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T *Techfest* 2022

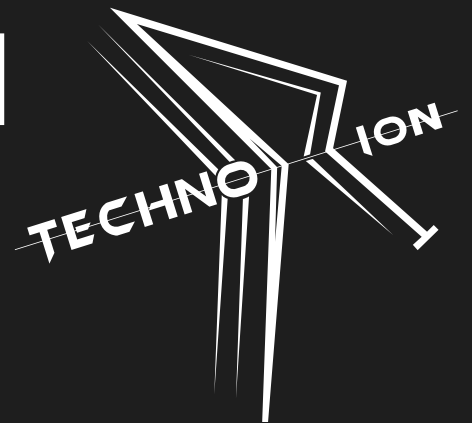


Advanced Robotics Club

' Together We Learn '

TECHNORION

November 12th 2022



Information Booklet

Techfest IIT Bombay - Technorion (International Zonal Qualifiers) NEPAL

TECHFEST

Indian Institute of Technology, Bombay is one of the premier institutes in the field of science and technology in the world. Techfest, a non-profit student organization of IIT Bombay has been organizing its annual science and technology festival. From a fledgling event in 1998, today it has grown to be the largest festival of its kind in Asia. Techfest enjoys enormous participation of about 1,75,000 students from over 2500 colleges across India and 500 international colleges and over 7,000 faculty members and corporate executives. In 2004, Techfest took the bold step of going international and has since then received enthusiastic response from all over the world with entries from Indonesia, Australia, South Africa, Bangladesh, Egypt, Sweden, France, Ethiopia, Iran, Nepal, Russia, Pakistan, Singapore, Sri Lanka, Thailand, United Arab Emirates and the United States of America since then. In its twenty-sixth edition in 2022, Techfest will be held at IIT Bombay, India.

TECHNORION

With an aim to promote creative, innovative and technical skills amongst the youth, Techfest is expanding its reach by conducting Techfest Technorion. Techfest Technorion is a zonal competition that is held in multiple cities, and it serves as a qualifier round for the finale that will take place at Indian Institute of Technology, Bombay. Technorion Nepal is the zonal competition of Techfest that is being conducted in Nepal by Advanced Robotics Club (ARC). This event serves as the zonal competition of Techfest (for select events) for students in Nepal, and is the ONLY route to the finale being held at IIT Bombay. The first edition of Technorion in Nepal was conducted back in 2019 by ARC. The event is scheduled for **November 12th, 2022** featuring four competitions, namely **Cozmo Clench, Meshmerize, CoDecode and Techfest Olympiad**. Winners of the competition will be eligible to participate in the Techfest finale that is scheduled to take place from the **16th to 18th December at IIT, Bombay**.

ABOUT US

Advanced Robotics Club (ARC) is an organization within Advanced College of Engineering and Management which aims to provide a platform to harness the growth and development of engineering students. Since our inception in 2012, we have been home to many robotics enthusiasts and innovators, thus successfully inspiring students to become the brightest minds in the Engineering and Robotics community across the nation today.

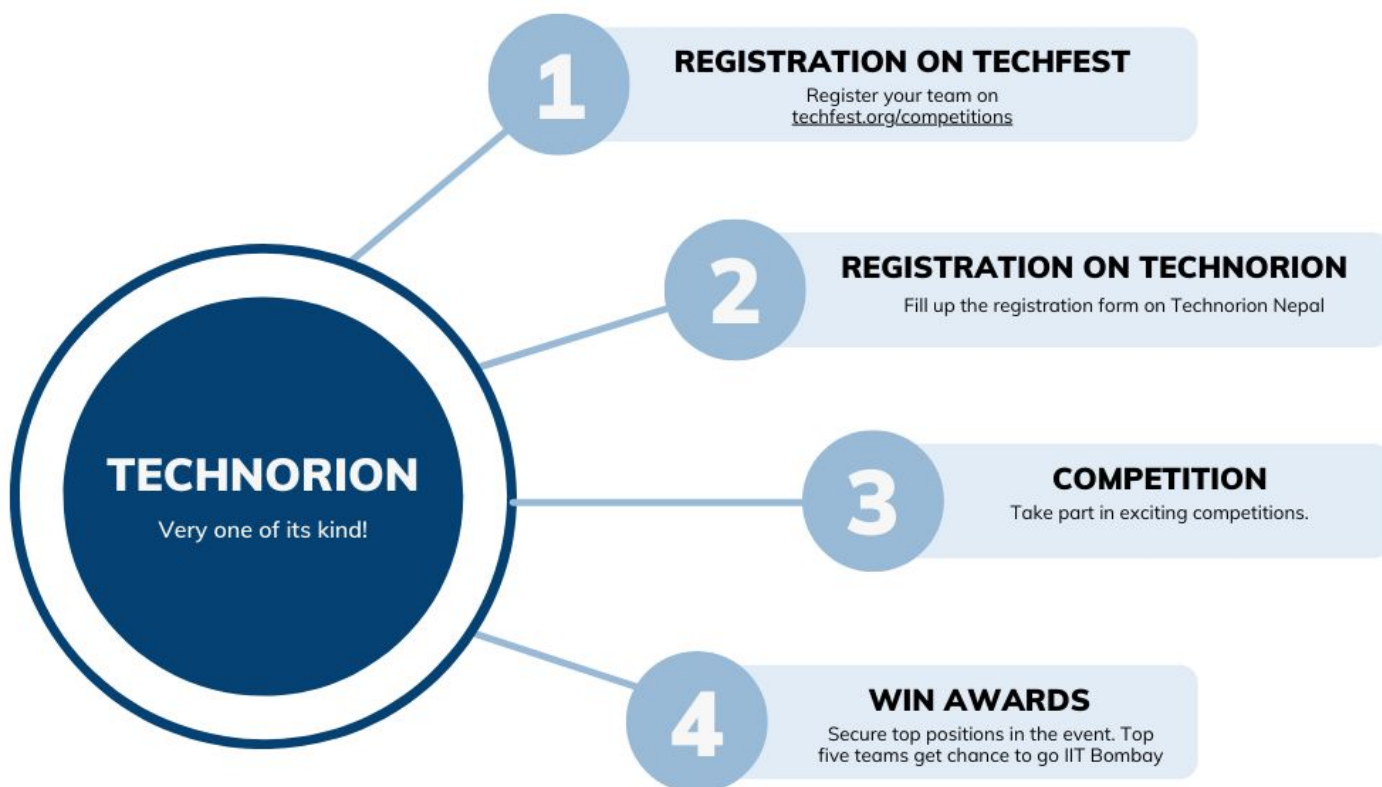
We are committed towards providing a platform for young innovators to develop ideas and implement them. Boasting numerous accolades from various national and international competitions, ARC continues to grow as one of the best student clubs in the robotics community of Nepal.

ARC has been organizing various training sessions and seminars on not just robotics, but in other disciplines as well. With events like workshops on AVR programming, PCB Designing, Training on Soldering, PythonBytes (a training on the basics of Python), and a joint collaboration titled 'Together we Learn', including Presentation Workshop, Web Designing and Teaching Machines to think (an introductory session on Machine Learning), ARC has time and again manifested as well as associated the enthusiastic minds of robotics with real field experience. Through these kinds of Trainings and Workshops, ARC has fostered many astute technical minds to supplement progress in their field of Robotics.

In recent years, ARC has also developed a pamphlet distributing robot named "Qarisma" which applies face recognition technology. The purpose of this robot is to distribute pamphlets to any visitors passing by and greet them with a sweet gesture. This Robot was even featured in the top Social Media pages of Nepal.

REGISTRATION FOR TECHNORION NEPAL

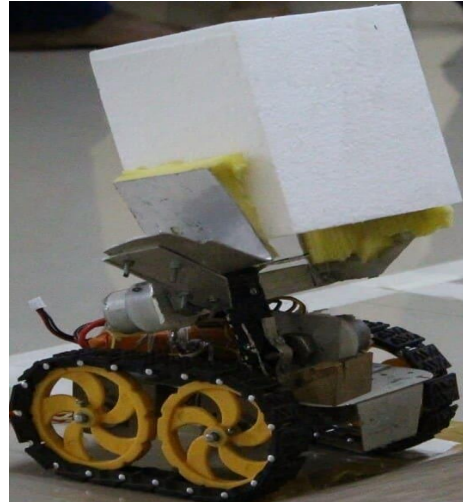
The registration process of every competition follows the same given format:



Further information about each competitions are available in detail in respective pages.

COZMO CLENCH

The participating teams must build a manually controlled gripper bot (wired or wireless) which can grip objects and put them in target zones while overcoming the hurdles in the path with minimum time.



Top 5 teams will qualify for the Grand Finale that will be held during Techfest 2022-23 (Only if they score higher than the minimum cut-off score).

- The competition will be both time as well as points based (for more details please visit the Techfest website).
- The dimensions of bot must be less than or equal to 300 mm X 200 mm X 300 mm (l x b x h) but can extend its dimensions once the run starts. (error $\pm 5\%$ is permitted.)
- The mechanism used should be such that only one person will control the bot.
- Participants are not allowed to use any readymade components (Lego components, gripping mechanism and any kind of gear assemblies).

Registration

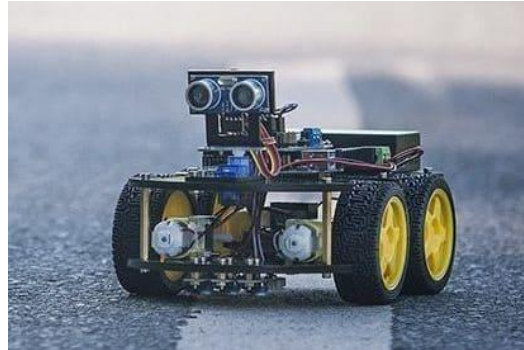
Participants MUST first fill the form available on Techfest's official website before filling the form for Technorion:

1. Cozmo Clench | Techfest
<https://techfest.org/competitions/cozmo/registration>
2. Cozmo Clench | Technorion
[Registration link](#)

For further details about game rules and bot specifications visit the linked document: <https://techfest.org/competitions/cozmo>

MESHMERIZE

The participating teams have to build an autonomous robot which can follow a white line and keep track of directions while going through the maze. Each team shall have a maximum of 4 members. The competition will be held in two parts i.e the dry race and the actual race. The bot has to analyze the path in the dry run and has to go through the maze from the starting point to the ending point in minimum possible time.



The competition consists of two parts:

1. The first part is the “Dry Run.” In this run, the bot must start from the ‘Start’ and find its way to reach the ‘End’ of the arena. The bot has to give a signal by glowing a LED as soon as it senses the white box below it at the end. The bot has to follow an algorithm to find its path to reach ‘End’ and the bot can store the turns in its memory to explore the shortest path during the second part of the journey. There are no restrictions to cover all the checkpoints.
2. The second part is the “Actual Run.” The timer will be set to zero as the “Actual Run” begins. In this run, the bot has to restart from the ‘Start’ again and finds its way to the ‘End’ through the best possible path by following the path that was stored in the first run. The ‘End Zone’ has a white box of (l*b) that indicates the end of the path for the bot.
3. A total of 3 minutes will be provided to complete the dry run.

4. A total of 2 minutes and 30 seconds will be provided to complete the actual run. If the bot takes more than 3 minutes to complete the dry run, then the extra time taken will be deducted from the timing of the actual run, which is 2 minutes and 30 seconds.

Registration

Participants MUST first fill the form available on Techfest's official website before filling the form for Technorion:

1. Meshmerize | Techfest

<https://techfest.org/competitions/meshmerize/registration>

2. Meshmerize | Technorion

[Registration link](#)

For further details about game rules and bot specifications visit the linked document:

<https://techfest.org/competitions/meshmerize>

CoDecode

The participating teams are required to unravel real-life issues through coding. Participants should tackle the most significant conceivable questions in indicated time interim in the most proficient way. The programming aptitudes of members would be tested in this competition. All students with a valid identity card from their respective educational institutes are eligible to participate in the event.



1. It is a 3-hour coding contest.
2. Teams will use coding to solve extremely tricky mathematical problems that can't be solved by using a calculator.
3. Problems will revolve around mathematical intricacies, statistical predictions, physics, seepage, real-life scenarios, and much more.

Registration

Participants MUST first fill the form available on Techfest's official website before filling the form for Technorion:

1. CoDecode | Techfest
<https://techfest.org/competitions/codecode/registration>
2. CoDecode | Technorion
[Registration link](#)

For further details about game rules and bot specifications visit the linked document:

<https://techfest.org/competitions/codecode>

TECHFEST OLYMPIAD

Techfest Olympiad presents students with a platform to develop and showcase their scientific and practical life problem-solving skills. All participants have to solve the maximum number of questions in a specified time interval to compete with the brightest minds of the country. The competition provides the participants with real-life problems which they have to solve through their practical knowledge and mental aptitude. Critical thinking and pressure handling skills will be tested.



***** Only Standard 8th, 9th, and 10th students are eligible to participate. *****

Registration

Participants MUST first fill the form available on Techfest's official website before filling the form for Technorion:

1. Techfest Olympiad | Techfest
<https://techfest.org/competitions/olympiad/registration>
2. Techfest Olympiad | Technorion
[Registration link](#)

For further details about game rules and bot specifications visit the linked document:

<https://techfest.org/competitions/olympiad>

PRIVILEGES

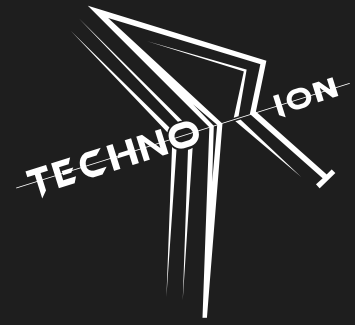
- Winners of all competitions get a chance to compete at IIT Techfest from 16 to 18 December, against students from all over the world.
- *RECOGNITION* - A certificate of participation to all participants, provided by Advanced Robotics Club.
- Get to *COMPETE* with the best minds throughout the nation.
- Foster a sense of *TEAMWORK*.
- *NETWORK* - you get a chance to meet incredible talents from across the country.
- *EXPOSURE* - Get a chance to showcase your talents to students and other individuals.
- Advanced Robotics Club (ARC) will bear the cost of fooding for the day of the event (November 12).
- ARC will cover the costs of accommodation (for 2N1D) for students traveling from outside the valley.

NOTE : Travel fees will NOT be covered by ARC.

RULES

- Participation deadline for Technorion is November 1, 2022. Registrations will NOT be entertained after the deadline.
- The referees' decision during the competitions will be final.
- Participants must not exceed the time limit allocated to them.
- Participants must currently be enrolled in a Bachelors program or below to participate in Technorion Nepal.
- Participants should inform the organizing committee in case of any issues.
- Use of vulgar language is strictly prohibited.
- All participants must cooperate with the volunteers.
- All participants must strictly follow the rules of the competition.

**** RULES ARE SUBJECT TO CHANGE. ANY CHANGES IN RULES WILL BE NOTIFIED TO THE PARTICIPANTS ****



' Together We Learn '

Find more detailed info about IIT techfest at : techfest.org

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