

# **CLUB OPTIMUS ANNUAL REPORT 2023-24**



# INDEX

WEB SHOWDOWN.....	3
ENTREPRENEURSHIP DEVELOPMENT PROGRAMME.....	4
GAMEFEST.....	5
ABC'S OF ROBOTICS 2.0.....	6
ROBOVEDA 2023.....	7
SIH 2023.....	8
HACKENVISION 2.0.....	9
ROBOTEC-2K24.....	10
TALAASH.....	11
TEAM.....	12

# WEB SHOWDOWN

Date : 05 - 08 - 2023

Club OPTIMUS conducted a front-end submissions contest online for the students of MJCET. Certain Guidelines were set for the participants such as their submissions having HTML and CSS files and having a minimum of two pages. A restriction of not enlisting the use of any AI tools in the creation of the website was applied as well.

Theme Suggestions were provided and out of 20 registered participants, 16 had submitted a complete and functioning website for judgement. Submitted websites were of a refined quality and showcased the potential of future developers from amongst the students of MJCET.

Submissions : 16

Registration fee : 40/-

Expenses : 600/-

Event Poster :



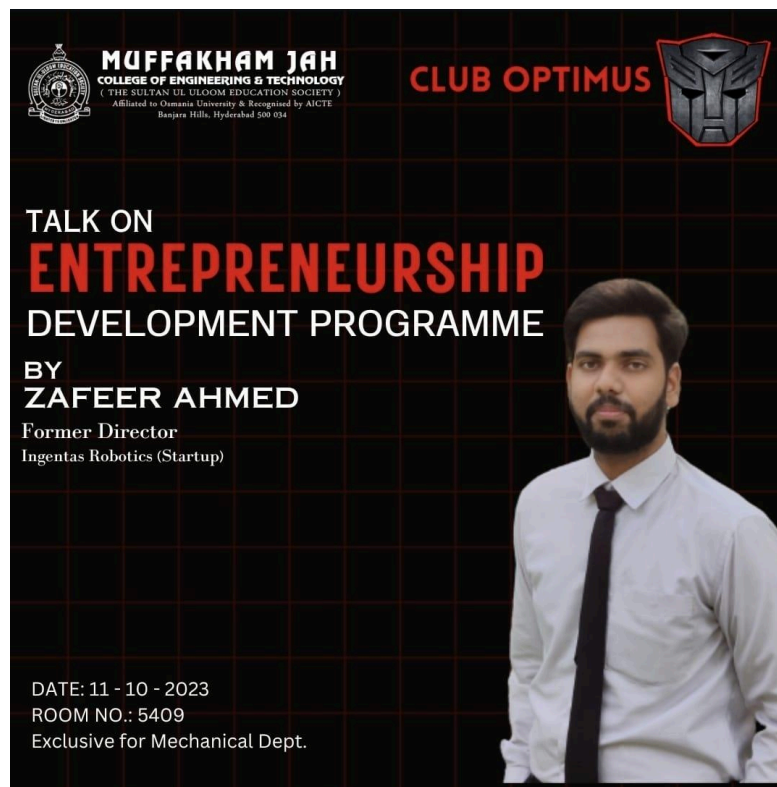
# ENTREPRENEURSHIP DEVELOPMENT PROGRAMME

A Development program was conducted on Entrepreneurship by the Former Director of Ingentas Robotics and our Chairman, Zafeer Ahmed.

The role of Institution Innovation Council was highlighted for fostering a culture of innovation and entrepreneurship on campus. It also provides students with guidance, mentoring and the opportunity to attend various activities, workshops and training program related to innovation and entrepreneurship.

In addition to the above, the IIC promotes collaboration with local startups and industries to facilitate real-world experience for undergraduate students.

The Development Programme was an insightful look into entrepreneurship and the opportunities available to students for pursuing their innovative business ideas in a safe, secure and legal manner.





# GAMEFEST

Club OPTIMUS conducted a multi-game contest for the students of MJCET.

Individual Rulebooks and Moderators were set for the participants for all the games in the event which were held and moderated remotely. The games that were hosted by Optimus were Call of Duty Mobile, BattleGrounds Mobile, VALORANT as well as a Chess Tournament.

Volunteers from the Execom team worked to spectate and maintain opposing teams during matches to prevent exploiting and cheating to gain an unfair advantage. This ensured a free and fair environment where players were able to put their skills, reflexes and techniques to the test against one another.

All registered players had completed their contests within 3 days. This was made possible by the combined efforts of the Execom team as well as the cooperation with the players themselves, in ensuring smooth execution of the event.

No. of Participants : 180

Winners :

Valorant - One For All

BGMI - Lit Brothers

CODM - Team Fenrir

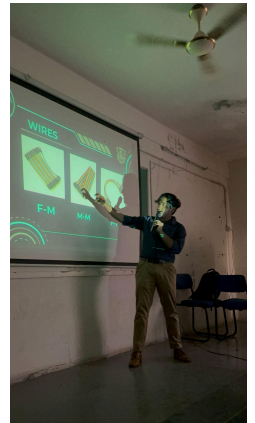
Chess - Abdul Wasey



# ABC'S OF ROBOTICS 2.0

Date : 07/12/2023

Club OPTIMUS conducted a hands-on, foundational workshop on Robotics for the students of MJCET. The panel of speakers selected from the Execom team as well as the Governing Body of Club Optimus talked about the Basics of Robotics in detail, Arduino and its implementation in robotics, Electrical Components such as sensors, motors, and drivers and the process of coding robots. All of this was made possible with a tailored and all-encompassing demonstration using bots made by OPTIMUS for ROBOVEDA, SNIST's Annual Robotics Fest. This event was conducted in one day.



69 participants attended the event. The team at OPTIMUS prepared the hands-on demonstration for all the participants and conducted it safely after numerous preparation cycles. A quiz was conducted at the end of the event and the winners of the quiz were felicitated with prizes.

This event provided students with the ultimate basics to robotics and the opportunities present within the robotics field ranging from healthcare in the ER to precise nanotechnology and beyond.

No. of Participants : 69

Event Poster :



# ROBOVEDA 2023

ROBOVEDA is SNIST's annual technical fest. It is one of the most significant technical events of the year nationwide. This event gives an unmatched all-around experience to the students by allowing them to work and learn about various aspects of robots, movement, navigation and more. It provides a brainstorming beginning for engineering students and school students nationwide in problem solving for real world applications of navigation, transportation and other industrial applications.



OPTIMUS MJCET has participated in the following 6 robotics competitions held in ROBOVEDA.

**Yoddha (Sumo Wrestling) :** Two robots compete to push the other out of the circular arena.

**Sarvaagami -** A multi-terrain track is to be navigated by a vehicular bot successfully.

**Gati -** An obstacle course that is to be navigated by a vehicular bot successfully.

**Goalaa -** A robo-soccer event where two bots face off to score the most goals against each other.

**Lakshmanrekha -** A line-following event where the robot has to successfully navigate multiple distractions and obstacles in the line.

**Jaladhmotra -** An obstacle course on the water surface where a water bot has to navigate around the obstacles within the time limit.



In Yoddha, two heavy-weight robots battled to expel the other from a circular arena. A robust steel frame with wired controls was used to compete against the challenging bot. It utilised slower motors for wheels as speed wasn't a priority in this competition while mobility and stability were.

Sarvaagami and Gati required robots to navigate challenging terrains and obstacles.

Goalaa pitted robots in a first-come-first-serve lineup against each other in a soccer match, while Lakshmanrekha tested the ability of robots to follow a black line amidst distractions. Jaladhmotra presented the challenge of water-based navigation by an aquatic robot controlled by one of the team members.

Yoddha utilised slower motors for its wheels, while Sarvaagami employed a 12.5V battery which was within regulations set for the contest. The Gati event saw multiple bot entries tailored to specific criteria. Goalaa required an additional claw mechanism attached to the basic frame and reinforced with cardboard. Lakshmanrekha incorporated a similar frame as Gati, equipped with an IR follower for line detection.

The Jaladhmotra event necessitated a distinct approach due to the aquatic nature of its obstacle course. The water bot was constructed using styrofoam for buoyancy and employed Bluetooth control. Motor

speed was regulated through a motor driver to navigate the water obstacle course within the allotted time, qualifying for the next round.

Participation in ROBOVEDA has been an enriching experience for the Optimus team. The challenges posed by each competition pushed the team to innovate and problem-solve effectively. The event provided a platform to test the team's technical prowess and strategic thinking. The knowledge gained and the skills honed through this experience will undoubtedly be invaluable in future endeavours. The team looks forward to participating in more such competitions, continuously striving for improvement and excellence.



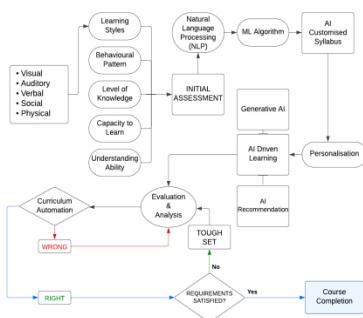


# SIH 2023

Club Optimus' team under the name of HexaHive, participated in the Smart India Hackathon, a nationwide initiative to solve some of the nation's pressing problems. This hackathon inculcates a culture of product innovation and a mindset of problem solving within its participants.

HexaHive worked on the problem of developing an AI-Based training system that designs a course in real-time based on the individual's understanding and learning capacity. It utilises the capabilities of artificial intelligence and machine learning to transform education and training internally within organisations.

At the core of the system is an initial assessment that comprehensively evaluates a user's knowledge, capacity, technical expertise, learning style, and areas of interest. Leveraging AI algorithms, this data is transformed into a detailed user profile, serving as the foundation for personalized training.



The training content is dynamically generated and adjusted in real-time based on the user's progress and performance. By continuously monitoring user interactions, the system selects optimal learning resources, adjusts the pace of learning, and provides timely feedback through quizzes and a dedicated chatbot.

A key strength of the system lies in its ability to cater to diverse learning styles. Whether auditory, visual, verbal, or kinesthetic learners, the platform offers tailored content formats. Additionally, the integration of collaborative learning features promotes knowledge sharing and fosters a supportive learning environment. Users are encouraged to provide feedback on training materials and report any difficulties they may have encountered through an essential feedback mechanism.

## Distinctive Features

**Personalized Learning:** Tailored content, pace, and assessments based on individual needs and abilities.

**Diverse Learning Styles:** Supports auditory, visual, verbal, logical, social, solitary, and kinesthetic learners.

**Adaptive Content:** Dynamically adjusts content difficulty and learning paths based on user performance.

**AI-Powered Support:** Provides intelligent tutoring, feedback, and language options.

**Interactive Learning:** Offers quizzes, flashcards, coding challenges, and collaborative features.

**Data-Driven Insights:** Utilises user data to optimise learning experiences and content delivery.

Our project underwent a rigorous evaluation process involving multiple judging rounds and mentorship



sessions. The iterative feedback received was instrumental in shaping the project's evolution.

Early feedback emphasised the importance of adopting open-source tools and incorporating dynamic elements into the question generation process. While the team considered transitioning to open-source, subsequent discussions led to the decision to retain closed-source tools for specific components.

The final judging round provided a comprehensive assessment of the project's overall progress, with particular emphasis on the successful integration of AI, the project's scalability, and its adherence to the competition's guidelines. The judges' positive evaluation of these aspects validated the team's efforts and demonstrated the project's potential.

The proposed AI-based training system has broad applications across various sectors:

- **Healthcare:** Improved medical training, simulation, and continuous education for healthcare professionals.
- **Corporate:** Enhanced employee onboarding, upskilling, and compliance training, leading to increased productivity and reduced costs.
- **Government:** Upgraded public sector competencies through efficient and effective training programs.
- **Education:** Tailored learning experiences for students, resulting in improved outcomes and reduced dropout rates.

Reflecting on the entire experience, Team HexaHive found it to be immensely rewarding. The competition presented a significant opportunity, and we derived great satisfaction from both the process and the responses received from the judges. Despite the competition outcome not favoring us in terms of platform diversity, it is hoped that the contributions were meaningful within the context of the hackathon as we aimed to positively represent our college, bringing pride to our institution.



# HACKENVISION 2.0



Members from the team of Club Optimus participated in HackEnvision 2.0, A Hackathon hosted by NSAKCET. Team “The Elites”, composed of members from Optimus won the first Prize for Project “Pet Monitoring” using ESP32-CAM microcontroller and various detection sensors paired a user-friendly web interface. Another team of Optimus won the best Innovative Project for “Deepfake Analyzer”.

Other teams of Optimus participated in the hackathon with their projects of “Volume Control via Hand Gesture” and “Student Trail”, an initiative tracker for student-led events.

The winning teams were felicitated with Certificates & cash prizes.

The hackathon provided the numerous teams from Optimus with invaluable insights into problem-solving and teamwork, helping them develop not just winning projects and mindsets but also essential skills for all our future endeavours as well-accomplished and driven engineers.

The guidance and motivation from the seniors at Optimus as well as the Hackathon organisers was instrumental in driving our teams to completion and successes in the competition.



# ROBOTEC-2K24

ROBOTEC – 2K24 was a prestigious state-level robotics competition hosted at MLRIT, drawing in some of the most innovative robotics enthusiasts from across the state. This grand event saw participation from numerous colleges and institutes, all eager to showcase their skills and ingenuity in the field of robotics. Among the participants were members of Club Optimus, who took on the challenge with great enthusiasm and determination. Club Optimus entered three highly competitive contests: Robo Sumo, Robosoccer, and the Robo Race, each requiring distinct skill sets and strategic planning.



The Robo Sumo contest was an intense and electrifying event where robots were pitted against each other in a battle of strength and design. This competition tested the engineering and programming skills of the participants. The members of Optimus showcased their mechanical prowess and strategic acumen, earning respect and admiration from their peers and competitors alike.

In the Robosoccer contest, teams designed and controlled robots to play soccer. This contest was a display of technological innovation, as each robot seamlessly integrated movement and decision-making to outplay the opposing teams. The Optimus team displayed their well-coordinated bot as well as their strategic play.

The Robo Race required robots to navigate through a course filled with various obstacles as quickly and efficiently as possible. This contest tested the programming and sensory capabilities of the robots, as well as the precision and foresight of their creators. The members of Optimus tackled this event by optimising their bots' navigation algorithm.

Competing against other colleges and institutes in this rigorous and demanding race was a refreshing and invaluable experience for the team.

Team Participants : 6



# TALAASH

Date : 13/06/2024

Club OPTIMUS conducted a technical event Talaash for the students of MJCET. It consisted of 4 rounds, those being identification of robotic parts, bot classification, assembling of robots as well as robot soccer.



The primary aim of Talaash was to foster a deep technical knowledge of robot anatomy, critical thinking, and problem-solving skills among the participants. The event was meticulously planned and executed in a single day, making it a compact yet comprehensive challenge for all involved.



Out of the 36 registered teams, only 2 teams successfully cleared all the rounds, demonstrating exceptional skill as they navigated through the elimination-style rounds against their competition. The team at OPTIMUS worked tirelessly to prepare the event, ensuring fairness, accessibility, and an engaging experience for all participants.

The winners were rewarded with a treasure box of goodies, a token of appreciation for their hard work and a testament to their technical prowess and innovative thinking.

Event Poster :



# MJCET Daily

# TALAASH

## THE CAMPUS OF SECRETS

EMBRACE THE JOURNEY, TRUST YOUR ABILITIES.

ROUND 1  
Uncover the secret word

ROUND 2  
Assassination Conundrum

ROUND 3  
Scavenger hunt

ROUND 4  
??!!##@#!??



EVERY STEP FORWARD LEADS TO DANGER, TAKE CAUTION.

In the shadows of the campus, an otherworldly being roams, questing for a long-lost treasure concealed within its grounds. The enigmatic entity, a harbinger of mystery and peril, has scattered cryptic clues, guiding intrepid souls towards the coveted prize. Can you unravel the mystery and claim the hidden treasure before the malevolent force closes in on you?

TIME-  
2:00-5:00  
DATE-  
13.06.2024

\* VENUE-  
STUDENT ACTIVITY  
CENTRE -1409 \*

REGISTRATION FEE-  
199/- PER TEAM

CONTACT: RAFAE- 6309348701 ABRAR-7842483580

# TEAM

OPTIMUS TEAM LIST 2024

GOVERNING BODY			
Serial No.	Name	Portfolio	Branch
1	Shaik Muzammil Adnan	Chairman	MECH
2	Zafeer Ahmed Qadeer	Chairman	MECH
3	Hafsa Akhtar	Chief Representative	CSE
4	Ayesha Ibrahim	Secretary	CSE
5	Adnan Ahmed	Advisor	EEE
6	Mohammed Rafaeuddin Siddiqui	Joint Secretary	CS&AI
7	Masiullah	Treasurer	CS&AI
EXECOM			
1	Mohammed Abdul Hadi	Design	CSE
2	Ali Mohammed Lalani	Design	CS&AI
3	Isra Sayeeda	Design	IT
4	Ahmed Hakeem Al Kareem	Documentation	CSE
5	Shafia Sheerin	Documentation	EEE
6	Mariam Shakeel Ali	Events	IT
7	Muhammed Jawad Khan	Events	MECH
8	Saif Samad	Events	CS&AI
9	Mohammed Amaan Mahmood Khan	HR	CSE
10	Mohammed Abrar Akram Farooque	HR	CSE
11	Shaik Seema Nasreen	HR	CS&AI
12	Abdus Sattar Haadi	Marketing	EEE
13	Aboo Bakr Muhammad	Marketing	CS&AI
14	Farhan	Marketing	CS&AI
15	Mohd Abdur Raheem	Marketing	CSE
16	Mohd Faiz Ali	Marketing	EEE
17	Sabahat Khan Shoukath	Marketing	MECH
18	Huzaif	Operations	CS&AI
19	Mohammed Rayyan Ali	Operations	IT
20	Mirza Farhan Baig	Social Media	ECE
21	Noor Asad	Social Media	EEE
22	Shanawaz Shareef	Social Media	CS&AI
23	Syed Aqeeb Talib	Social Media	CSE
24	Abdullah Hafeez Qureshi	Technical	EEE

25	Azreen Sultana	Technical	ECE
26	Mohammed Imran Ahmed Yousuf	Technical	EEE
27	Mohammad Sakhib Nawab	Technical	ECE
28	Mohammed Mujahid	Technical	CS&AI
29	Mohammed Zaid	Technical	CS&AI
30	Syed Kaifuddin	Technical	CS&AI
31	Syeda Huda	Technical	CS&AI
32	Shaik Mohammed Ayoub	Technical	CS&AI
33	Syed Imran	Technical	CSE
34	Shaik Mohammed Ismail	Technical	CSE
35	Muhammad Affan Asif	Technical	CSE
36	Mohammed Mujahid	Technical	CS&AI
37	Tanveer Aamina	Technical	CS&AI
38	Arnav Jaiswal	Technical	CSE