Eligibility

- HKUST members – full-time and part-time students, faculty, staff and alumni
- Registration as individual or team (up to 4 persons). Individuals can also join and will be teamed up after admission.
  - All member MUST attend the competition.
  - Each team should allocate time for RC-car trainings (min. 10 hours on-track training of the car plus coding time) in January and February 2021.
- Each team should have one laptop to work with the RC-car.
  - The laptop should have Win10 to flash the operating system for the car. A virtual machine of Win10 should be installed if Mac is used.
  - An Ubuntu 18.04 system should be installed to the laptop.
  - The laptop is recommended to have an Nvidia Graphic GPU Card, otherwise, the model will be trained very slowly using CPU only.
Autonomous RC-Cars

- Only standardized autonomous RC-car (JetRacer AI Kit) provided by the organizer can be used in the race. Modifications to the RC-car are not allowed.
- The RC-car should run autonomously on the track. No gamepad or other intervention is allowed during the race; otherwise, the car will be disqualified.
- Only on-board computing is allowed (on the Nvidia Jetson Nano mainboard).
- There are no rules governing how to implement the driving algorithm and code.
There will be two kinds of obstacles fixed on the track (with scotch tape): cones and circular truncated cones. Their colors are random. Touching these obstacles will lower the speed of RC-cars. The car may also completely get stuck at the obstacle and reset operation will then be needed.
Qualifying Session

- To determine the top eight cars and the starting position for the Main Race.
- Maximum 25 RC-cars will compete in the qualifying sessions.
- Each car will be running solely on the track for ONE lap in each session and time will be recorded with an electronic timer system.
- The fastest lap time will be counted to determine the ranking.

Track setup: The track setup will be the same for each team. 4 obstacles will be placed on the track throughout the Qualifying Session.
Main Race
The Main Race is conducted in knock-out format with 3 rounds. The level of obstacles is harder by each round. All races in this phase will be “wheel-to-wheel” with two cars on the track at the same time, running on the track for SIX continuous laps. The pairings will be decided using drawing lots. The car with higher ranking occupies the 'pole position', a position in the inside lane.

Quarterfinal round: PK1-PK4 (Track setup: 4 obstacles)
Semifinal round: PK5-PK6 (Track setup: 6 obstacles)
Final round: PK7 (Track setup: 8 obstacles)
Here is an example for the schedule arrangement of the Main Race, where the number in the box indicates the ranking of qualifying:

RC-car with ‘pole position’
Rules and regulation

- Reset operation imposes a 2-second penalty. For example, if the car gets stuck on a corner or turns over, the judge needs to reset the car to the track. If two cars hit together and got stuck, both teams will be imposed a 2-second penalty after reset.
- Car damaging (crashing on the fence in high speed may lead to wheel damage) is immediate disqualified for that race.
- The judge is the final decision maker.
Awards

1st Place - HKD 10,000
2nd Place - HKD 5,000
3rd Place - HKD 2,500, (2 teams)

All teams can own their RC-car upon completion of the whole competition.