



Marathwada Mitramandal's
COLLEGE OF ENGINEERING

S.No.18, Plot No.5/3, Karvenagar, Pune-411 052

Accredited with 'A' Grade by NAAC

Accredited by NBA (Electrical and Mechanical Engg. Department)

Recipient of 'Best College Award 2019' of SPPU

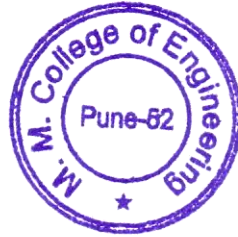
Recognized under section 2(f) and 12B of UGC Act 1956

Criterion 7

7.2: Best Practices

7.2.1. Best Practice - I : Professional skills exposure to students

Sr. No.	Parameter	Academic Year	Documents
1	Best Practice - I : Professional skills exposure to students	2019-20	SAEINDIA BAJA
2			Robocon 2019
3			SAEINDIA SUPRA
4			IEEE Webinar_Hackathon
5			SAEINDIA NIS Efficycle




PRINCIPAL
M.M. College of Engineering
Karvenagar, Pune -52

Report of BAJA SAEINDIA 2020

TEAM ABHEDYA, MMCOE, CAR No. 116

Team Abhedya of Marathwada Mitra Mandal's College of Engineering, Pune participated in the National Level Event of BAJA 2020 organized by SAEINDIA from 22 to 26 January 2020 held at NATRAX, Pithanpur, Indore, Madhya Pradesh. The team of 27 students accompanying faculty advisors Dr. K. R. Patil and Mr. S. G. Kale participated in this event.

Team Abhedya has shown fabulous performance by securing **4th Rank at National level** in this event and won the following awards and accolades.

- **AIR 4 Overall**
- **AIR 2 in Suspension and Traction Event with Prize of Rs. 40000/-**
- **AIR 2 in Go Green Event**
- **AIR 5 in Endurance Race**
- **Dr. K. R. Patil has been honoured with Prestigious National level 'Dronacharya Award' of BAJA SAEINDIA 2020**

The journey started with the vehicle transportation on 19 January from Pune to Indore. Further, team members along with faculty advisors Dr. K. R. Patil and Mr. S. G. Kale went to Indore on 20 January 2020 for the unloading of vehicle and for the team registration on 21 January on the event site. Total 9 members from Team Abhedya were short listed for the BAJA Aptitude Test which took place on 22 January 2020. The Technical Inspection of the vehicle was also held on 23 January. Our ATV was one of the few teams who had cleared Technical Inspection and Brake Test on 23 January 2020.

After the inauguration on 23 January 2020, competition was resumed and we smoothly cleared Engine Test. After engine test, the presentations of static events of Sales and CAE evaluation took place simultaneously. On 24 January, the design evaluation was scheduled at 12.30 pm, accordingly we were ready with our vehicle by 12 pm. Finally, the design evaluation was successfully over by 1:30 pm. Remaining static events presentation of Cost and Go green were finished up. Next we went for the first attempt of the acceleration event, wherein the acceleration time was 4.77 sec. After which we made a few alterations in the transmission system of our ATV and went for the second attempt of acceleration, where the acceleration time came out to be 4.89 sec.

Next day was all about the dynamic events. By planning our strategy a night before, we went for the maneuverability event in the afternoon at 8:00 am. Followed by which we attempted Rock crawl Test and Suspension and Traction Test with two chances. During second attempt of Suspension and Traction Test our ATV had finished track within 51.82 sec. By the end of the day, we made the required changes in the ATV for the endurance race scheduled for next day.

Endurance race started on 26 January at 10:15 am and continued for the next 4 hours. When a quarter of race was still remaining, our car faced a UCA mounting pipe shear, and as any sort of welding was not allowed, the team members came up with a temporary fix to carry on with the endurance. The driver Atharv Jagtap drove tactically and skillfully, and managed to add 6 laps even with the failure, which proved to be a game changer. After many hardships and obstacles, we managed to achieve an AIR 05 in the endurance race. Prize distribution ceremony started at 3.30 pm. The overall expenditure of the event is as follows.

Overall Expenditure:

Sr. No.	Receipt		Payment	
	Details	Amount (In Rs.)	Details	Amount (In Rs.)
1	From MMCOE (For Virtual BAJA)	29,922	Virtual BAJA Expenses	29,922
2	Sponsorship for main BAJA From MMCOE	2,33,514	BAJA Phase-I Registration	23,615
3	Revenue Generation from Ketto Fundraiser	1,92,560	BAJA Phase-II Registration	29,500
4	Revenue Generation From ATV FEST	52,300	ATV Manufacturing	6,37,409
5	Faculty Expenses For Main Baja from MMCOE	21,299	Faculty Expenses For Main Baja	21,299
6	Team Members Contribution	2,30,000	Vehicle Transportation Pune-Pithampur-Pune	17,850
7	Total	7,59,595		7,59,595

We, Team Abhedya are very much thankful to Hon. Management of MMM, Principal, Staff, Students and Sponsors for their continuous support throughout the year and making this entire journey successful.

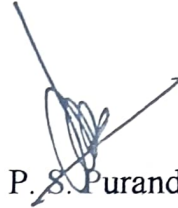
With these inspiring results and new zeal our Team Abhedya is going to participate in **International Event 'BAJA SAE Arizona'** at Tucson, Arizona, USA from 02 April to 23 April 2020.



Mr. S. G. Kale
Faculty Advisor



Dr. K. R. Patil
Senior Faculty Advisor



Dr. P. S. Purandare
H.O.D. (Mech. Dept.)

To,
The Principal
MMCOE, Pune

Glimpses of Event:



Team Abhedya receiving Second Prize in Suspension and Traction Event worth Rs. 40000/-



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ROBOCON 2019

Faculty Advisor -

Prof. Gaurao Chaudhary

Prof. Shubhangi Joshi

Introduction -

Team Rudra is the Robotics Club of Marathwada Mitra Mandal's College of Engineering. Team Rudra has been participating in ABU Robocon since 2015. Robocon is a Robotics contest organised by Asia Pacific Broadcasting Union where teams of engineering students from various countries in Asia Pacific Region compete to complete the given tasks.

Every year the host country selects the game theme based on their culture and traditions. All the participating teams develop 2 Robots to complete the given tasks within the set time constraints.

Since our debut in Robocon 2015, where we were awarded the "Best Rookie Award". Team Rudra has shown remarkable progress in a very short time span, currently acknowledged as one of India's Best Teams.

Organizing Country - Mongolia

Theme - "Sharing the Knowledge"

Theme Implementation -

The theme was "Sharing the knowledge". The MR1 was semi-automatic. It had encoders mounted on the shafts which formed the automatic part of the MR1 bot, which would be used to traverse the Khangai area. The MR1 traversed at an angle which would result in minimum distance of travel for the forest area. The bot was to be controlled by an operator using a wireless controller. The 2 DC motors gave an immense potential to the throwing mechanism to attain maximum throwing range which reduced the time required while throwing the Shagai. This mechanism helped Shagai to follow a required projectile motion.

In order for the MR2 to set itself in front of the Tussock, the robot used both linear forward and diagonal forward motion after crossing the Sand dune. The bot used forward motion for crossing the Tussock. This was achieved by controlling the



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actuation length using feedback of Reed switches which allowed the bot to acquire a variable position. After crossing the Tussock, it used the Laser sensor to detect the wall so as to stop and reposition manually. The robot climbed the Mountain in forward motion in the Gobi area. After climbing and reaching the top of the Mountain, the robot raised the Gerege marking its victory.

Team Achievement -

Team Rudra stood an impeccable All India Rank 1 in the Video Submission Round of Robocon 2019.

Raising the bars again, Team Rudra achieved an amazing All India Rank 11 in the Nationals held at Delhi.

Team List -

Name	Branch	Year
Vrutik Velani	Mechanical Engineering	Final Year
Mervyn Vaz	E&TC Engineering	Final Year
Pranav Auti	E&TC Engineering	Final Year
Gautami Deshpande	Mechanical Engineering	Third Year
Harshal Kulkarni	Mechanical Engineering	Third Year
Neha Awate	Mechanical Engineering	Third Year
Shridhar Myakal	Mechanical Engineering	Third Year
Swaraj Deogaonkar	E&TC Engineering	Third Year
Prathamesh Phulpagar	Computer Engineering	Third Year
Pravin Kadam	Computer Engineering	Third Year
Shivani Ingale	Computer Engineering	Third Year
Sanket Kale	Computer Engineering	Third Year
Vishakh Shewalkar	Computer Engineering	Third Year



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Anurag Karambelkar	Mechanical Engineering	Second Year
Atharva Kulkarni	Mechanical Engineering	Second Year
Chinmay Kashid	Mechanical Engineering	Second Year
Malhar Atre	Mechanical Engineering	Second Year
Pragalbh Shivane	Mechanical Engineering	Second Year
Aadesh Aslekar	E&TC Engineering	Second Year
Anjali Phuse	E&TC Engineering	Second Year
Madhura Barshikar	E&TC Engineering	Second Year
Manthan Manjrekar	E&TC Engineering	Second Year
Nikhil Pawankar	E&TC Engineering	Second Year
Sameeran Chandorkar	E&TC Engineering	Second Year
Ayush Pathak	Computer Engineering	Second Year
Vedant Parnaik	Computer Engineering	Second Year

Faculty Advisor

Prof. Gaurao Chaudhary

Prof. Shubhangi Joshi



MARATHWADA MITRA MANDAL'
COLLEGE OF ENGINEERING, KARVENAGA]



PUNE-46

TEAM ABHEDYA RACERS
AT
SUPRA SAEINDIA 2019
(16th to 20th July 2019)
EVENT REPORT

MARUTI  SUZUKI

Presents



July 13th

The team of 32 members and 2 Faculty Advisors began their journey towards Bandra Terminus, Mumbai at 9:30 AM from college campus through a bus. With 4 hours and thirty minutes of journey, along with a journey break for refreshment, we reached Bandra Terminus at 2:00 PM, and boarded the station canteen and members and faculties had their lunch. The journey to Delhi began at 4:10 PM with Garib Rath Express.

July 14th

Team reached Hazrat Nizamuddin Station, New Delhi, at 10 in the morning. The team members which were selected as Volunteers of SUPRA SAEINDIA left off in the cabs because they had to reach the event site earlier. The remaining team members with the faculty advisors went through Delhi Metro to Pari Chowk metro station and from Pari Chowk metro station to Hotel Sangvi Palace by auto rickshaw, and finally reached the destination by 1 PM in the afternoon.

July 15th, Day 0

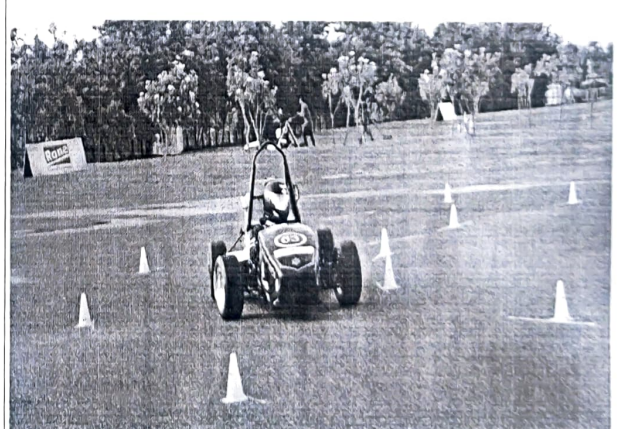
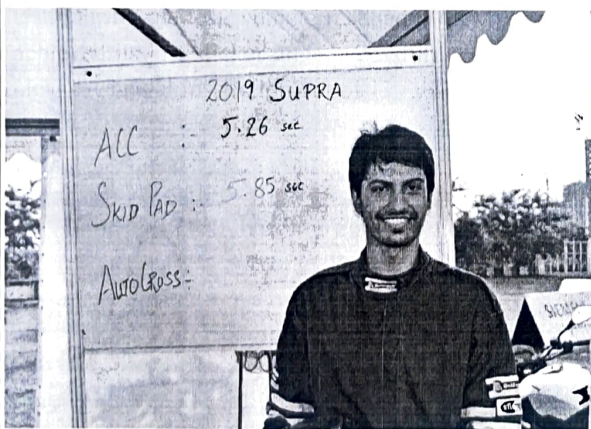
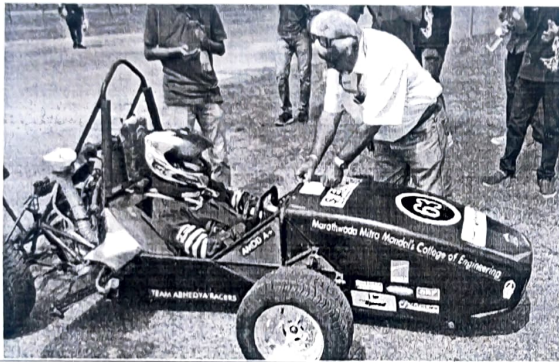
The day 0 was all about the on-site registration for SUPRA SAEINDIA 2019. Team reached the event site at 9 AM and completed the on-site registration procedure and unloaded the vehicle at 10:30 AM and took the vehicle, trunk and other spare boxes to the pit. Pit number 68 was assigned by SUPRA SAEINDIA committee. Team settled each and every box into its fix place and set the vehicle too, taking "Cleanest Pit Award" in accordance. The team members who were assigned for maintenance set up the vehicle ready for the Technical Inspection, which was happening on the next day. The work finished till 5 PM and 6th members boarded the bus and left to the hotel.

July 16th, Day 1

The first step of Technical Inspection was supposed to start at 9 AM, but the team members were ready with the vehicle at 8:30 AM, taking "Fastest TI Award" into accordance. The vehicle was 6th out of 127 in the line of scrutiny test. At around 11:40 we were called into BAY No. 1 for scrutineering. The judges complimented the design of the car in their first glance and took a challenge of finding some flaw according to the rule in the vehicle. After 35 minutes of inspection, the judges asked us to make a minor changes in the vehicle, those were to change the brake pedal position and cover the radiator with a shield. Just the technical leads of the team took the vehicle to the Hot Pit and made the changes within 35 minutes and took the vehicle back into the pit. The judges asked the status of vehicle and asked to line up for the re inspection against suggested changes. The Judges re-inspected the vehicle and finally passed the Scrutiny Test on the very first day of the event. Just then, team went for the Weight check. car weighed 203 Kg in dry condition and the next was Egress test. Our first driver- Amod Raut passed the Egress test with 2.8 seconds and second driver- Kunal Bhamare passed with 2.6 seconds off 5 seconds. The vehicle was then fueled with 5.3 litres of Speed Petrol, and went for the Tilt test. When the vehicle was at 45 degrees, inspectors found the leakage of fuel at fuel intake and suggested the changes and asked the team for 2nd attempt on the next day. It was 6:15 PM and team boarded the bus and reached hotel at 7PM.

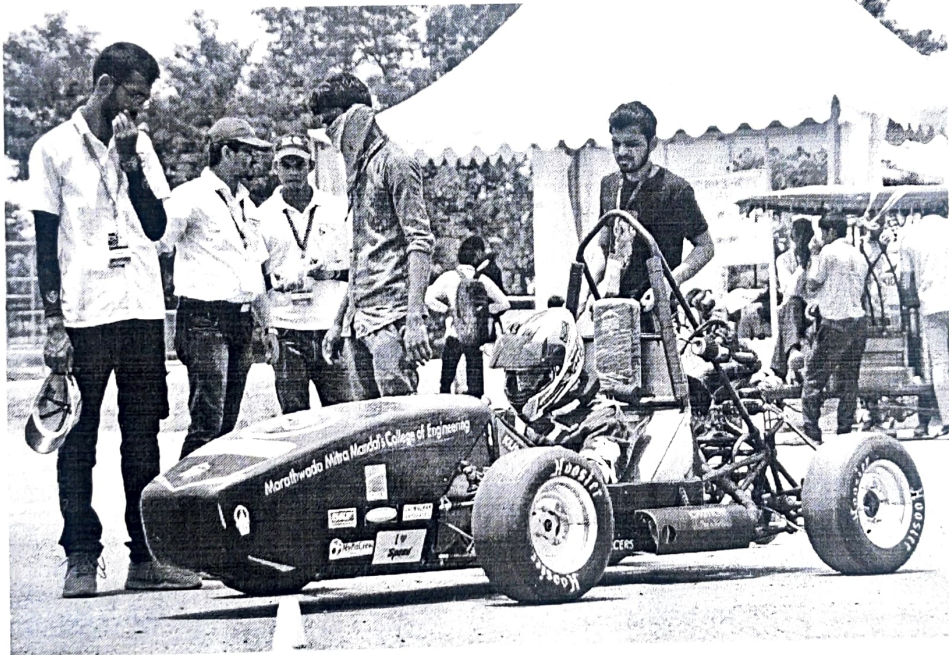
July 17th, Day 2

In the early morning, the technical leads of the team showed up at 7:30 AM at the event site to clear the technical issue of the fuel line. They cleared it till 8:30 AM and cross-checked the vehicle. At 9 AM, the tilt test judges arrived and the test begun. The car was again tilted at 45 degrees to check leakage, it was cleared, and then it was tilted to 60 degrees to check the stability, that too was cleared. Soon after, the leads went for the last step of technical inspection- Brake Test. At its first attempt, the front two wheels did not lock, and the attempt got wasted. The vehicle was taken to the pit, where the members did bleeding of the braking circuit, and again headed for second attempt of the brake test. During the test, vehicle reached 40 KMPH as per the rule, brake was applied and all wheels got locked. Team achieved its last sticker and successfully completed the Technical Inspection on a very 2nd day and was 6th team to clear Technical Inspection out of 127 teams.



Soon after the vehicle was taken into the pit, and to make the strategic decisions regarding the dynamic events all team members lead to the pit. It was around 4 PM, the volunteers approached the pit and asked to attempt the skid pad, as that was judges' call. As per the strategy, team's second driver- Kunal Bhamare was supposed to take both the attempts of skid pad. After few practice laps, Kunal finally decided to go for his first attempt. He completed the first attempt and gained confidence, and immediately decided to take the second attempt. He completed the second attempt with one cone penalty, beating the Veloce racing team, we set the record of 5.85 seconds for the competitors for SUPRA 2019. Seeing the name on record board the energy of team boosted.

The next dynamic event was the Acceleration. Its both attempts was supposed to be taken by both the drivers, one after the other. Securing the best, our second driver Kunal decided to take the first attempt of acceleration, he recorded 6.5 seconds, which was not good. The next attempt was supposed to be taken by the first driver- Amod Raut. He recorded 5.26 seconds, and according to the records, the team stood second in the acceleration. Just the fingers were crossed, because any one off 125 other teams should not break this record. At the end of the day, due to the dynamic events done so harshly, there was some noise in the front hub in the left side. To tackle this, Team leads then decided to concentrate on the statics and planned for doing the correction in the wheel end and packed up for the day.



July 18th, Day 3

On this day, Statics events were scheduled. The statics team was continuously in their preparation, and did focused on dynamics. The design team was lead by Sameer Maniyar, followed by Tushar Gopale as Engine and Powertrain Head, Kunal Bhamare as Chassis Head, Rhushikesh Bhosale as Brakes Head and Chinmay Deshmukh as Steering Head. First, the Design evaluation of the car was supposed to be held at 11:00 AM. The design evaluation went absolutely great and the next was Cost Evaluation in the same bay. Cost was lead by Akash Wadgaonkar, followed by Rutuja Shete and Bhagyashree Tanpure in the team. It was also done absolutely great by the cost team. Meanwhile, the CAE team, lead by Madhvaraj Kulkarni and colleague Sumit Kangane was ready for their presentation in the pit. According to the CAE judges, our team and team number 66 were the best of all, but the question was who should win the first prize for CAE, that was supposed to be discussed with higher authorities of CAE and might be declared on the next day. For the best girl participant, Rutuja Shete was nominated from the team and went for the interview during the time. The technical leads, Sameer, Tushar, Mandar and Shubhankar went to sort out the corrections in the front left wheel end whereas around 3:30 PM Business Presentation team went for the presentation. It was lead by Team Captain Rhushikesh Bhosale and colleague Shaunak. During the presentation, the judges claimed that the planning, marketing strategies, ROI, Break Even was fantastic but the presentation was about the hypothetical car with the perfect design, which did not match the rules and regulations of the business

presentation event. Though, all other things were perfect, rather than the disqualification, judges were supposed to cut some points from the total points of 75. Team wrapped up the pit till 5:30 PM. The technical leads who went to make the correction in the front wheel ends were already reached at the hotel after finishing their work, and would re-install the system in the next morning.

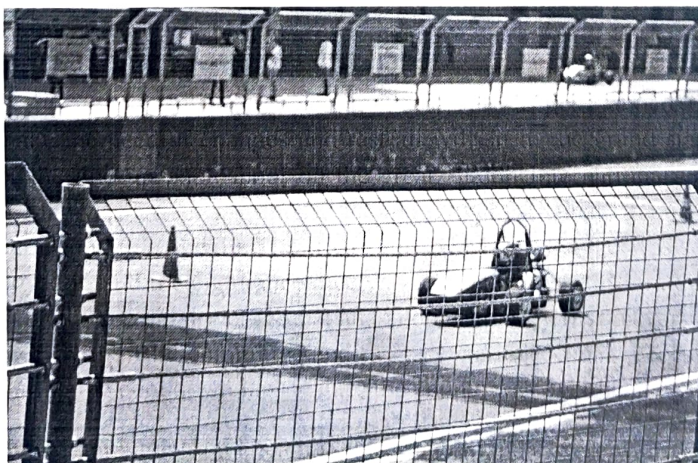
July 19th, Day 4

At around 7:45 AM technical leads re-installed the wheel ends. We tested it, there was still some noise coming from the same part. Without hesitating for the same, team leads decided to go for the first attempt of autocross. Both of the attempts was supposed to be taken by the first driver- Amod Raut. When the first attempt started, all the dynamic judges were amazed by the start he took. Within the track, unfortunately, Amod got confused and missed 3 cones and touched 1 cone which lead to the penalty of 61 seconds and total time was 2 minutes 31 seconds. The team leads and drivers then came together to know what has gone wrong, and CAE team went for their final presentation into the pits. The driver gained confidence again, till the judges were back from their lunch break and the car was lined up for the second attempt of autocross. When it was our chance for the run, the statics' judges showed up and noticed the noise coming from the wheel ends. After half an hour of inspection and test run on skid-pad track, they asked us to change the part and come back. The technical leads soon then went to the nearest workshop and made the necessary changes the part and came back to the event site, but it was late for us. Both the drivers went for the drivers' walk, to know the track and develop a strategy for endurance.

July 20th, Day 5

Team reached the event site with full of enthusiasm at 8:30 AM, as per planned, only technical leads will be hanging around the car to make the needful changes and rest all will sit in the grand stand, team followed so. The car was fueled and went for the line up photoshoot on the great Buddh International Circuit, for the third time in a row. Technician- Sameer Maniyar, Driver 1- Amod Raut and Driver 2- Kunal Bhamare took the vehicle to the endurance line up. The ranked fourth in this line up. The stunt show by Maruti Suzuki was scheduled for half an hour. Everyone at the event site enjoyed it, and the endurance race was started. As per the strategy developed by the leads, first four laps was to be taken by the second driver- Kunal and another four by first driver- Amod. It was done accordingly, the scrutiny test happened by the BIC committee and the race started. Kunal successfully completed the first four laps, but unfortunately, during the cool down lap (5th lap) the engine was over heated and we were out of the competition.

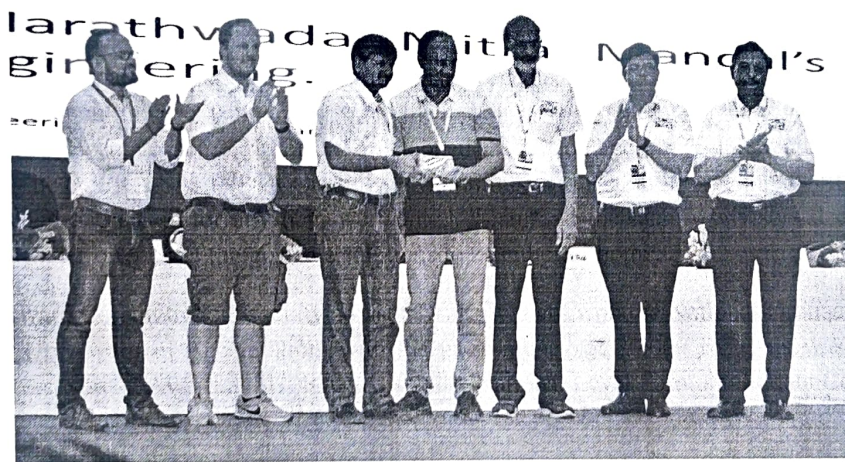
The competition got over, along with the team, Sameer and Mandar were waiting for the car to arrive (was supposed to be carried by a trailer, provided by BIC). They then spotted the front left wheel along with the wheel ends is missing. When the car was released by the trailer, they figured out that this wasn't the failure which occurred during



the endurance. The parts got broken so brutally that even the OEMs did not took so much load. They asked the incharge of BIC about the accident, he neglected the reason. Team Captain and leads took the news to the Organizing Committee. They went to some private room, looked at the footage and figured out something which was kept confidential. The SUPRA SAEINDIA Organizing Committee and Buddh International Circuit Committee apologized for their mistake and asked for any help we wanted. Team and the faculty advisors decided to attend the Award Ceremony and later on look at the possible solutions to take the car home.

During the Award Ceremony, our faculty advisor Dr. K. R. Patil won the National Dronacharya Award and the team won Runner Up Award in Acceleration, with the prize money of 20,000 Rs. This was the very first time Team Abhedya Racers won an Award at SUPRA SAEINDIA National Level Formula Student Competition.

- ABHEDYA RACERS



Soon after the function, technical leads- Sameer, Tushar, Rhushikesh and Mandar took the broken parts and spares to nearest village's workshop to fix it. They returned within an hour and made the vehicle in normal condition, but the left wheel could not be able to steer because steering arm was sheared. The team and faculty advisors then decided to take the photographs and make the victory memorable. Soon then, the inventory team packed up everything, the nose was disassembled and we took the trunks, boxes and cupboard to the trailer. We loaded the car in the trailer and boarded the bus at 8:30 PM and reached hotel.

July 21st

Team members planned to explore the Capital of India and got divided into 4 groups and begun their journey. All were in contact of each other, Captain and Faculty Advisor in case of any emergency. All members reached the hotel till 10 PM safely.

July 22nd

We began our return journey from Hotel to Rohila Sation by cabs and reached the destination by 8:30 AM. The train was on the platform and was supposed to start at 9:20 AM. The return journey from Delhi to Mumbai began.

July 23rd,

Team reached Bandra Terminus, Mumbai at 10:20 AM. The bus transport was arranged to take the team from Mumbai to MMCOE was already waiting for us. Team boarded the bus. We had a breakfast near Khopoli and reached college at 1 PM.

Finance:

College Contribution	3,49,946/- Rs.	3,49,946/- Rs.
Student Contribution	1,48,000/- Rs.	3,45,659/- Rs.
Monitory Sponsorship	1,74,125/- Rs.	
Materialistic Sponsorship	23,534/- Rs.	
Total		6,95,605/- Rs.



(Prof. A. D. Desale)
Additional Faculty Advisor,
MMCOE SAEINDIA Collegiate Club



(Dr. K. R. Patil)
Senior Faculty Advisor,
MMCOE SAEINDIA Collegiate Club



Dr. P.S. Purandare
HOD
Mechanical Engg.



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MMCOE IEEE Student Branch

Name of the Event: Webinar "Get-Set Hack.a.thon!"

- **Event date: May 23, 2020**
- **Time: 4:00 P. M. to 5:00 P. M.**
- **Mode: Online through Cisco Webex**
- **Speaker: Mr. Soham Dixit**
- **Number of participants: 211**

Get-Set Hack.a.thon! Webinar was conducted as the first national level online event conducted by our student branch on the same day (23rd May 2020) after the inaugural function. Mr. Soham Dixit, winner of various hackathons such as Airbus Hackathon 2018 was the speaker of this event. After this webinar we received many positive feedbacks regarding our management and overall organization of the event.

Event Details:

The event was conducted online, on 23 May,2020 at 4:00 P.M. to 5:00 P. M. through Microsoft Team meeting. For this webinar, total 211 participants including students, faculty and Industry persons were registered. The session was started by the introduction of Mr. Soham Dixit by Ms. Divya Raput. He guided with focus mainly on the importance of hackathon and key points which one should remember while participating in the same. During session he has pointed some important things like what are the impacts of hackthon in our placements, why this is important, How to proceed with using unique idea as well as skills required to participate in Hackathon. Many students and faculty members have participated in "Question and Answering" session at last. Speaker was also happy to answer all the doubts. At the end, Ms. Divya Rajput delivered the vote of thanks and the session was concluded.

Leaflet of the event:



Mr. Soham Dixit

- Intern at American Express, Bangalore
- Airbus Hackathon 2019 Winner
- Smart India Hackathon 2018 Winner
- Led the team monitored by MOSPI, Govt. of India for CPI data collection system

Join us on **23 May, 2020 at 3 PM**

Register for free at :

bit.ly/mmcoewebinar

Student coordinator :

Karthik : 7720092545



Staff coordinators :

Asst. Prof. S. P. Mone

Dept. of Computer Engineering

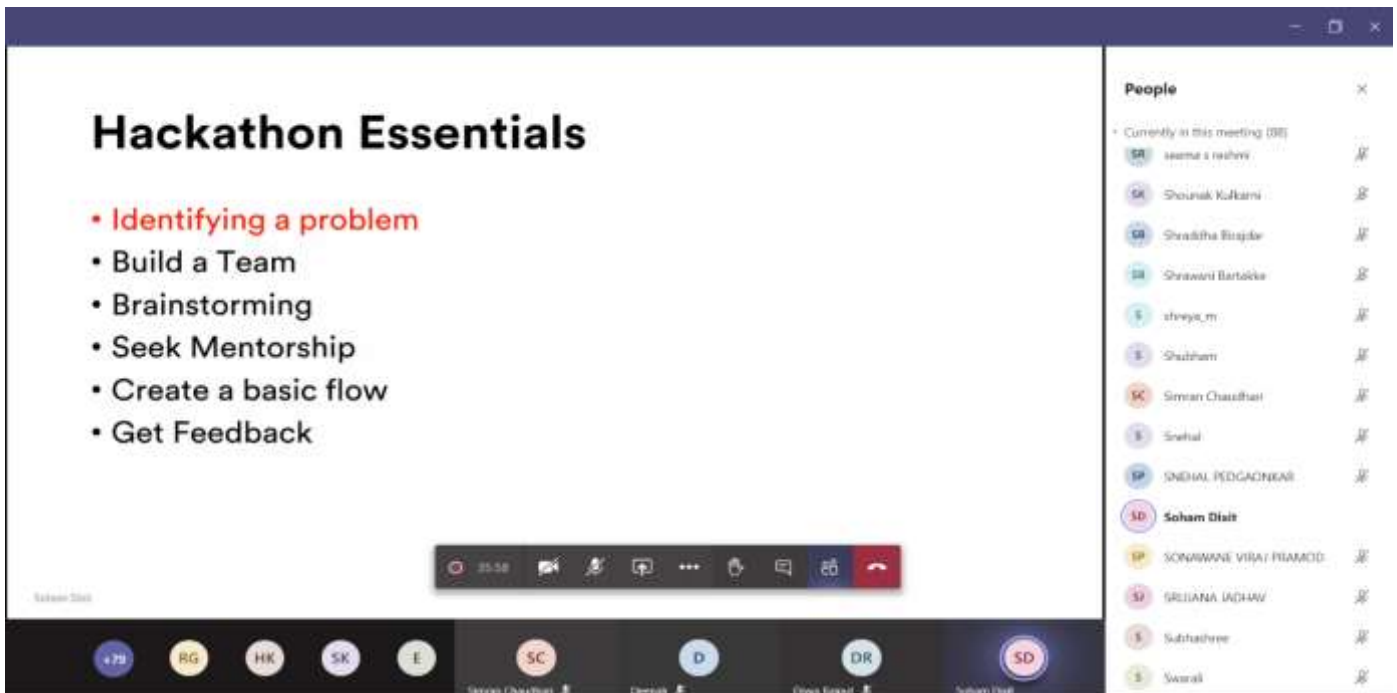
Asst. Prof. A. D. Kulkarni

Dept. of Computer Engineering

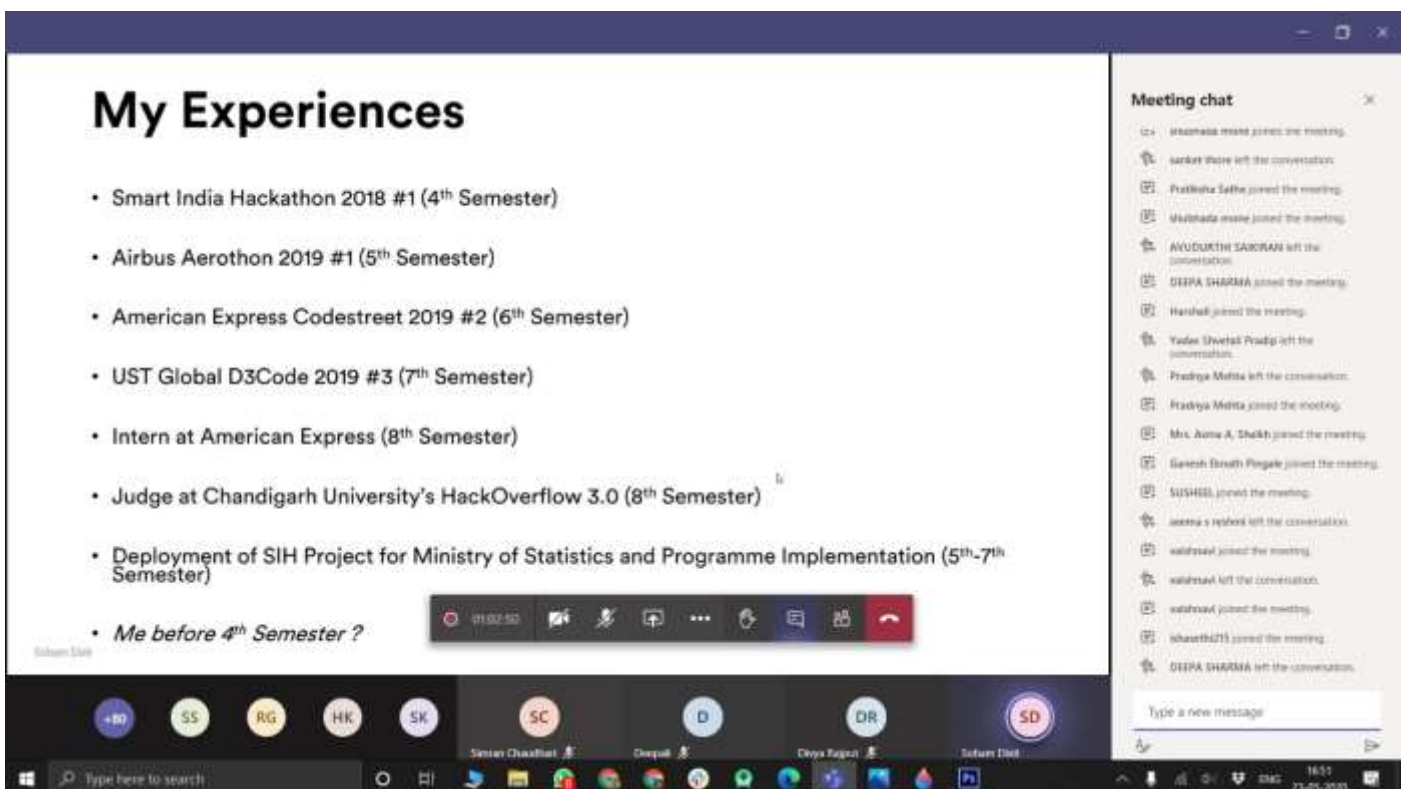
Dr. S. M. Deshpande

Principal, MMCOE Pune

Session will be conducted on **Cisco Webex**



Webinar was an interactive session (via Meeting Chat):



Speaker Mr. Soham Dixit started the webinar by sharing his experience:

Remember!

Developers during hackathon:
We built an entire application in just 3 days.

Developers after hackathon:
Adding that icon is going to take 3 weeks.

- Got an idea ? Explore, Innovate and implement!
- You grow as a strong developer
- Bugs you love solving those.
- Challenges ? You master them!
- Self Learning is immense during the hack phase

Meeting chat

- Wendee Shetty - 4:25 PM
Connectivity to all workers
- Shourak Kulkarni - 4:25 PM
schedule of crew
- Sagar Bhambale - 4:25 PM
passengers and staff working overfied
- DIPAK PAWAR left the conversation.
- Arun Deshpande - 4:25 PM
Security personnel
- Wendee Shetty - 4:25 PM
Accessible to each worker
- Subhadev rease joined the meeting
- Suresh Bhoath Pringle left the conversation.
- SOPALI joined the meeting.
- Arun Deshpande - 4:25 PM
Inventory and maintenance management
- Reshan - 4:25 PM

It was followed by a Question and Answer session where all students cleared their doubts and got their questions answered by chief guest.

How to participate ?

I WANT YOU TO JOIN HACKATHON

- Online Platforms viz. Hackerearth, Government portals, skillenza, dare2compete, etc.
- College hackathons – go participate in those!

People

- Currently in this meeting (88):
- seema s reshmi
- Shourak Kulkarni
- Shradha Brajdar
- Shrawan Bartakke
- shreyas m
- Shubham
- Simran Chaudhari
- Snehal
- SNEHAL PEDGAONKAR
- Soham Dixit
- SONAWANE VIRAJ PRAMOD
- SRIJANA JADHAV
- Subhashree
- Swarsh

Questions and answer session conducted at the last helped many students to solve their doubts and they also got clear idea of Hackathons





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SAENIS EFFI-CYCLE 2019 COMPETITION

Date: 21/9/19

Local technical inspection:-

On the day of 21/9/19 we have local Technical Inspection in our college. The two members committee from SAE India are there to check that vehicle is designed and manufactured according to rule book.

They suggest us to do few changes for the main event which are

- Wire covering
- Battery mounting
- Slippage of motor freewheel
- Utility lid opening
- Seat belt mounting tabs

Without delay we completed the above points and started packaging of vehicle as well as purchase and manufacturing of extra material.

Pre-event preparation:-

Packaging the vehicle as well as all extra and needed material with all documents which will required on event site.

Date: 26/9/19

The vehicle was loaded in a container to transport from Pune to LPU Punjab. So that it will reach on event site on 30/9/19 as per transporting company said.

Date: 27/9/19

Team Achilles along with two faculty advisors **Prof. A.M. Suryawanshi** and **Prof. P.S. Khade** depart to LPU through Mumbai, in Paschim express.

Date: 28/9/19

All members of team were reaching to LPU in evening

Date: 29/9/19 to 30/9/19

All members went into the LPU campus for pit and event site visit. After that all static event members practiced their presentation in front of faculty and rest of team.

Actual Event Site:-

DAY 1

Date: 1/10/19

This is the 1st day of SAE NIS EFFICYCLE 2019 EVENT. Two members from the team were registered the team for the main event. Rest of the day preparation is going on.

DAY 2

Date: 2/10/19

Time: 12 P.M

Vehicle was reach at the accommodation site.

All team members are busy with total assembly of vehicle.

Time: 3.30 P.M

Vehicle reaches at allotted pit area. B y 4pm we line up for the 1st attempt of TI.

Time: 5.15

TI was started, but at 5.30 TI areas were closed due to the welcome function arranged by SAE INDIA.

In this our 1st attempt was not considered.

Time: 8pm

We closed the pit area and moved towards to accommodation.

DAY 3

Date: 3/10/19

Time: 8.30 A.M

Again we line-up for the TI. From 9am around 2hrs TI was carried out by 3 judges. We were supposed to do some minor changes by the judges. Within an hour we line up for 2nd attempt of TI.

Time 12.30 A.M

We cleared our TI and we were 7th team who cleared the TI.

Time 1.00 P.M

Vehicle moved towards the safety check, it includes figure of eight, electrical drive test, brake test. We clear figure of eight tests in 1st attempt with in **45 Sec.**

Time 1.30 P.M

We lined up for electrical drive test but due to lunch break it was started after an hour.

Time 2.30 P.M

We clear electrical drive test in 1st attempt and we got our 1st safety sticker of **electrical drive ok**

Time 2.40 P.M

We went for brake test our 1st attempt of this test was failed because the speed of vehicle is less than 25kmph. We took 2nd attempt right after this and cleared the test with the speed of 31kmph. Here we got our 2nd safety sticker of **brake test ok**.

Time 3.00 P.M

Then weight test is carried out by inspectors and the total weight of vehicle is around **97.75 kg**. Right after weight test two members of our team and the vehicle is went to the CAD CAE analysis report.

Time 4.00 P.M

After CAD CAE we move towards the safety check which is the final TI.

The judge who carried out this inspection shows very high interest in our vehicle and hence he took a ride in our vehicle. After the ride with lots of happiness he placed the final **safety check ok** sticker on the vehicle with his best wishes. Main thing was we were the 6th team who completed the safety check event.

After safety check all dynamic events are opened for us, and those have 2 attempts.

- Gradient simulation test
- Drive excellence test
- Acceleration test

Time 5.00 P.M

So we moved toward gradient simulation test. In this test vehicle have to carry total 10kg of extra payload with it in utility box. The track was 50 M long, in our 1st attempt we took 7.5 sec. only to complete this event.

Time 5.30 P.M

We line up for drive excellence test, due to bad weather all the dynamic event were closed by the officials for that day.

DAY 4

Date: 4/10/19

On this day we have to clear the remaining static as well as dynamic events, those are,

- 10.30 marketing presentation which was presented by Atharv, Vaishnavi and Nikita.
- 11.00 Drive excellence test – 1st attempt; total time to cover the test is **2.55 min**.
- 1.00 Acceleration test – 1st attempt; total time took by vehicle was around **15.32 sec**.
- 2.30 Cost report which was presented by Shubham and Nitin.
- 3.15 Design report which was presented by Rahul and Ashay.
- 4.00 As build report which was presented by Mayur, Shaunak and Jay.

- 5.00 Gradient simulation test – 2nd attempts; total time was **6.42 sec.**
- 5.30 Acceleration test – 2nd attempts; total time was **12.56 sec.**
- 6.15 Drive excellence test – 2nd attempt;
In this we faced the issue of slippage of motor chain and because of this we took **7 min.** to complete the test.

Time 7.00 P.M

We went to Hot pit zone to overcome the chain issue and this is our 1st and last time when we went to hot pit area. In this we solved the problem and after that we check all assemblies of vehicle and then we replace such parts which may cause brake down in final race.

Time 9.00 P.M

We took vehicle in testing area, around 2 hours of rough testing the conclusion was, and we completely overcome the only failure in our vehicle.

Time 11.00 P.M to 1.30 A.M

- In this time we make vehicle completely prepared for the final run.
- We made our spare such as wheel assembly, extra nut bolts, and puncher kit ready.
- We discussed the strategies for the next day.
- Battery charging is simultaneously going on side by side.

DAY 5

Date: 5/10/19

Time 8.00 A.M

Team meeting

Minutes of meeting:-

- Checking of vehicle
- Spare parts
- Final strategy for endurance.
-

Time 9.30 A.M

Line up of all vehicles was declared by the officials of SAE and we proud to say that we were on the 2nd position of the line-up.

Time 10.00 A.M

The technical judges took all the drivers to explain where the actual race is going on and which difficulties they have to face in race on the track.

Pune
2020
Time 11.30 A.M

Mr. Ahuja, the president of SAE India started the race by flagging the flag.

The race was of 90mins.

Time 12.50 A.M

Just 10 min before the end time we have a major failure. Our rear wheel which is OEM part was broken due to bumps of 8 inches. We replaced it but the endurance time was over.

At the end completed fourteen and half laps and fourth place all over the race.

Time 1.00 A.M

Endurance race was called finished and

Final result:

- Lovely professional university, Punjab.
- College of engineering, Pune.
- Chameli Devi group of institutions, MP.
- Marathwada Mitra Mandal's college of engineering, Pune.
-

Time 2.00 P.M

Award ceremony was started in auditorium. In 1st one hour welcome function and felicitations by the guests on the desk. Then the actual award ceremony was started. And proud to say that we got FIVE awards those are

- **Acceleration Award – All India 1st rank.**
- **Gradient simulation award – all India 1st rank.**
- **CAD-CAE Award – All India 1st rank.**
- **Cost Report Award – All India 2nd rank.**
- **Design Report Award – All India 2nd rank.**

Time 5.00 P.M

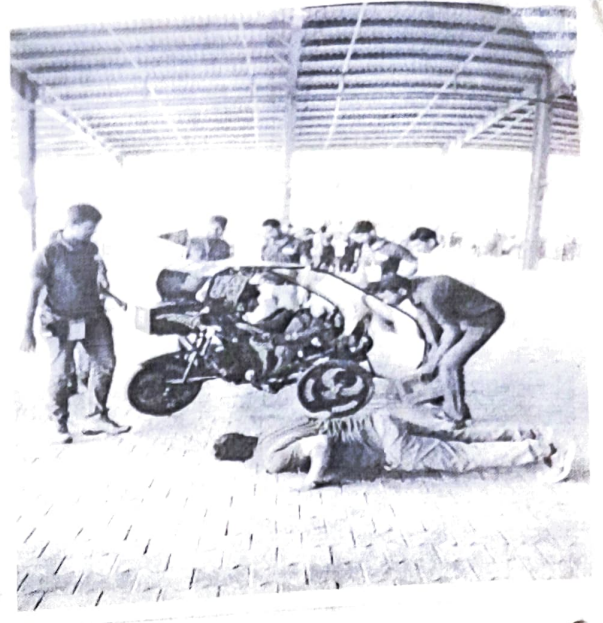
We took group photos of vehicle, Awards and the team members with judges, mentors, SAENIS event organisers.

Time 7.30 P.M

We started our vehicle packaging and at 9pm we put the vehicle in transportation area and close the pit. Vehicle reached in Pune on 18th Oct 2019.

After Event:

After achieving the great success team Achilles return to Pune on 10th of Oct. 2019, and warmly welcomed by the principle and all professors.



Mr. Shubham Khairnar
Captain

Dr. P. S. Purandare
HOD Mechanical Dept.

Prof. P. S. Khade
Faculty Advisor

Dr. V. N. Gohokar
HOD Electrical Dept.

Prof. A. M. Suryawanshi
Faculty Advisor