

FASTEST LINE FOLLOWER

Team to build own autonomous robot within the specified dimensions to achieve the maximum speed on the given track and reach the destination in minimum time. The robot must start behind the starting point and is considered to have crossed the finishing line if any part of the robot crosses it in a full lap of the course. The robot must follow the black line. The competition area has a special place defined for the robot's operation (here after COMPETITION FIELD).

- **200 Teams** to participate in the Fastest Line Follower challenge.
- All participants will get a certification of Participation from **All India Council For Robotics & Automation (AICRA)**.
- **INR 100,000** to be awarded to winning teams.
- **Eligibility Criteria:** Entry is open for all age groups below 30 years.

How to get on FLF

A match is played by a **single team** in one go, with each team consisting of 1 **Wireless/ autonomous Bot**. An individual may participate or construct a team of a minimum of **2** and a maximum of **10** members. Any institution (School/College/University/Vocational Institution) or group of students (within defined age), may form a team.

- **STEP 1:** Register your RoboClub or Institute as TechnoXian RoboClub online at official TechnoXian website. If you do not have Club or Institute, you may form a new TX RoboClub by introducing minimum 5 members. Registered individual TechnoXian member can also participate in RoboRace challenge.
- **STEP 2:** Once your FLF Club is active, you may select **Fastest Line Follower Challenge** category from the competition list in your login panel, and apply. You will also be needed to select members from your club who would participate in challenge. Maximum 10 members in 1 team can participate. A club can apply multiple teams for the same challenge.
- **STEP 3:** Construct a wireless autonomous or manual Bot. Ready-made bots will not be allowed to compete. Only self-made or TechnoXian listed DIY kits can be used to make bot.
- **STEP 4:** Prepare a **video** of **1** minute to **5** minutes (maximum 100 MB), showcasing team readiness, creativity, preparing for challenges, or anything to show passion to participate in TechnoXian. Share the video either on email at **videosubmission@technoxian.in** (as google drive or V transfer) or **WhatsApp** at **+91 8924934336** mentioning Your Team Registration ID. All videos will be uploaded on TechnoXian YouTube channel.
- **STEP 5:** Receive an Invitation Letter from TechnoXian to participate in particular challenge.

FLF BOT

The participating bots must be wireless and autonomus. It can be circular / Rectangular in style. Bot must fit inside a box of **20 centimeters length, 20 centimeters wide and 20 centimeters height** at any point in time. Maximum weight should not be more than **5Kgs** including battery, however, a tolerance of **5%** in weight is acceptable. Participants need to ensure:

- Batteries must be sealed, immobilized electrolyte type (gel cell, lithium, NiCad, or dry cells).
 - The electric voltage anywhere in the machine should not be more than 16.8V DC at any point in time foreach robot.
 - Infrared light-reflecting materials must not be used on the outside. If robots are painted, they must be painted matte. Minor parts that reflect infrared light could be used only if other robots are not affected. Robots must not produce magnetic interference for other robots on the field.
 - If a team claims that their robot is affected by the other team's robot in any way they must show proof/evidence of the interference. Any interference must be confirmed by a Referee if a claim is placed bythe other team.
 - The robot must be autonomous.
 - Robots must be constructed and programmed in a way that their movement is not limited to only onedirection and must move in all directions.
- No wireless communication between bot and operator will be Any robotic parts/building material can be used until the robot meets the above specifications and if the design and construction are primarily the original work of the team as ready-made robots are not allowed tocompete in the competition.

FLF RACING TRACK

The Racing track of the Fastest Line Follower challenge has a track of a total length of **180 – 200 ft** (approximately)on an arena dimension of **24X24 SqF**. The width of the black line will be **25mm**. The surface of the track will be white with a black line marked on it. The track may contain crossed, curved, or discontinuous black lines.

FLF GAME PLAY

Start and Restarts:

- The robot will be placed at the starting point with the consent of the referee.
- Bot may restart the run if the person handling it feels the necessity. A restart can be requested only if the robot doesn't follow the line, has stopped halfway, or has lost the directions/Black line.
- At any restart, the robot must be re-positioned back at the start point.
- It is not allowed to reprogram the robot or to add/remove parts on the robot during the run, but adjusting the sensors is permissible with the consent of the referee.

- The RACE CLOCK/RUN TIME will reset to zero on every restart. The COMPETITION CLOCK(maximum access time) will keep running during all restarts.
- Only 3 restarts are allowed for each round. A robot must restart if bot does not start after pressing the StartButton for 30 Second, bot is touched by a human without the consent of the referee, bot moves out of the arena or the referee orders to restart.

There will be two rounds in Fastest Line Follower gameplay i.e. **Elimination round** and a **Final round**

Elimination Round:

- Every team will be given 1 minute time to calibrate the bot and maximum 3 minutes for game play. 1 minute of calibration time will not be included in gameplay time.
- If Bot loses the track, bot operator can touch bot maximum 3 times during the overall gameplay in all trials.
- Within 3 minutes of gameplay duration, team will get maximum 3 trials. Minimum time will be considered in all 3 trials.
- Maximum 30 teams would be qualified who reach to finish line in minimum time duration.

Final Round:

- Qualified teams will compete in this round to achieve the minimum runtime. A single run will be conducted for each qualified team. Teams with the minimum runtime will be nominated as the winner of the competition.
- Team would be given 1 minute for calibration and maximum 5 minutes for gameplay.
- If Bot loses the track, bot operator can touch bot maximum 3 times during the overall gameplay in all trials.
- Within 5 minutes of gameplay duration, team will get maximum 3 trials. Minimum time will be considered in all 3 trials.