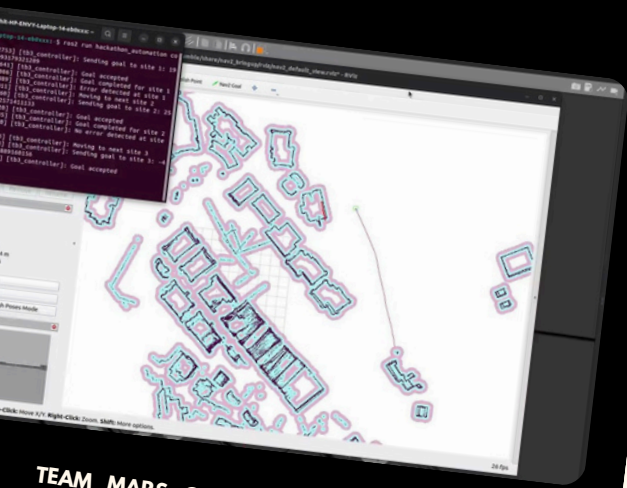
**EMERGING TEAM OF THE YEAR**  
OF INTERNATIONAL ROVER CHALLENGE

**TEAM MARS THAPAR**  
THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY

TEAM MARS WON THE 'EMERGING TEAM OF THE YEAR' IN THE INTERNATIONAL ROVER CHALLENGE 2023, SHOWCASING INNOVATION AND TECHNICAL EXPERTISE THAT ESTABLISHED US AS A RISING FORCE IN ROBOTICS AND SPACE EXPLORATION.







**TEAM MARS COMPETED IN ERC, A PRESTIGIOUS ROBOTICS HACKATHON ORGANIZED BY BITS GOA DURING THE SUMMER OF 2024. WE BAGGED THE FIRST POSITION ALL OVER INDIA. PARTICIPANTS INCLUDED TOP COLLEGES FROM ACROSS INDIA, SUCH AS IIT 'S AND NIT'S**



**TEAM MARS RECENTLY CELEBRATED A SIGNIFICANT ACHIEVEMENT BY BEING SELECTED AS ONE OF THE TOP 25 TEAMS WORLDWIDE TO COMPETE IN THE INTERNATIONAL ROVER CHALLENGE (IRC) 2024, HELD IN COIMBATORE. WE DEMONSTRATED OUR EXPERTISE THROUGHOUT THE COMPETITION THROUGH INNOVATIVE SOLUTIONS AND PRECISION ENGINEERING. WE DEMONSTRATED OUR EXPERTISE THROUGHOUT THE COMPETITION THROUGH INNOVATIVE SOLUTIONS AND PRECISION ENGINEERING.**

# Our Latest Achievement



In the final phase, we delivered outstanding performances across all five critical tasks—**RDO, ABEX, IDMO, AUTEX and PIMA**—showcasing our technical expertise, innovative problem-solving, and on-ground efficiency. This success highlights our team's resilience, dedication, and continuous pursuit of excellence, firmly establishing Team Mars as one of the leading student rover teams on the global stage. It has further inspired us to set even greater benchmarks for future competitions.

In the **2025 edition of the International Rover Challenge (IRC)**, Team Mars achieved a remarkable milestone by securing **2nd** place among 30 top-tier teams from across the globe, including prestigious institutions like IITs, NITs, and Moscow State University, Russia. Demonstrating significant growth from our 18th position in the previous year, we showcased tremendous leap in our performance.





# International Rover Challenge



International Rover Challenge (IRC) is a space robotics engineering competition conducted by Space Robotics Society (SPROS). It challenges university students to conceptualize, design, develop and operate an astronaut-assistive next-generation planetary rover and perform specific missions in Mars simulated conditions. Team MARS of TIET has been participating in this competition since the last two years. The objective of the competition is to provide students with a real-world interdisciplinary space engineering experience, combining practical engineering skills with soft skills, including business planning and project management.





# PROJECTS



**ROVER MANDAKINI : THE 2023  
ITERATION OF OUR ROVER TO  
COMPETE IN THE INTERNATIONAL  
ROVER CHALLENGE**

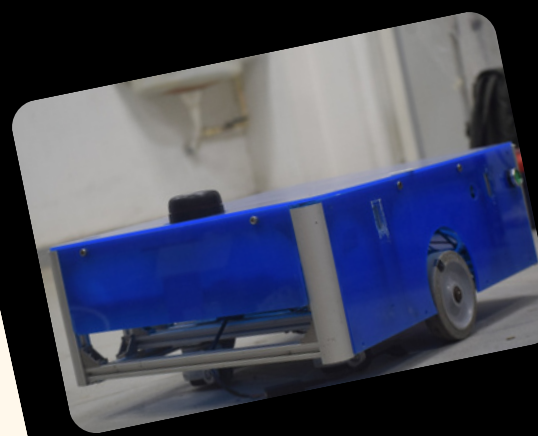


**ROVER BHAGIRATHI : THE BETTER  
AND IMPROVED 2024 ITERATION OF  
OUR ROVER TO COMPETE IN THE  
IRC'24**





MARVIN IS AN AUTONOMOUS CLEANING ROBOT EQUIPPED WITH ULTRASONIC SENSORS FOR PRECISE OBSTACLE DETECTION AND AVOIDANCE THROUGH A FEEDBACK-BASED SYSTEM. IT BOASTS EFFICIENT CLEANING CAPABILITIES POWERED BY A HIGH-RPM BRUSHLESS DC MOTOR.

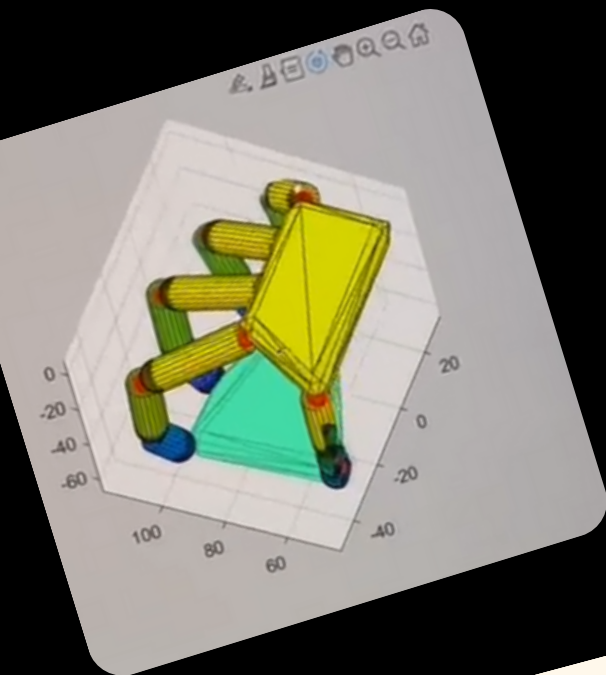


ROBOMUSE IS AN ADVANCED NAVIGATION BOT POWERED BY ROS.

IT EXCELS IN COMPLEX ENVIRONMENTS WITH SMART ALGORITHMS, REAL TIME OBSTACLE AVOIDANCE, 2D MAPPING AND EFFICIENT PATH PLANNING WITH THE HELP OF A LIDAR.

IT HAS INTEL NUC, MAGNETIC ENCODERS, IMU AND TEENSY 4.1 FOR POWERING THE ROBOT'S COMPUTING AND CONTROL SYSTEMS.





THIS PROJECT AIMS TO DEVELOP A PROSTHETIC ROBOTIC HAND TO IMITATE HUMAN HAND MOVEMENTS. BY INTEGRATING SENSORS AND ACTUATORS, IT RESPONDS TO MUSCLE SIGNALS, ALLOWING FOR INTUITIVE CONTROL BY THE USER.



THE QUADRUPED ROBOT HAS FOUR LEGS FOR PASSIVE STABILITY IN A STANDING POSITION. IT USES 12 SERVO MOTORS AND 3 DEGREES OF FREEDOM IN EACH LEG ASSEMBLY TO CREATE DIFFERENT MOVEMENTS AND MAINTAIN STABILITY.



# Rover ALAKANANDA

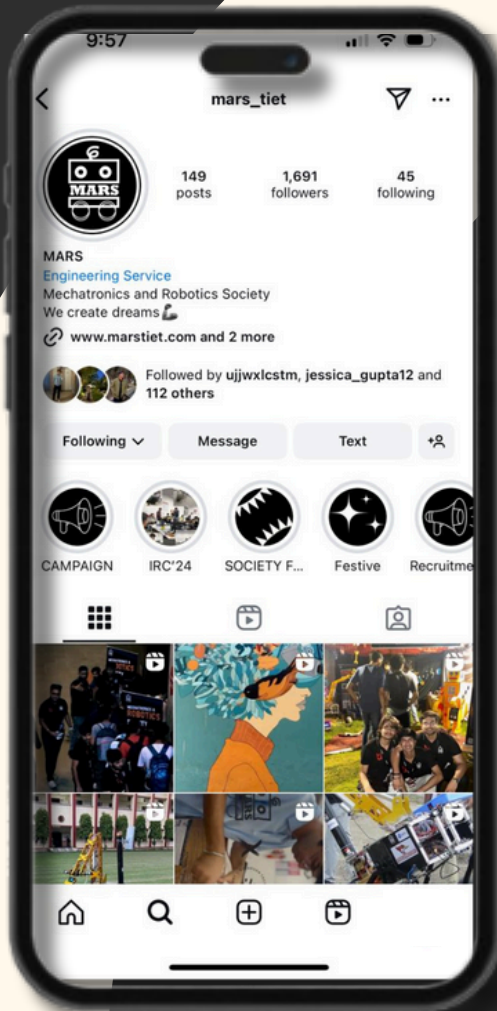


Alaknanda, our third iteration of the Mars rover prototype, featuring several upgrades.

- It is equipped with a 5-DOF lightweight robotic arm crafted from carbon fiber and 3D-printed components.
- The rover includes a soil analysis system, where an auger-based mechanism enables precise sampling, and a science module processes samples with reagents to detect signs of life.
- The control system is built on the ROS 2 framework, and the electronics utilize custom double-sided fabricated PCBs.
- Custom made plastic wheels are used with rubber treads and pla+cf 3d printed rim.



# SOCIAL MEDIA OUTREACH



<https://marstiet.com>



[mars-tu](#)



[Mechatronics and Robotics Society, TIET](#)



[mars\\_tiet](#)



[mars@thapar.edu](mailto:mars@thapar.edu)

Scan to know  
more!





# Mars ALUMNI



**Gaurav Sivaych**



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Founder, MARS  
Class of 2020

**He was the Founder of MARS and has been working with Peer Robotics as a Sr. Electrical Systems Engineer since the past 5 years.**



**Mukund Gupta**



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Joint Secretary, MARS  
Class of 2023

**He was associated with the electronics department and is now working with Maruti Suzuki India Limited.**



**Manjot Singh Suri**

**ADDVERB**

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General Secretary, MARS  
Class of 2023

**He was a part of the control and automation department and is now working at Addverb fulltime.**

# Mars ALUMNI



**Rajat Arora**

**ADDVERB**

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Technical Lead, MARS  
Class of 2023

**He used to work in the control and automation department of mars and is now working at Addverb full time.**



**Manveer Singh**

**M**

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Joint Secretary, MARS  
Class of 2024

**He worked with addverb as a Mobile Robotics intern and is now pursuing masters from University of Michigan Robotics Department.**



**Pradyun Sharma**

**TU**Delft

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Mechanical Lead, MARS  
Class of 2024

**He interned at IIT Delhi , Co-founded an Ed Tech robotics startup and is now pursuing MSc at TU Delft, Netherlands.**

# Mars ALUMNI



**Anant Tomar**  
**ADDVERB**

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Rover Lead, MARS  
Class of 2025

**He was the rover lead and was responsible for the rocker-bogie design, analysis and modelling and is now interning with Addverb.**



**Maadhav Katyal**  


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Joint Secretary, MARS  
Class of 2025

**With over 6 years of hands-on experience in Electronics and Robotics, he was the Team Captain in IRC and is now interning with Intute.ai**



**Shyam Sundar Mallampalli**  
**ADDVERB**

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Joint Secretary, MARS  
Class of 2025

**He was the Vice Captain and worked in the mechanical department mainly focusing on the robotic arm and is now interning with Addverb.**

# MARS Publication



Our research papers reflect the collaborative efforts of MARS members in addressing challenges within robotics and automation. Presented at various international conferences, these works contribute to advancing technical knowledge and practical solutions in the field.

ROS2 Framework Based Design and Evaluation of an Autonomous Robotic System for Real-Time Grid Failure Assessment



Rishav Datta, Jay Dhanya, Manish Jain, Nishit Mittal, Shaurya Aggarwal, Sachin Kamal, Ashish Singh\*  
Thapar Institute of Engineering and Technology, Patiala, India-147004  
\*Corresponding author: ashish.singh@thapar.edu

**Abstract**  
To improve resilience in the face of grid failures, this paper demonstrates the design and installation of an autonomous robot system to identify the predetermined sites impacted by the grid failure. The proposed solution uses a TurtleBot 3 in a simulated environment. The robot can detect significant concerns like broken infrastructure by integrating a ROS2 based framework and a customized Dijkstra path-planning algorithm. The robot reduces the need for human involvement by supporting rapid infrastructure inspection through effective navigation and real-time color recognition of essential zones. The solution proposed in the current work highlights the potential for deploying autonomous mobile robots to strengthen infra-resilience and management by providing the comparison between live path planning algorithms.

**Keywords:** ROS2, optimal path planning, Tenexy microcontroller, Dijkstra algorithm, PID controller.

**Introduction**  
The increasing reliance on electrical grids for powering modern society has underscored the importance of their reliability and resilience. Grid failures, often triggered by natural disasters, equipment malfunctions, or human errors, can lead to severe economic losses, safety hazards, and significant disruptions in daily life [1]. To mitigate these risks, real-time monitoring and response systems are crucial. The primary objectives of this research include the design of a mobile robot capable of navigating complex terrains typically encountered in utility environments, the implementation of a suite of sensors for real-time data collection (such as temperature, voltage, and current measurements), and focus on the development of an autonomous robot capable of navigating through grid failure-affected areas, assessing the situation based on the visual cues (e.g., color-coded cones), and providing real-time feedback to operators.

**Design of the Proposed Autonomous Robot**  
The robot model, as illustrated in Fig. 1, features a 5 Degrees of Freedom (DOF) robotic arm, 3 DOFs for the arm and an additional 2 for the gripper manipulation. The proposed robot is designed to identify and fix the electrical issues along with the faulty wires on the entire campus. It has a single bogie suspension system for enhanced mobility on rough terrains and stair climbing [2]. The chassis design, which incorporates compartments for spare parts, electronics, and tools, is optimized for both functionality and compactness, allowing the robot to operate in narrow spaces such as corridors. The design and modeling were performed using SolidWorks, while structural analysis and optimization were achieved using Finite Element Analysis (FEA) in Ansys. A custom differential drive rover PCB has dual Tenexy microcontrollers for motor control, sensor interfaces, and communication. One microcontroller controls motor drivers using magnetic encoders, while a GPS-enabled IMU tracks location and orientation. Wireless modules allow subsystems and the control station to communicate long-range, low-power. PCB priorities include signal integrity, power management, and reduced latency for autonomous navigation. This solution provides scalable real-time control for autonomous robots in dynamic contexts.



System for Real-Time Grid Failure Assessment

The 3rd IFToMM for SDG Conference Villa San Giovanni, Italy  
June 9-12, 2025

Design and Implementation of a Power Electronic System for an Autonomous Martian Rover


Maadhav Katyal, Astik Thakral, Yachit Guliani, Pranay Dhawan, Sachin Kamal and Ashish Singh\*  
Thapar Institute of Engineering and Technology, Patiala, India-147004  
\*Corresponding author: ashish.singh@thapar.edu

**Abstract**  
The autonomous rover is designed for harsh environments, powered by an 80,000 mAh battery pack that ensures efficient operation across motors, robotic arms, and soil analysis systems while minimizing power losses. This paper presents the design and implementation of the rover's power electronics, including a custom power distribution PCB. The power system drives the base motors equipped with magnetic encoders, generating 18 Nm of torque. A Tenexy 4.1 microcontroller manages control signals to Cytron MD20A motor drivers, ensuring precise and responsive maneuvering. The Martian Rover integrates multiple subsystems, including a 5-DOF robotic arm with linear actuators for elbow movements and a servo motor for the gripper, as well as a soil analysis unit powered by stepper, DC, servo, and peristaltic motors. This study compares motor drivers across subsystems, concluding that Cytron MD10 offers optimal efficiency with minimal current losses. A dedicated PCB manages environmental sensors, ensuring seamless data transmission to the base station for real-time analysis and decision-making.

**Keywords:** Power Electronics, IMU and Encoder-based Navigation, Environment Sensing.

**Introduction**  
Modern planetary rovers highlight the importance of effective power management for extended missions and system reliability. Autonomous rovers now incorporate advanced power systems with multi-motor control, smart management, and energy recovery to handle tasks like navigation, environmental analysis, and manipulation. This rover is designed to explore harsh extraterrestrial environments with minimal human intervention. It features a battery-powered system supplying energy to six motors, each delivering 3 Nm of torque, with precise control via magnetic encoders. The microcontroller manages the motor drivers, guided by an Intel NUC. The rover integrates a robotic arm with linear actuators and servo motors [1], alongside a soil analysis system driven by stepper motors, servos, and DC motors. A dedicated PCB collects and processes sensor data, transmitting it to the base station through radio waves. The batteries, managed by a Battery Management System (BMS), ensure regulated charging and discharging. This report outlines the rover's design, focusing on power management, control systems, and energy optimization to ensure reliable performance in extreme conditions.

**Design of Rover Electronics System**  
The rover's power distribution and control system is designed with a multi-PCB layout to optimize performance in challenging environments. A Tenexy 4.1 microcontroller, selected for its processing power and precise control, handles PWM signal generation for the 5-DOF robotic arm and the six motor drivers that power the rover's movement. The motor drivers, MD20A, are used for efficient high-current control of the motors, with power regulated by a Battery Management System (BMS). The BMS provides stable power delivery and incorporates energy recovery mechanisms to enhance efficiency, reducing power losses during high-demand operations. The power distribution system uses separate voltage converters, as demonstrated in the Lunar Zetro rover system, which uses Buck and Boost converters in various operational modes [2]. Environmental sensors, including MICS, BME280, ADF1010, ACD, and the NEO TM GPS module, were chosen for their reliability and accuracy in gas detection, atmospheric monitoring, and soil analysis. The system's overall design ensures efficient power distribution and precise control while maintaining operational integrity in rugged environments, making it highly effective compared to standard peer systems.



Design and Implementation of a Power Electronic System for an Autonomous Martian Rover

The 3rd IFToMM for SDG Conference Villa San Giovanni, Italy  
June 9-12, 2025

# EVENTS Current Year

YEAR  
2024-25

## • Felicitation by DIRECTOR, TIET

Team MARS was felicitated by Dr. Padmakumar Nair, Director and Dr. Inderveer Channa, Dean of Student Affairs, TIET, for their incredible performance and securing 2nd position globally at International Rover Challenge 2025, held at BITS Pilani K K Birla Goa Campus.



14th February, 2025

Thapar Institute of  
Engineering and  
Technology

## • Session on ACADEMIC RESEARCH work

12th February, 2025

Thapar Institute of  
Engineering and  
Technology

An insightful session was conducted with the members of team MARS by Dr. Ashish Singla (President, MARS), emphasizing the significance of research work in the industry. The session also covered various prestigious conferences held globally each year, providing valuable insights into opportunities for knowledge exchange and professional growth.



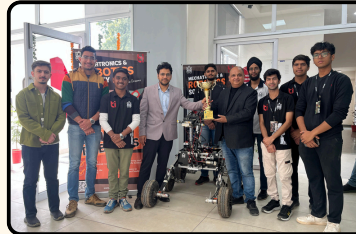


# EVENTS Current Year

YEAR  
2024-25

## • IHFC, IIT Delhi Visit

Team MARS showcased our rover to the I-Hub Foundation for Cobotics, IIT Delhi, highlighting its key features and innovations. Alongside our faculty advisors, we discussed our projects, team vision, and future growth in robotics, fostering potential collaborations and knowledge exchange.



12th February, 2025

Thapar Institute of  
Engineering and  
Technology

## • International ROVER Challenge 2025

In the 2025 International Rover Challenge, Team MARS secured 2nd place among 30 elite teams worldwide, including IITs, NITs, and MSU Russia. This marks a significant achievement, reflecting our remarkable progress from 18th place last year and showcasing our dedication, innovation, and technical excellence.



28th January, 2024

BITS Pilani K K Birla,  
Goa Campus

2nd Position Globally

# EVENTS Current Year

YEAR  
2024-25

## • Saturnalia TECH Exhibition

Team MARS was invited to participate in the Tech Exhibition at Saturnalia 2024, the flagship techno-cultural fest of TIET. We had the opportunity to showcase our major projects and engage with a diverse audience, including students and enthusiasts from various colleges, sharing our knowledge and fostering technical discussions.



16th November, 2024

Thapar Institute of  
Engineering and  
Technology

21st October, 2024

Thapar Institute of  
Engineering and  
Technology

## • Co-founder, Addverb technologies

Sangeet Kumar, Co-founder of Addverb technologies, visited TIET, exploring the MARS Lab and engaging with the entire MARS team. He shared his insights on robotics and automation along with future collaborations with our mentors.



# EVENTS Current Year

# YEAR 2024-25

- Annual ORIENTATION

During the MARS orientation, we inspired students with our mission, vision, departmental structure, workflow, and accomplishments. We highlighted impactful projects, notable achievements, and the support of our esteemed sponsors.



11th September, 2024

Thapar Institute of  
Engineering and  
Technology

1st September, 2024

Thapar Institute of  
Engineering and  
Technology

At the Society Fair for the students of batch of 2028, MARS captivated freshmen with insights into our society's mission, ongoing projects, and learning pathways. Our team of seven guided them in joining MARS to innovate, build skills, and pursue impactful research.



- Society FAIR 2024

# EVENTS Current Year

YEAR  
2024-25

## • Alumni CONCLAVE

The Alumni Conclave was a notable event bringing together distinguished alumni holding key positions in leading companies. We had the opportunity to showcase our projects and engage with the alumni, sharing our team's ideologies while gaining valuable insights from their industry experience



31st August, 2024

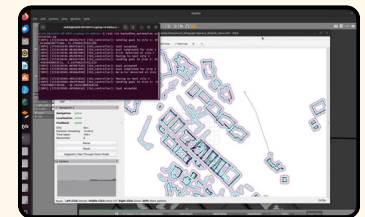
Thapar Institute of  
Engineering and  
Technology

10th August, 2024

BITS Pilani  
KK Birla Goa Campus

1st Position All Over India

Team Mars competed in ERC, a prestigious robotics hackathon organized by BITS Goa during the summer of 2024 wherein the team designed and simulated an autonomous grid failure robot capable of maneuvering on difficult terrain and fixing electrical failures in a building.



## • ERC Hackathon



# EVENTS Current Year

YEAR  
2023-24

## • International ROVER Challenge 2024

Team Mars celebrated an incredible achievement, securing 18th place at IRC 2024. This global milestone reflects our dedication, teamwork, and relentless innovation, inspiring us to push further in robotics excellence.



29th January, 2024

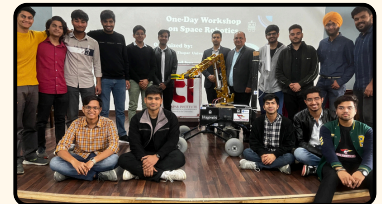
PSG Institute of Technology  
and Applied Research,  
Coimbatore

18th Position Globally

1st March, 2024

Thapar Institute of  
Engineering and  
Technology

Team Mars inspired young students from DPS Patiala with a hands-on Space Robotics Workshop, sparking curiosity and passion for robotics and space exploration, leaving a lasting impact on future engineers and scientists.



# EVENTS Previous Year

YEAR  
2023-24

## • ROBOWARS

MARS triumphed in Robo Wars at Thapar's tech fest, showcasing our powerful, resilient robot. This victory celebrated our team's dedication, engineering skill, and strategic finesse, fueling excitement for future high-stakes competitions.



25th November, 2023

Thapar Institute of  
Engineering and  
Technology

7th October, 2023

Thapar Institute of  
Engineering and  
Technology

MARS hosted an in-depth orientation for prospective members, unveiling our mission, hands-on projects, and interdisciplinary approach. Through project showcases and a skills-based entrance test, we inspired and identified future contributors for our society.



## • MARS Orientation

# EVENTS Previous Year

YEAR  
2023-24

## • FROSH Society fair

At the Society Fair, MARS captivated freshmen with interactive displays of our robotics projects and collaborative process, inspiring future members to join and contribute to our innovative, interdisciplinary work in technology.



21st August, 2023

Thapar Institute of  
Engineering and  
Technology

## • International ROVER Challenge 2023

31st January, 2023

Presidency University,  
Bengaluru

6th Position Globally

MARS proudly represented Thapar Institute and India at the International Rover Challenge 2023, securing 6th place globally. Their innovative rover design and programming process earned "Emerging Team of the Year" honors.



# EVENTS Previous Year

YEAR  
2022-23

- **Orientation for CLASS OF 2026**



MARS organized an orientation to introduce students to our robotics projects and collaborative culture, inspiring them to join and contribute to future initiatives. The session highlighted hands-on learning and real-world applications.

20th October, 2022

Thapar Institute of  
Engineering and  
Technology

17th September, 2022

Thapar Institute of  
Engineering and  
Technology

At the Society Fair, MARS showcased our robotics projects and hands-on opportunities, inspiring new students to join our innovative, teamwork-driven community. This successful event fueled campus enthusiasm for robotics.



- **Society FAIR**





# Key Moments



At the FROSH Society Fair '24



With Director, TIET for IRC 2023



With Mr. Sandeep Kumar, CEO, ADDVERB



With Dr. Ajay Batish, Deputy Director, TIET



With the team at MARS Orientation 2024



With Lead Judge Justyna Pelc, at IRC 2025



# SPONSORSHIPS



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# CONTACT US



**Rhitam Dutta**

rdutta\_be22@thapar.edu  
+91 88473 65039



**Jay Dhamija**

jdhamija\_be22@thapar.edu  
+91 96342 22380



**Manish Jain**

mjain4\_be22@thapar.edu  
+91 77172 35111



**Pranav Chaudhary**

pchaudhary\_be23@thapar.edu  
+91 89685 65853



# AWARD CEREMONY

JAN 28  
FEB 02

BITS PILANI KK BIRLA  
GOA CAMPUS



Manish Jain  
B.E Mechatronics-2026



Jay Dhamija  
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**MARS is dedicated to creating an environment where creativity and technical expertise thrive, allowing each member to grow through meaningful projects based on the latest industrial technologies and requirements, and promoting research and development in the field of robotics. We're more than a team, we're a community of innovators pushing the boundaries of what's possible.**

**At MARS, teamwork and exploration drive us. Through competitions and projects, we grow as engineers and leaders, facing challenges that teach invaluable lessons. We're proud to build both robots and futures through hands-on experience and dedication. We're a family united by a shared passion for technology and a commitment to making a positive impact on the future**

