NXP PRESENTS

AIM ARTIFICIAL INTELLIGENCE in MOBILITY

Season 2.0

SMART CAR RACE CHALLENGE

QUALIFICATION ROUND SUBMISSION DETAILS

IN COLLABORATION WITH

Time Of Sports®

Submission Details

NEW SUBMISSION DEADLINE (DATE & TIME):

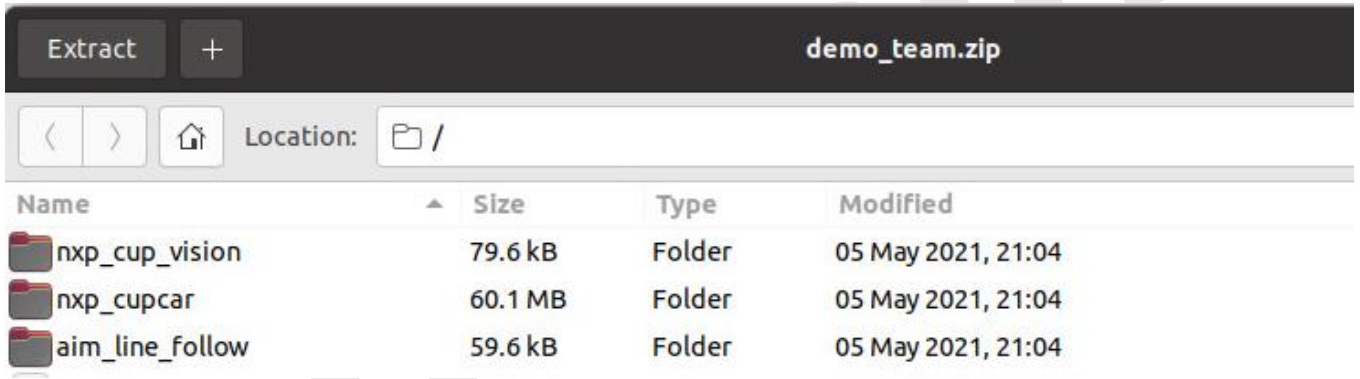
13th JULY 2022;
11:59 PM

Submission Details

SW Folder : upload the zipped file. File name will be **Teamname.zip**
(MAX SIZE: 100MB)

Following three sub-folders must be included in the zip folders:

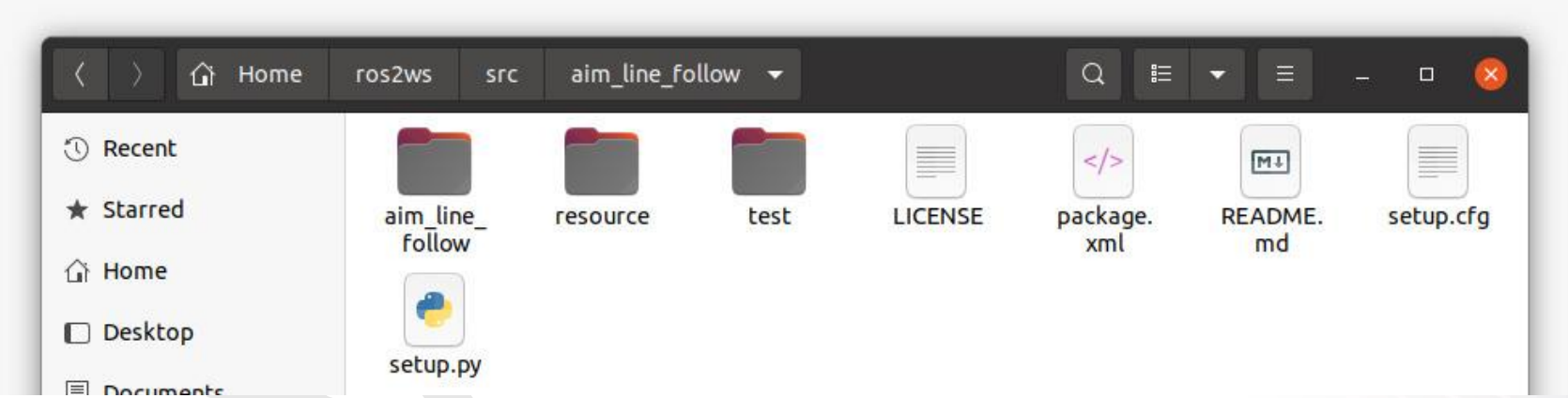
- ~/ros2ws/src/aim_line_follow
- ~/ros2ws/src/nxp_cup_vision
- ~/ros2ws/nxp_gazebo/models/nxp_cupcar
- Project Report



IMPORTANT NOTE:
ONLY 1st SUBMISSION WILL BE CONSIDERED

Submission Details: Additional files

If teams have created additional files such as extra python scripts, machine learning models, etc. that support self-driving algorithm must be stored in ***~/ros2ws/src/aim_line_follow or ~/ros2ws/src/nxp_cup_vision*** sub-folders only.



Calling of all these files must be properly specified at the time of use

Technical Document Format : Project Report : 3 Pager

NXP AIM : ONLINE DESIGN CHALLENGE

Team Name:

S. No	Team Members Name	College/Location	Branch	Current Semester

NXP AIM CAR MODEL PICS

/* Participating team must include photos of their NXP AIM car, clearly showing all the appearance, i.e. addition of College Logo, Team Logo, NXP AIM logo, India's Flag etc. along with new sensor attached to the car (if any) */

Technical Document Format : Project Report : 3 Pager

Architecture Details

/* Participants are required to explain their methodology used to solve the given problem and provide an insight of the techniques used. (WORD LIMIT: 200-300 words) */

Algorithm Used & Any other Architecture Information

/* Participants are required to give a brief summary of what algorithm / logic they have used to successfully complete the given challenge. Also, a short note on what all additional changes have been made to increase the speed of CAR model (and where) in the setup provided. (WORD LIMIT: 750 Max) */

IMPORTANT GUIDELINES

- All teams must strictly follow all the details provided in this session.
- The zip folder to be submitted must have the same structure and contents as told
- Proper storing conventions and definitions for loading new meshes and plugins for nxp_cupcar must be followed strictly
- Participants must update their software tree with all new changes and updates that will be provided via the NXP AIM Gitbook
- If using any external libraries, please use the latest versions. (A list of all valid supported versions for majority of libraries will be posted on Gitbook soon)

At least one member of each team should be active on discord server for contact

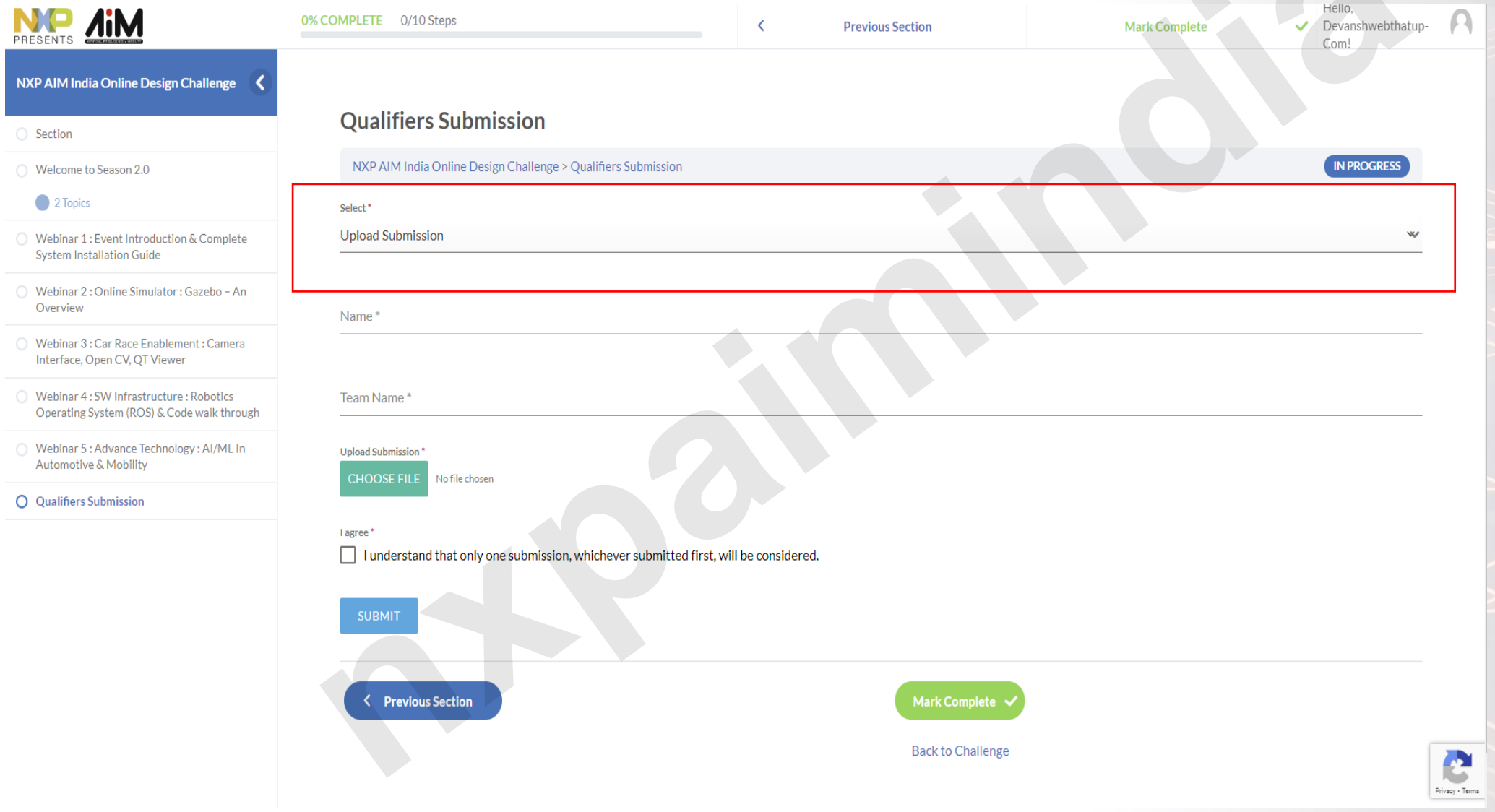
ONLINE SUBMISSION PROCESS

Challenge Content

Expand All

- Section
- Welcome to Season 2.0
  2 Topics — Expand
- Webinar 1 : Event Introduction & Complete System Installation Guide
- Webinar 2 : Online Simulator : Gazebo – An Overview
- Webinar 3 : Car Race Enablement : Camera Interface, Open CV, QT Viewer
- Webinar 4 : SW Infrastructure : Robotics Operating System (ROS) & Code walk through
- Webinar 5 : Advance Technology : AI/ML In Automotive & Mobility
- Qualifiers Submission

ONLINE SUBMISSION PROCESS



Package Evaluation and Awarding Marks

Total Marks : 40

Car Race Evaluation : 40 Marks Max

- One complete Lap : +10 Marks
  - Cut-off Time : Less then 10 min
- Car Speed Evaluation : +20 Marks (Percentile)
- Car Model : +10 Marks

Penalty : -1 mark for each violation

- Penalties will be
  - Out of track
  - Hitting any object like Tunnel, start blocks etc..
  - CAR will touch the road boundary line.
  - Car falling off from bridges and rumble track

Online Design Challenge : Award & Rewards

S. No.	Award Category	Award List	Award Cash Amount (Rs)
1	**Competition Award**	Winner	75000
		1st Runner Up	50000
		2nd Runner Up	25000
2	**Special Recognition**	Best CAR Model Award	10000
		AI Arjuna Award	10000
		Best Coding Award	10000
		Best Presentation Award	10000
		Fastest Car Award in Finale	10000
		Topper of Qualification Round	10000
3	**Internship Opportunity**	Winner to get Internship opportunity in NXP.	Top 3 Winning Teams
4	**NXP Mentorship Award**	Technical & Career mentorship throughout the Graduation.	Top 3 Winning Teams
5	**Certificate By NXP**	Certificate of Participation.	All successful submitter
6	**Finalist Vouchers**	Top 10 teams	Rs 10,000 voucher each

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THANK YOU ☺

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