



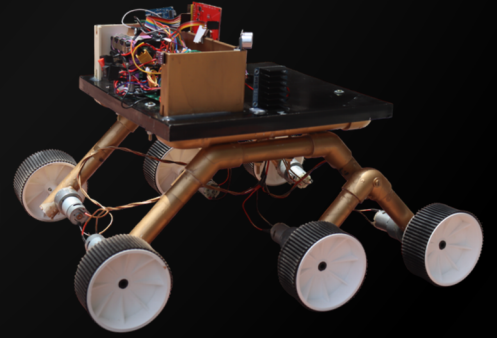
SARVAJANIK EDUCATION SOCIETY
SARVAJANIK UNIVERSITY
SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY
- DEPARTMENT OF MECHANICAL ENGINEERING -



SYNERGY.io

EVENT REPORT

R O V E R
A . R . E . S



&

NEXUS
INTERACTIVE

1. INTRODUCTION

The **SYNERGY.io Club**, an innovative student initiative within the **Mechanical Engineering Department** at Sarvajanic College of Engineering and Technology (SCET), successfully organized an exclusive live demonstration and interactive pitch event unveiling our latest engineering milestones: **A.R.E.S Rover and NEXUS Interactive Platform**.

This immersive session, aimed to bridge the gap between theoretical hardware design and practical system integration. The showcase **focused on the end-to-end development of an indigenously built rover** and introduced a new digital ecosystem for engineering students, exploring how these systems can be leveraged for innovation, research, and collaborative problem-solving.

The Showcase was met with overwhelming enthusiasm, drawing a highly active crowd of students (**110+ participants**) and innovators from across the departments of SCET. The high attendance underscores the students' keen interest in acquiring practical skills in robotics, wireless telemetry, and community-driven engineering.

The event was coordinated by:

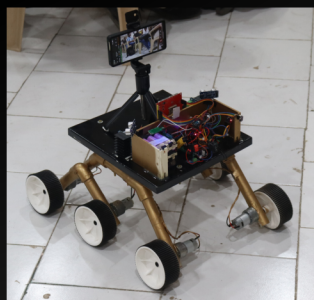
- **ARCHAN SHARMA** (2nd Year - MECHANICAL)
- **BHAVYA LADUMOR** (2nd Year - INFORMATION TECHNOLOGY)
- **MOHAMMED AMAAN SURATI** (2nd Year - MECHANICAL)
- **SMIT VYAS** (2nd Year - INFORMATION TECHNOLOGY)



2. EVENT CONTENT AND JOURNEY

1.) A.R.E.S. (AUTOMATED ROBOTIC EXPLORATION SYSTEM) :-

- The session began by establishing a strong framework for physical engineering with the unveiling of Rover A.R.E.S. Participants explored our indigenously developed 6x6 multi-purpose rover platform, witnessing live demonstrations of its kinematic motion and core technicalities.
- **Rover Features:-**
 - a.All-Terrain Rocker-Bogie Suspension: Engineered for extreme terrain climbing, obstacle clearance, and ultimate chassis stability without compromising payload balance.
 - b.ESP32 IoT Core: Utilizing dual-core processing to enable seamless, zero-latency smartphone telemetry and control.
 - c.High-Torque Drivetrain: Powered by heavy-duty Johnson motors.
 - d.Autonomous-Ready Sensors: Fully equipped with MPU kinematics, ultrasonic, and proximity arrays to map environments and detect obstacles.
- **Significance: A.R.E.S. was not just presented as a completed project, but as an Open Development Platform.** It was designed specifically to integrate future hardware and code ideas from fellow students, serving as a foundational testbed for the college's next generation of robotic solutions.
- **Developed By:**
 - **Archan Sharma - Project Lead & Mechanical Design**
 - **Bhavya Ladumor - Embedded Systems & Control**
 - **Surati Mohd. Amaan - Hardware Procurement & Logistics**
 - **Smit Vyas - Logistics & Visual Documentation**



2.) NEXUS INTERACTIVE (THE COMMUNITY HUB) :-

Following the physical demonstration, the core of the workshop shifted to digital collaboration with the launch of the **Nexus Interactive Platform**.

WHAT IS IT?

Nexus Interactive is a dedicated, community-driven discussion forum tailored explicitly for SYNERGYians. Operating similarly to a Reddit-style platform, hosted on the official website of SYNERGY.io - SCET (<https://synergyio.vercel.app/nexus>) it is a centralized digital space where students can freely post without the reliance on AI-generated answers.

Significance: To accelerate the innovation drive within the department, Nexus allows students to drop problem statements, share technical fixes, pitch concepts for the A.R.E.S. platform, and spark debates. It bridges the gap between isolated projects and collective college-wide engineering, ensuring that every bright idea has a space to be heard and developed.

Developed By: **Archan Sharma** (2nd Year - Mechanical Engineering)



3. CONCLUSION

The event proved to be a significant success, fulfilling the SYNERGY.io Club's mission to promote practical, technology driven skills among students. The session provided students with a robust perspective on the modern engineering workflow, balancing the physical complexities of hardware integration with the collaborative power of digital community platforms.

We sincerely acknowledge the invaluable support and guidance of our Faculty Coordinator, **Dr. Samip Shah**, our Head of Department, **Dr. Pankaj Gohil**, and our Principal, **Dr. Hiren Patel**, whose encouragement played a key role in the smooth execution of the event. Building on this momentum, SYNERGY.io aims to conduct more such innovative events, continuing to foster a culture of creativity, learning, and technology-driven growth within the department.