



CSMSS

CHHATRAPATI SHAHU MAHARAJ SHIKSHAN SANSTHA'S

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Industrial / Technical Visit Report

Visit Venue: Global Automotive Research Centre (GARC), Chennai

Dates: 08 October 2025 to 12 October 2025

Faculty In-Charge: Prof. P. B. Chaudhari

Number of Students: 27

1. Introduction

The SAEINDIA Autonomous BAJA Final Event was held at the **Global Automotive Research Centre (GARC), Chennai**, a premier automotive testing and homologation facility under the National Automotive Testing & R&D Infrastructure Project (NATRiP). GARC hosts advanced laboratories, dedicated test tracks, and world-class evaluation infrastructure for IC-engine, EV, hybrid and autonomous vehicle technologies.

The visit and participation in the event provided students with an opportunity to experience **real-world autonomous vehicle testing**, technical scrutineering, dynamic event execution, and exposure to professional automotive evaluation standards. The experience was highly relevant to the curriculum, linking concepts of **autonomous systems, sensors, vehicle dynamics, embedded systems, AI control, and validation procedures** with actual industry-grade testing practices.

2. Objectives of the Visit / Participation

- To participate in the SAEINDIA Autonomous BAJA Final Event and understand the complete workflow of autonomous ATV testing.
- To gain first hand exposure to GARC's vehicle evaluation facilities, test tracks, safety protocols, and testing procedures.
- To witness real-time functioning of autonomous systems including LiDAR, cameras, GPS/INS, obstacle detection, path-planning and dynamic event performance.
- To interact with industry judges, event officials and technical experts to understand expectations, standards, and emerging trends in autonomous mobility.

3. Schedule / Activities During Event (08–12 October)

Date	Time	Activity / Event	Conducted By / Resource Person	Remarks
08 Oct 2025	10:00 AM – 4:00 PM	Registration, Safety Briefing & Pit Area Setup	SAEINDIA Officials	Orientation and facility familiarisation
09 Oct 2025	09:00 AM – 5:00 PM	Technical Scrutineering & Sensor Validation	GARC Officials / Judges	Inspection of autonomous vehicle hardware, sensors, software
10 Oct 2025	09:00 AM – 5:00 PM	Static Events: Design Evaluation, CAE Review, Innovation Presentation	Industry Experts	Detailed assessment of design and AI architecture
11 Oct 2025	09:00 AM – 5:00 PM	Dynamic Events: Path Detection, Obstacle Avoidance, Autonomous Navigation	Track Supervisors	Performance testing on GARC test tracks
12 Oct 2025	10:00 AM – 1:00 PM	Final Runs, Results & Closing Ceremony	SAEINDIA & GARC Panel	Awards, feedback, certificate distribution

4. Key Observations / Learning

- Students witnessed **industry-level testing infrastructure** such as high-speed tracks, braking surfaces, gradient tracks, and sensor-calibrated test zones.
- The event demonstrated the integration of **AI algorithms, machine vision, LiDAR mapping, GPS/IMU fusion, control logic and actuator systems** in autonomous ATVs.
- Through scrutineering and interactions, students learned the importance of **safety requirements, redundancy, emergency stop systems, wiring standards, and fail-safe controls**.
- The dynamic events provided exposure to **real-time autonomous decision making**, highlighting challenges such as varying terrain, obstacles, lighting conditions and sensor noise.
- Students understood the rigorous process of **validation and evaluation**, crucial for real-world autonomous vehicle deployment and homologation.
- Participation boosted teamwork, technical confidence and understanding of professional engineering documentation, reporting, and presentation standards.

5. Student Feedback

- They appreciated the exposure to GARC facilities and industry interactions, which motivated them to pursue project work and career opportunities in automotive and autonomous mobility sectors.

6. Photographs



Industrial visit at Global Automotive Research center Chennai



Interaction of students with resource person from Renault Nissan R & D Center at GARC Chennai

7. Conclusion

The visit and participation at the SAEINDIA Autonomous BAJA Final Event at **GARC, Chennai**, from **8th to 12th October 2025** proved to be an invaluable learning experience. Students gained practical insights into cutting-edge autonomous vehicle technologies, industry-standard testing procedures, documentation, and safety norms.

The exposure to GARC's world-class testing environment strengthened students' technical expertise, problem-solving skills, and understanding of real-world automotive challenges. Overall, the event significantly enhanced their readiness for future roles in the **Automotive, electric mobility, robotics and autonomous systems sectors**.



Prof P. B. Chaudhari

Faculty In-charge



Prof. P. B. Chaudhari

Industry Visit In-charge



Dr. R. H. Shinde

HOD