

TechTatva '19–Mechatron

Robopong

Mehr Chawla | Staff Writer

Organised by Mechatron on the first two days of TechTatva, the event was a twist to an all-time favourite party game.

Participants had to use a catapult attached to a robotic arm to hit ping pong balls into cups within the six chances they were given. The seemingly simple game increased with complexity—to earn points, no two balls could fall into the same cup twice. Bots were easy to control as participants manoeuvred the arm through three buttons—one to set the angle, the second to release the catapult and the third to reset previously made combinations.



Round one came with quite a few challenges. While the event started off smoothly, a minor complication in the reset button

of the robot turned the expected automatic event into a semi-manual one. Organisers had to frequently intervene to fix the bot and teams were encouraged to retry the round to improve their scores. However, since the average of the scores were taken, teams were at risk of being placed at the bottom of the leader-board. *"It's funny. There was no technical aspect to it. It was all based on luck"* mentioned Uday Kota, a participant. Six teams made it to the second round. While the rules of the competition remained the same, participants fiercely competed against each other, creating an intense atmosphere.

There were sparks in the air as participants worked hard to earn their spot on the top of the charts. While the event had a few setbacks, the contestants and spectators alike thoroughly enjoyed the competition. Overall, the event was appreciated and met the goals it set out to achieve.

Operation Shutout

Deev Sethiya | **Staff Writer**

Held on the second and third day of TechTatva, Operation Shutout had participants apply the knowledge they gained from attending workshops held prior to the competition. Inspired by the rules of laser tag, the two-day event saw participants compete as their DIY Arduino bots discharged lasers with the hopes of getting higher up the scoreboard.

The seemingly straightforward event was accompanied by rigid rules—participants had to adhere to a maximum bot size of 30x30x14cm while the laser attached had to be placed at a height of 11cm from the ground. For every successful strike in each of the two rounds, a bot received one point. Robots could defend themselves from an attack by taking shelter under the several obstacles laid out in the arena. Each round had a time limit of six minutes.



To provide competitors with some leeway, participants were allowed to signal for a 'Pit Stop', after which they could service their bots. The only adjustments allowed were wheel changes, the reattachment of fallen parts, and a change of exhausted batteries. Service time was limited to a maximum of two minutes. Competitors could only service their bots once, after which they were penalized for every additional Pit Stop through a single point reduction. Competitors were disqualified if their robots failed to respond for more than three and a half minutes. In the rare instance of a tie, the 'Sudden Death Mode' would be activated. Here, the bot that scored the first point would win the round. *"The performance of the bots were good but one of the student's bots was eliminated in the first round. As a result, only two were there in the knockout round,"* stated Ankit Kumar, the Event Head.

The event saw a small group of contestants and lacked outstation participation. Despite the lack of competitors, the event ran without any hiccups owing to the efforts put in by the organisers and core committee members.

Chakravyuh

Royston Fernandes | **Staff Writer**

Held on the second day of TechTatva, the quizzing event stayed true to its name, providing participants with an opportunity to prove their superior knowledge of mechatronics. Six teams competed as they made their way through the labyrinth of questions while battling against a ticking clock. *"The beauty of this multi-disciplinary event was that it's open to both the first and the fourth years since not many pre-requisites are required,"* remarked Navya Shetty, the Event Head.

The competition had a single round and included five different tracks. Participants were free to pick any track, each of which contained a portal of five questions. The questions were stored in locked PDFs. The round was analogous to online video

games, with the first question in each track unlocked. However, subsequent questions were locked with a password that could only be obtained from the answer of the previous question.

The logic-based questions challenged participants in a wide range of mechatronic domains. While the quiz seemed a little bland at first, the sheer excitement that came with unlocking PDFs upon uncovering the solution to the previous problems sparked enthusiasm among the competitors. Excitement peaked when participants had the opportunity to unlock bonus questions by concatenating answers from the last question of each track. Adithya Padhy, a first-year student from MIT stated, *"The questions were slightly tough but nothing a little Physics and Basic Electronics student couldn't solve."*

The uniquely designed challenge gave an interesting twist to a sombre quiz. The event had a moderately sized crowd that displayed a keen interest. The event was well planned and organised, resulting in a successful evening.

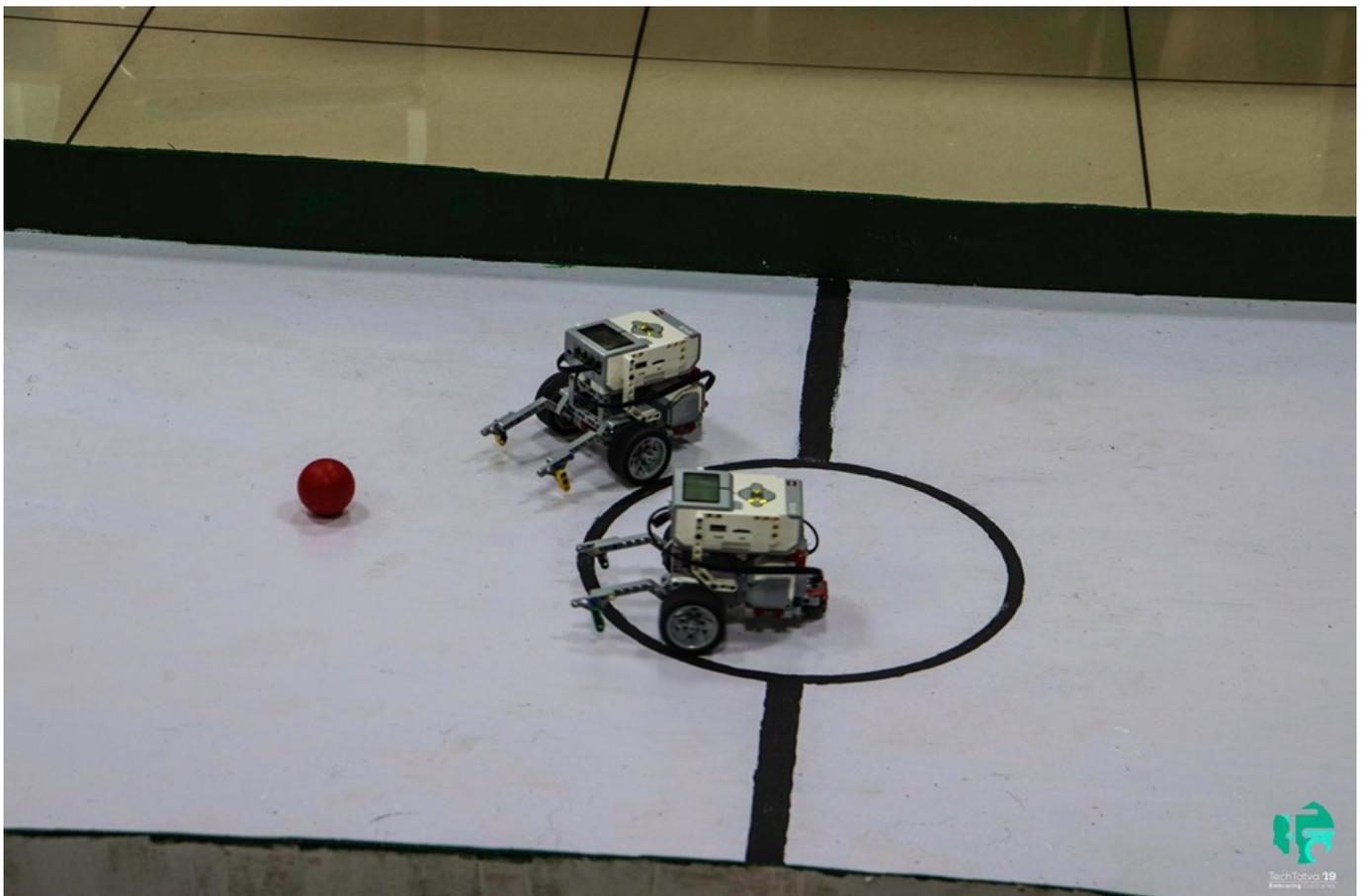
KickOff

Devangshi Debraj | **Staff Writer**

KickOff commenced with excitement as all eyes were trained on two tiny robots that battled for dominance on a cardboard football field. Held on day two and three of TechTatva, participants were pitted against each other in a riveting game of robosoccer as their bots guided a plastic ball into the goal box.

Participants were provided with robots to ease the effort of participation. Each round lasted for a span of two minutes, with competitors switching bots every sixty seconds. Spectators were driven to laughter as the ball frequently rolled away from the robots' outstretched arms. Often, after a series of spins and defensive manoeuvres, it took the bots a mere five seconds to deliver the ball to the goal.

As the winning participants of the first round entered the finals, they gave up all semblance of playing soccer, abandoning the ball to wrestle instead. The time duration increased to four minutes per match and required participants to switch lots every thirty seconds. A comical scene ensued as the robots seemingly embraced, only to knock each other down. The final match lasted longer than usual as both participants strove to prove their mettle, ending each round in a tie. It was an exciting end as the winning goal turned out to be a smooth drive to the finish. *"It was an exciting event. I had expected it to be tough, which it was, yet I had a lot of fun. The judging was fair. If I could change one thing, it would be to allow participants to make changes to the bots,"* said the winner, Shivam. A., a second-year student of MIT, sharing his thoughts on the competition,



"We had a surprisingly good turnout. There were absolutely no hiccups, and the event is running smoothly and on time. The participants do not have to worry about the technicalities of

the robots' working—this saves a lot of time” remarked Core Committee member, Abhinav. The excited crowd kept the atmosphere of the room alive as participants competed while battling against a ticking clock. Overall, the event was very well organized and left the audience wanting more.

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