

# SAE ANNUAL REPORT

## 2024-25



# SAE TKMCE COLLEGIATE CLUB, TKMCE

## CONSTITUTION OF SAEINDIA TKM COLLEGIATE CLUB

- **Chairman:** Head of Department, Mechanical Engineering.
- **Senior Faculty Advisor:** A faculty member nominated by the Head of Department, Mechanical Engineering.
- **Additional Faculty Advisor:** A faculty member nominated by the Head of Department, Mechanical Engineering
- **Student Chairperson:** A Student Nominated by the Head of Department, Mechanical Engineering.
- **Student Vice-Chairperson:** A Student Nominated by the Head of Department, Mechanical Engineering.
- **Student Secretary:** A Student Nominated by Student Members of SAEINDIA TKM Collegiate Club.
- **Student Treasurer:** A Student Nominated by Student Members of SAEINDIA TKM Collegiate Club.
- **Student Programme Chair:** A Student Nominated by Student Members of SAEINDIA TKM Collegiate Club.
- **Student Publicity Chair:** A Student Nominated by Student Members of SAEINDIA TKM Collegiate Club.
- **Student Membership Chair:** A Student Nominated by Student Members of SAEINDIA TKM Collegiate Club.

### List of Office Bearers

Office Bearers of **SAEINDIA TKM COLLEGIATE CLUB** of TKM COLLEGE OF ENGINEERING for the year **2024-2025**.

| <b>Sl No</b> | <b>POSITION</b>                   | <b>NAME</b>                                   |
|--------------|-----------------------------------|-----------------------------------------------|
| <b>1.</b>    | <b>Faculty Advisor</b>            | <b>Ahammad Vazim K A<br/>Ahammed Bilal A</b>  |
| <b>2.</b>    | <b>Student Chairperson</b>        | <b>Neeraj Babu</b>                            |
| <b>3.</b>    | <b>Student Vice-Chairperson</b>   | <b>Thasnim N S</b>                            |
| <b>4.</b>    | <b>Student Secretary</b>          | <b>Ahad J</b>                                 |
| <b>5.</b>    | <b>Student Treasurer</b>          | <b>James George</b>                           |
| <b>6.</b>    | <b>Student Program Chair</b>      | <b>Gautham Sen</b>                            |
| <b>7.</b>    | <b>Student Membership Chair</b>   | <b>Adarsh Bhaskar S</b>                       |
| <b>8.</b>    | <b>SEC Member</b>                 | <b>Thomas J George</b>                        |
| <b>9.</b>    | <b>Student Documentation Head</b> | <b>Stervin X</b>                              |
| <b>10.</b>   | <b>Student Media Head</b>         | <b>Salman B</b>                               |
| <b>11.</b>   | <b>Second Year Representative</b> | <b>Mukundan M Nair<br/>Steffina G Solomon</b> |

## **SAE TEAMS**

### **1. Team SPOX**

Team Spox, the bicycle design team of SAE TKMCE, began its journey in 2022 with a passion for eco-friendly mobility solutions. Despite early challenges that prevented their first competition appearance, the team showed remarkable growth in 2023, when they participated at PSNA College of Engineering and Technology, Dindigul. Their performance earned them 3rd place in the Best Maneuverability category, along with a cash award of ₹6,000, marking their entry into competitive engineering design.

Continuing their journey, Team Spox competed in the SAEISS National Level Bicycle Design Challenge 2024, held in January 2025 at KIOT College, Salem. Through improved design, technical refinement, and effective teamwork, they secured:

- **16th Rank Nationwide**
- **4th Rank in Kerala**



## 2. Team VEGHA

Team Vegha from SAE TKMCE competed in the 6th Edition of the SAEISS Dr. G. Padmanabhan Electric Two-Wheeler Design Competition, held on January 25 and 26, 2025, which was hosted at Rajalakshmi Engineering College in Chennai. The competition brought together leading engineering institutions from across the country, challenging participants to design and present innovative electric two-wheeler prototypes.

Team Vegha rose to the occasion, delivering a well-engineered, sustainable mobility solution that was both technically sound and aesthetically refined. Their efforts were recognized with the following accolades:

- **All India Rank 2 – Best Design**
- **All India Rank 3 – Special Award Winner**
- **Overall All India Rank 6**
- **Kerala Rank 2**

These results reflect the team's deep understanding of electric vehicle systems, design optimization, and performance validation under industry-aligned standards.



### 3. Team AereX

Team AereX is SAE TKMCE's specialized team focused on designing and building fixed-wing Unmanned Aerial Vehicles (UAVs). The team combines aerodynamics, structural design, propulsion, and control systems expertise to develop efficient and innovative UAVs. Their work emphasizes both practical engineering and theoretical analysis, preparing them to meet the challenges of modern aerospace technology. In recognition of their technical excellence, they secured-

- **All India Rank 10 – Design Report**
- **All India Rank 14 – Computational Fluid Dynamics (CFD) Analysis**

### 4. Team HBAJA

Team HBAJA of SAE TKMCE participated in the SAE HBAJA 2025 national-level competition held at NATRAX (National Automotive Test Tracks) in Madhya Pradesh, one of the most advanced vehicle testing facilities in the country. The event challenged student

teams to design, fabricate, and validate all-terrain vehicles capable of enduring demanding off-road conditions.

Team HBAJA demonstrated technical excellence and resilience throughout the event, securing multiple top-tier ranks:

- **All India Rank 12 – Overall Performance**
- **Kerala Rank 3**
- **All India Rank 5 – Design Event**
- **All India Rank 7 – Cost Event**



## 5. Team XLR8 FST

Team XLR8 FST is SAE TKMCE's official Formula Student team, dedicated to the design, fabrication, and testing of formula-style race cars for student engineering competitions.

The team applies interdisciplinary skills in automotive design, powertrain engineering, suspension dynamics, and project management to build high-performance vehicles tailored for endurance, acceleration, and design challenges. Their rigorous engineering approach and collaborative spirit have consistently pushed the limits of student motorsport innovation. In the Formula Bharat competition, 2025, Team XLR8 FST earned significant recognition by securing:

- **All India Rank 14**
- **Kerala Rank 2**



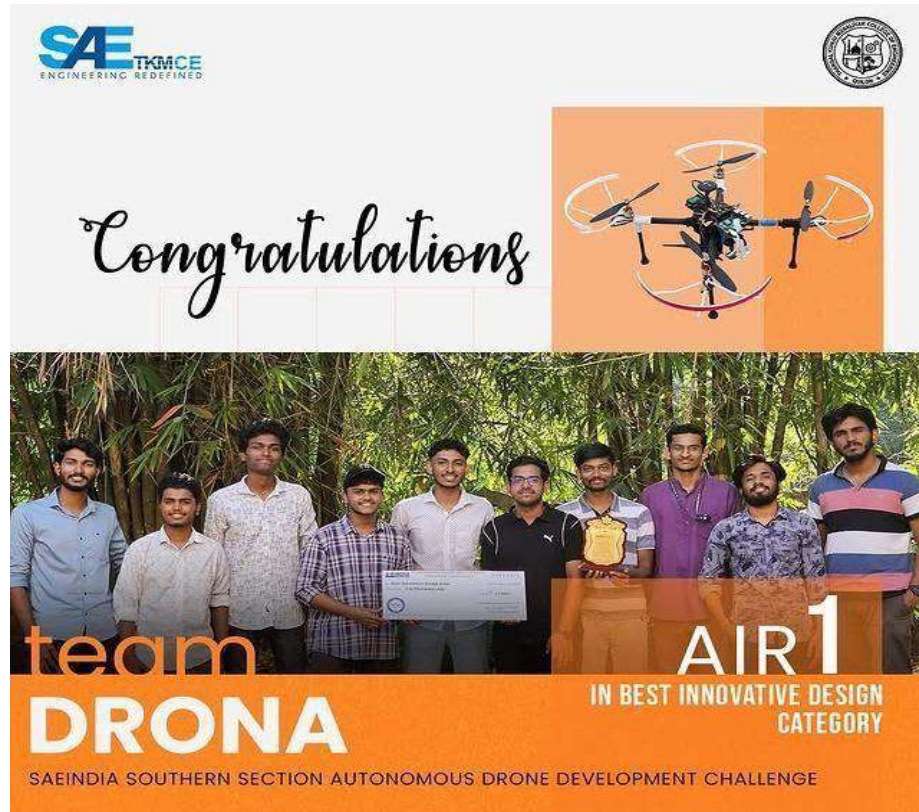
## **6. Team DRONA**

Team Drona of SAE TKMCE has brought immense pride to the institution through their stellar performance at the Autonomous Drone Development Challenge held at KCG College of Engineering, Chennai. Competing against 47 teams from across the nation, the team demonstrated exceptional innovation and technical prowess in the field of autonomous aerial systems. Their efforts were rewarded with :

- **All India Rank 1– Best Innovative Design**

- Cash prize of ₹10,000

This prestigious recognition underscores the team's dedication, advanced understanding of drone technologies, and their ability to apply engineering principles to solve real-world challenges.

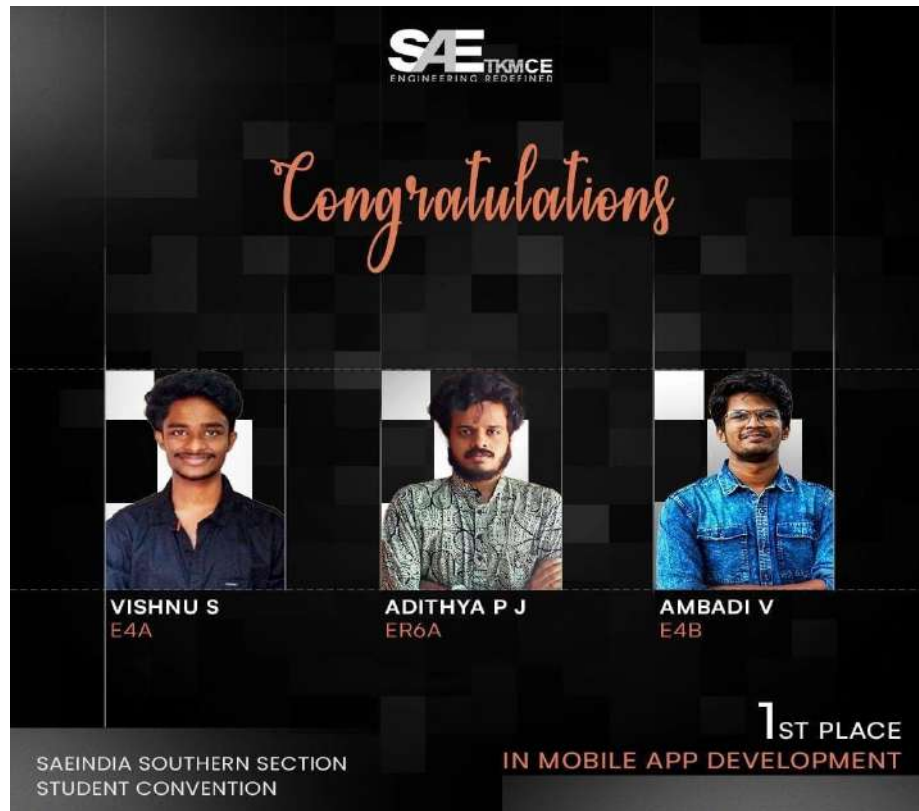


## **KEY HIGHLIGHTS**

### **1. Electrical & Electronics Mobile App Development (MAP)**

On January 24, 2025, at the SAEINDIA Southern Section Student Convention held at Manakula Vinayagar Institute of Technology in Pondicherry, a team from SAE TKMCE delivered an impressive performance in the Electrical & Electronics Mobile App Development (MAP) category. The team, comprising **Vishnu S, Adithya P J, and Ambadi V**, secured **first place**, emerging as National Level Winners among several strong contenders.

Their winning app was noted for its innovative features, intuitive design, and practical real-world applicability. This success highlights the students' growing capabilities in cross-disciplinary fields that merge electronics and software, marking an important achievement in the institution's push toward excellence in mobile and embedded system development.



## 2. SAEINDIA National Level Student Convention – Manufacturing Events

- **Computer-Aided Manufacturing**

At the SAEINDIA National Level Student Convention, the team from SAE TKMCE, consisting of **Gautham Sen** and **Azlan Shameer**, secured **All India Rank 11** in the event. Their performance showcased strong technical skills and a solid understanding of CAM tools.

- **Sheet Metal Forming**

At the SAEINDIA National Level Student Convention, the team from SAE

TKMCE, consisting of **Abhinav** and **Anandhakrishnan**, secured **All India Rank 6** in the event. The team demonstrated excellent practical skills and a deep understanding of material behavior and forming techniques.

- **Welding Technology**

At the SAEINDIA National Level Student Convention, the team from SAE TKMCE, consisting of **Milan N M**, **Kalyani**, and **Ajay**, secured an outstanding **All India Rank 6** in the event. The team showcased strong technical knowledge, precision, and teamwork in demonstrating various welding techniques and understanding weld quality standards.

## 1.Hotpit

SAE TKMCE, in association with Trika 2024, successfully conducted a two-day workshop titled HOTPIT on 6<sup>th</sup> July,2024, aimed at equipping students with essential manufacturing skills. The event was coordinated by Devanarayan, Aditya, and Sithara, and welcomed 13 enthusiastic participants.

Under the guidance of Prof. Riyas and a dedicated team from TKMCE, the first day focused on theoretical sessions and live demonstrations of various machines. On the second day, students engaged in hands-on activities that involved tasks such as hand cutting, drilling, grinding, welding, and using Vernier callipers. The practical session concluded with a mini project that allowed participants to apply their knowledge in a real-world context.

The workshop proved to be both engaging and educational, offering students valuable exposure to core manufacturing processes. It was well-received by the participants and successfully achieved its goal of enhancing practical engineering skills for future applications



## 2.Tesseract – Official magazine release

SAE TKMCE successfully released Tesseract Vol. 2, the official magazine of the club, which highlighted the latest trends, innovations, and analytical insights in engineering and technology. The first copy was formally handed over to the Head of the Department of Mechanical Engineering, marking the official launch of the edition.

Prepared by a dedicated team of students and guided by faculty mentors, the magazine featured articles on recent advancements, emerging technologies, and detailed technical analyses. It aimed to serve as a valuable resource for students, faculty, and tech enthusiasts across disciplines.

The release stood as a testament to the hard work and commitment of the editorial board, contributors, and supporting teams. It was well-received by the academic community and reinforced SAE TKMCE's mission to encourage technical excellence and knowledge sharing.



### 3.Student Induction Programme

As part of the Student Induction Programme for first-year students, the student heads of SAE TKMCE addressed the incoming batch and introduced them to the vision, structure, and activities of the SAE collegiate club. The session aimed to familiarize the

students with the opportunities available through SAE, including technical workshops, industrial visits, competitions, and hands-on project experiences.

The student representatives shared their personal experiences and highlighted the value of being a part of SAE in developing technical knowledge, practical skills, and leadership qualities.

The interaction was well-received by the new students and sparked interest in joining the club. The session served as an effective platform to initiate early engagement and encourage active participation in technical and co-curricular activities from the outset of their academic journey.



#### **4. Tier Events**

Tier Event contests are primarily held to showcase students' technical, design, fabrication, and problem-solving abilities. It is also a platform for networking and knowledge exchange. Tier Events are crucial in encouraging students to pursue careers in the automotive sciences. For the year 2022-23 we have successfully conducted 6 events so far which include:

- **Sheet metal competition**

Sheet Metal Competition is a dynamic and hands-on event designed to provide participants with practical insights into the fundamentals of automotive technology, particularly in the realm of sheet metal fabrication. The primary objective of this competition was to enable participants to understand and apply essential skills related to the design, manipulation, and usage of sheet metal in automotive applications.

Throughout the event, participants delved into key areas of automotive engineering, gaining exposure to:

- Fundamentals of Sheet Metal Work
- Automotive Manufacturing Techniques
- Material Properties and Applications
- Problem-Solving in Design and Fabrication

The competition served as a platform for individuals, whether beginners or experienced enthusiasts, to showcase their knowledge and practical skills. The event culminated in a challenge-based round where participants were required to solve a set of practical and theoretical problems under time constraints, encouraging both critical thinking and real-world application. This event was coordinated by James and Adarsh. The competition results are as follows:

First place: Abhinav and Anandhakrishnan

- **Welding competition**

Welding Competition was a skill-based event aimed at introducing participants to the essential techniques of metal fusion used in the field of automotive technology. The main objective of this competition was to allow participants to explore the fundamentals of welding and demonstrate their precision, control, and understanding of the process.

Participants were guided through core concepts critical to welding and its applications in automotive engineering, including:

- Basics of Welding Techniques
- Safety Procedures and Equipment Handling
- Types of Welds and Their Applications

- **Quality Inspection and Fault Identification**

The competition welcomed participants from all experience levels to step up and showcase their welding expertise. With a focus on both theoretical understanding and practical application, the event encouraged participants to fuse knowledge with hands-on skill. This event was coordinated by Salman and Gautham. The competition results are as follows:

First place: Milan N M Second

place: Ajay

Third place: Kalyani V

- **Bridge building competition**

The Bridge Building Competition offered students a chance to dive into the world of Civil Engineering and showcase their skills in structural design and construction.

Participants engage with key aspects of civil engineering, including:

- Fundamentals of Structural Design
- Load Analysis and Distribution
- Construction Techniques

Participants solved a set of 25 questions within 30 minutes, testing their knowledge of bridge engineering principles and problem-solving abilities. This event was coordinated by Thasnim and Ashina. The competition results are as follows:

First place: Muhammed Faris P K

Second place: Govind S

Third place: Ahad J

- **Mobile app building competition**

The Mobile App Development Competition focused on the intersection of mobile technology and the automotive sector. The primary goal was to encourage

participants to propose innovative and customizable mobile applications tailored specifically for automotive needs, while aligning with the latest market standards.

Throughout the event, participants explored core aspects of mobile app development including:

- User Interface (UI) and User Experience (UX) Design
- Integration of Automotive Data and Sensors
- Real-Time Connectivity and IoT Applications
- Security and Privacy Considerations in Automotive Apps

Participants were challenged to address real-world problems by creating practical mobile solutions that could enhance the driving experience, improve vehicle maintenance, or contribute to smarter transportation systems. This event was coordinated by Abhijith and Johan. The competition results are as follows:

First place: Vishnu S

Second place: Adithya P J

Third place: Ambadi V

- **Geometric dimensions and tolerance competition**

The Geometric dimensions and tolerance Quiz offered participants a unique opportunity to test their knowledge and understanding of critical symbols and concepts used in engineering and manufacturing. The primary focus was to evaluate participants' grasp of geometric dimensioning standards that ensure accuracy and consistency in design and production.

Throughout the quiz, participants engaged with key topics including:

- Interpretation of GD&T Symbols
- Application of Tolerances in Manufacturing
- Functional Relationships Between Features
- Inspection and Quality Control Principles

The quiz challenged both beginners and experienced professionals to apply their expertise under timed conditions, fostering a competitive yet educational

environment. This event was coordinated by Ahad and Mukundan. The competition results are as follows:

First place: Azlan Shameer

Second place: Gauthem Sen

Third place: Vivek C Anil

- **Computer aided manufacturing competition**

The CAM Competition challenged participants to demonstrate their technical skills and creativity by designing and manufacturing a critical component of a vehicle's braking system — the brake disc. This multi-stage event provided a platform to apply CAM principles in a real-world automotive context.

The competition began with a report submission round, where participants were tested on their understanding of CAM technologies, programming, and machining techniques. Teams that qualified advanced to the practical round, which required them to use CAM software to design and manufacture a brake disc model based on predefined specifications.

Participants were evaluated on several key criteria:

- Accuracy and quality of the final brake disc model
- Efficiency and optimization in programming and machining
- Creativity and innovation in the design
- Problem-solving during the manufacturing process

The event emphasized both technical precision and innovative thinking, showcasing the importance of CAM in modern manufacturing. A total of 6 teams, each consisting of up to 3 members, took part in this challenging and rewarding competition. This event was coordinated by Adarsh and Neeraj. The competition results are as follows:

First place: Azlan

Second place: Gauthem

Third place: Vivek C Anil

- **Python programming competition**

A Python programming competition was organized, as part of SAE tier events. The mode of the event was online, with a net participation count of 18 participants. The main aim was to give an application of problem-solving methodologies and coding knowledge by drafting the basic flow chart and logic for a given python problem.

The competition was held for a duration of 1.5 hours, to solve three programming problems in python language. This event was coordinated by Neeraj and Johan. The competition results are as follows:

First place: Aby Thankachan

Second place: Shijin Kumar

- **Auto quiz competition**

The event's purpose is to check the participants' general knowledge related to the automotive and related subjects mentioned below.

- History
- Places
- Personalities
- Technologies
- Companies
- Vehicle types and specifications
- Statistics of vehicles and so on
- All automotive related subjects

The quiz may be conducted on the following rounds. For rounds other than rapid-fire 30 seconds on direct and 15 seconds on a pass. For rapid fire round 120 seconds for 10 questions. This event was coordinated by Milan and Mukundan.

- **Business plan competition**

The Business Plan Competition was organized with the goal of evaluating the entrepreneurial vision and strategic planning skills of the participants. The focus of the event was to assess how well participants could design actionable and sustainable business strategies aimed at the growth and profitability of a specific organization.

Participants were encouraged to think beyond conventional approaches and propose innovative solutions that address real-world business challenges. A special emphasis was placed on how their ideas could contribute to reducing unemployment by improving both the quality and quantity of employers in the industry.

Key aspects explored during the competition included:

- Business strategy development
- Organizational growth planning
- Profit maximization techniques
- Entrepreneurship and employment generation
- Social and economic impact assessment

This competition served as a platform for aspiring entrepreneurs to showcase their problem-solving abilities and forward-thinking business models, all while promoting innovation and societal progress. This event was coordinated by Akshay and Amna.

- **Technical paper presentation competition**

The Technical Paper Presentation competition provided a platform for participants to present and explain technical papers of their choice to a panel of judges. The event aimed to foster a deeper understanding of technical content while encouraging clarity, analysis, and effective communication.

Participants demonstrated their ability to interpret research findings, present key results, and engage in meaningful discussion. This not only helped refine their presentation and public speaking skills but also tested their depth of technical knowledge and analytical thinking.

Key skills strengthened during the event included:

- Research and data collection techniques
- Logical structuring and reporting of information
- Critical analysis and interpretation of findings
- Communication and public speaking
- Technical discussion and Q&A handling

This competition proved to be a valuable opportunity for participants to grow as confident communicators and thoughtful engineers, ready to contribute to

the world of research and technology. This event was coordinated by Srihari and Abhijith.

- **Biomimicry competition**

The Biomimicry Innovation Challenge was designed to inspire participants to explore nature as a source of solutions for modern engineering problems. The central focus of the event was to propose and present innovative ideas that mimic biological processes or structures to reduce human effort in daily tasks and industrial applications.

Participants were encouraged to research natural systems and creatively apply those principles to technological or mechanical designs. The challenge emphasized the importance of sustainable innovation and problem-solving inspired by nature's efficiency.

Key concepts highlighted during the event included:

- Nature-inspired design and engineering
- Human effort reduction through biomimicry
- Creativity in sustainable innovation
- Concept presentation and communication skills
- Application of biology in technology

By merging biology with engineering, the event aimed to foster innovation that is not only effective but also environmentally harmonious, paving the way for smarter, nature-integrated design. This event was coordinated by Steffina and Stervin.

- **Internet of Things (IoT) Competition**

The IoT Competition was an exciting platform for participants to explore the growing field of connected systems, with a focus on developing innovative prototypes for smart connected cars. The event challenged participants to combine creativity and technical expertise to propose practical IoT solutions that enhance the intelligence, safety, and efficiency of automotive systems.

Participants were encouraged to think beyond conventional vehicle technologies and present system concepts that leveraged sensors, data networks, and automation to enable smarter mobility.

Core concepts addressed during the event included:

- IoT architecture and sensor integration
- Real-time data acquisition and processing
- Smart car system design
- Automation and connectivity
- Prototype development and innovation

This competition allowed students to put theory into practice and push the boundaries of automotive IoT, opening new doors for intelligent transport systems of the future. This event was coordinated by Steffina and Roshin.

- **Mobile Robotics Competition**

The Mobile Robotics Competition challenged participants to design and develop a robot capable of detecting and sorting defective components from a series of normal ones in a simulated factory setting. The objective was to create a mobile system that could effectively sense, identify, pick, and place faulty items into a designated area, reflecting a real-world industrial automation task.

The competition tested the participants' ability to integrate hardware and software for autonomous decision-making, promoting innovation in robotics and automation.

Key concepts explored during the event included:

- Sensor integration and object detection
- Robotic arm actuation and mobility
- Automation in defect identification
- Pick-and-place mechanism design
- Critical thinking and real-time problem solving

This competition served as a valuable opportunity for students to apply robotics concepts in a practical setting, encouraging innovation in smart manufacturing and quality control. This event was coordinated by Srihari and Thomas.

## 5. Team DRONA Recruitment Drive

The enthusiastic recruitment drive for Team DRONA, SAE TKMCE's autonomous drone development team, was conducted with great energy and excitement. The primary goal was to attract talented and motivated students who possess a strong passion for UAV technology and innovation. This initiative offered a unique opportunity for students to engage in cutting-edge projects focused on designing and developing autonomous aerial systems with real-world applications. Open to students from various disciplines across TKM College of Engineering, the recruitment saw a remarkable response from individuals eager to contribute their skills in aerodynamics, electronics, control systems, and CAD modeling. The applications were thoroughly reviewed, and candidates were shortlisted based on their technical knowledge, problem-solving abilities, and enthusiasm for collaborative innovation.

Selected team members began working on advanced drone systems, emphasizing innovation, precision, and performance. Through this challenging yet rewarding experience, Team DRONA aims to foster technical excellence and inspire the next generation of engineers in the rapidly evolving field of autonomous UAV technology.



## 6. Membership Drive

The SAE TKMCE Chapter was delighted to kick off its annual membership drive, inviting students to become a part of one of the most vibrant and technically driven communities on campus. With a focus on automotive engineering, emerging mobility technologies, and hands-on innovation, the membership drive aimed to bring together students who are eager to explore, learn, and contribute to the evolving world of mobility.

The campaign encouraged students across all branches to join SAE and gain access to exclusive technical events, workshops, competitions, and networking opportunities. Through this initiative, SAE TKMCE continued its commitment to fostering a culture of innovation, collaboration, and continuous learning among future engineers.



## 7. Talk Session – *First Steps into the Automotive Industry*

As part of its ongoing efforts to bridge the gap between academia and industry, SAE TKMCE organized an insightful talk session titled "*First Steps into the Automotive Industry.*" The session was led by Mr. Alin Amrulla, a distinguished alumnus from the

Mechanical Production batch of 2019, who currently works as a Validation Engineer at FEV Europe GmbH.

During the session, Mr. Alin shared his professional journey, offering valuable insights into the challenges and opportunities faced when entering the automotive sector. He discussed the importance of foundational knowledge, adaptability, and continuous learning, while also shedding light on real-world industry practices and global career prospects.

The talk provided students with practical guidance on how to approach their early careers, build relevant skill sets, and align their academic efforts with industry expectations. It proved to be a highly engaging and informative session for all attendees, especially those aspiring to establish themselves in the automotive domain.



The poster features the SAE TKMCE logo at the top left, with the tagline 'ENGINEERING REDEFINED'. The main title is 'First steps into the automotive industry talk session'. Below this, it says 'Register at:' followed by a URL in a rounded rectangle: [https://bit.ly/SAE\\_TALKSESSION](https://bit.ly/SAE_TALKSESSION). A calendar icon indicates the date 'October 20' and time '6 PM'. At the bottom left, contact numbers are listed: GAUTHAM - 82818 08177 and AASHINA - 96564 16572. On the right, a photo of Alin Amrulla is shown, with his name and title 'Alin Amrulla Validation Engineer FEV Europe GmbH' in a purple box at the bottom right. The background of the photo shows a bridge structure.

SAE TKMCE  
ENGINEERING REDEFINED

**First steps into the  
automotive industry**  
talk session

Register at:  
[https://bit.ly/SAE\\_TALKSESSION](https://bit.ly/SAE_TALKSESSION)

 **October 20**  
6 PM

GAUTHAM - 82818 08177  
AASHINA - 96564 16572

**Alin Amrulla**  
Validation Engineer  
FEV Europe GmbH

## 8. Team AereX Recruitment Drive

SAE TKMCE successfully organized the recruitment drive for Team AereX, the college's dedicated team for fixed-wing UAV (Unmanned Aerial Vehicle) development. The primary objective of this initiative was to bring together a group of technically driven and

enthusiastic students who are passionate about aviation, aerodynamics, and innovative problem-solving.

The recruitment campaign welcomed students from diverse branches who shared a common interest in flight technology and engineering design. The initiative provided a platform for aspiring engineers to engage in hands-on learning, collaborative thinking, and real-world application of UAV systems. Through the formation of this multidisciplinary team, students were given an opportunity to work on the end-to-end development of fixed-wing drones — from conceptualization and design to fabrication and flight testing.

Team AereX focuses on fostering technical excellence and creativity, providing its members with valuable exposure to aerodynamics, structural design, simulation, control systems, and systems integration. The recruitment drive received enthusiastic participation, reflecting a growing interest in aerospace and drone technology within the student community.



## 9. Talk Session – *Application of Machine Learning in the Automotive Industry*

SAE TKMCE organized an engaging and informative online talk session on the topic “*Application of Machine Learning in the Automotive Industry.*” The session was delivered by Mr. Tony Davis, a seasoned expert holding a Master’s degree in Engineering with specialization in high voltage charging systems, battery cells, and module technology.

The talk focused on the growing role of Machine Learning (ML) in revolutionizing the automotive sector, particularly in the areas of electric vehicles (EVs) and battery management systems. Mr. Davis provided a comprehensive overview of how ML algorithms are being integrated into various automotive systems to improve performance, enhance safety, optimize energy usage, and support predictive maintenance.

Attendees gained valuable insights into the practical applications of ML, the challenges involved in data-driven automotive innovation, and the evolving skill sets required in this rapidly advancing field. The session concluded with an interactive Q&A, allowing participants to clarify their doubts and engage directly with the speaker.



The poster features a photograph of Tony Davis, a man with glasses and a beard, wearing a green shirt and white pants, standing next to a green plant. To the right of the photo, the SAE TKMCE logo is at the top, followed by the text 'talk session' and the title 'Application of Machine Learning in Automotive industry.' in green. Below this, a dark purple box contains a microphone icon and the name 'TONY DAVIS', with the text 'Full stack data scientist' and 'BMW Group' underneath. Further down, a calendar icon is next to the date 'NOVEMBER 09' and time '7 PM'. At the bottom, it says 'Register at:' followed by a box containing the URL 'https://bit.ly/SAE\_TALKSESSION02'.

SAE TKMCE  
ENGINEERING. REDEFINED.

talk session  
**Application of  
Machine Learning  
in Automotive industry.**

 **TONY DAVIS**  
Full stack data scientist  
BMW Group

 **NOVEMBER 09  
7 PM**

Register at:  
[https://bit.ly/SAE\\_TALKSESSION02](https://bit.ly/SAE_TALKSESSION02)

## 10. Team SPOX Recruitment Drive

SAE TKMCE conducted an enthusiastic recruitment drive for Team SPOX, the college's dedicated bicycle design and innovation team. The drive aimed to bring together engineering-minded students who share a passion for sustainable mobility, design innovation, and cycling technology.

The recruitment initiative welcomed participation from students across departments, encouraging those interested in mechanical design, ergonomics, lightweight structures, and eco-friendly engineering to be part of this specialized team. The drive saw an overwhelming response, reflecting the growing interest among students in sustainable transport and hands-on design challenges. Team SPOX continues to push the boundaries of human-powered mobility while nurturing teamwork, technical skill development, and design excellence.



## 11. OpenFOAM Workshop

SAE TKMCE successfully organized a comprehensive workshop titled *"Introduction to OpenFOAM for CFD Applications"* for students interested in computational design and mechanical simulations. The session was conducted by Mr. Tinto Thomas, an accomplished alumnus of the Mechanical Engineering Department and former Student Chairman of the SAE TKMCE Chapter (2020–21). He is currently pursuing his Master's in Computational Engineering and specializes in CFD, FEA, Ansys, and OpenFOAM. The workshop was designed to introduce students to the fundamentals of Computational Fluid Dynamics (CFD) using OpenFOAM, a widely used open-source CFD toolbox. Mr. Tinto provided hands-on guidance and detailed explanations on simulation workflows, solver settings, mesh generation, and post-processing techniques. Participants gained practical insights into applying OpenFOAM in real-world engineering problems.

The session proved to be an excellent platform for students to enhance their technical skills and explore opportunities in simulation-driven design. It also fostered awareness about the importance of open-source tools in modern engineering analysis and research



**OpenFOAM**  
workshop

**Tinto Thomas**  
FEA, CFD, Design enthusiast  
at FAU Erlangen-Nürnberg

**DECEMBER 21**  
**4 PM ONLINE**

Register at:

<https://bit.ly/openFOAM>

SAE MEMBERS : **FREE**  
NON SAE MEMBERS : **₹50**

ADARSH - 96332 41830

STEFFINA - 77361 84380

## 12. Evolve Series

In loving memory of Dr. Mohammad Shanir P.P., SAE TKMCE proudly organized “*Evolve*”, a commemorative event series held on February 1, celebrating his enduring legacy of growth, innovation, and inspiration. Designed to reflect Dr. Shanir’s passion for engineering and progress, *Evolve* featured a dynamic lineup of activities:

- **EV Safety Ideathon**

SAE TKMCE organized the EV Safety Ideathon, a focused event aimed at generating impactful ideas that enhance the safety of electric vehicles. This ideathon provided a vibrant platform for students to brainstorm and develop transformative solutions that address real-world challenges in EV safety. It also awarded an exciting cash prize.

More than just a competition, the ideathon was a tribute to the legacy of Dr. Mohammad Shanir P.P., inspiring participants to innovate with purpose. By blending technical insight with social responsibility, the event encouraged creative thinking toward building a safer and more sustainable future in the electric mobility landscape.



- **Project EXPO**

SAE TKMCE organized a Project Expo and Competition that provided a platform for students to showcase their creativity and technical skills. The event was divided into two main segments: a Project Exhibition, where participants displayed a wide range of innovative engineering projects, and a Competition, which rewarded the most outstanding ideas with an attractive cash prize. The event not only encouraged innovation but also fostered collaboration and knowledge sharing among participants.



- **E-CYCLEX Workshop**

An engaging session on E-Cycles was conducted, offering participants an in-depth understanding of their components, construction, and working principles. The session aimed to raise awareness about sustainable mobility and promote interest in electric vehicle technologies. The experience concluded with an exciting hands-on E-Cycle ride, allowing participants to experience the functionality and potential of E-Cycles firsthand.








# E-CYCLEX

## WORKSHOP



**₹199**  
FOR IEEE/SAE/IEI MEMBERS

**₹249**  
FOR NON-MEMBERS

**EVOLVE**  
FEBRUARY 1<sup>st</sup>  
**2025**

CERTIFICATES WORTH ACTIVITY  
POINTS WILL BE PROVIDED



SATVIK - 9207747787

RAZIL - 9495815766