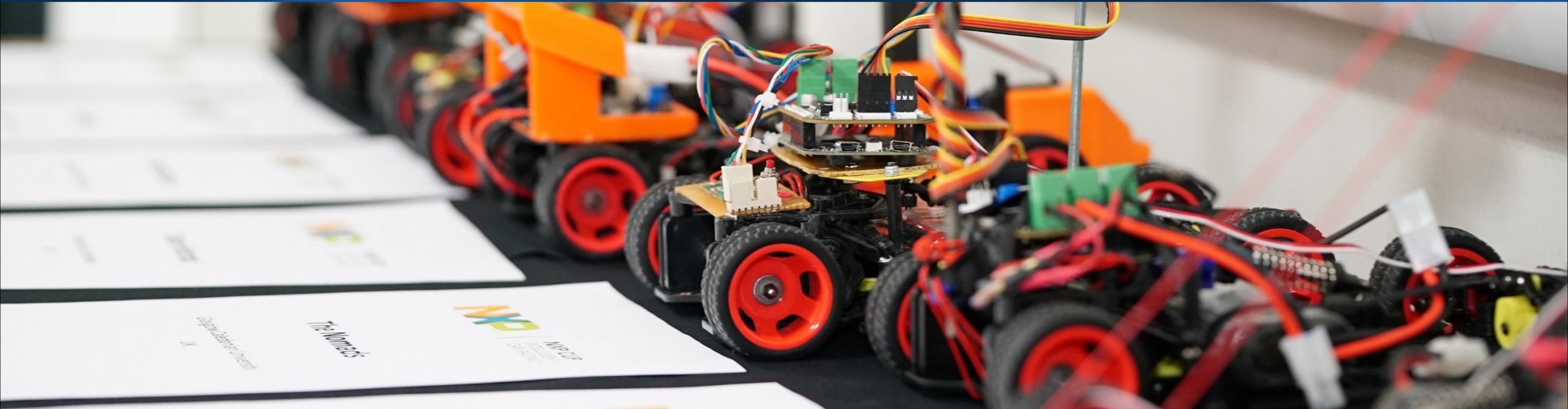


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ARTIFICIAL INTELLIGENCE in MOBILITY



THE RACE IS ABOUT TO BEGIN

# AIM (ARTIFICIAL INTELLIGENCE IN MOBILITY) : A PLATFORM

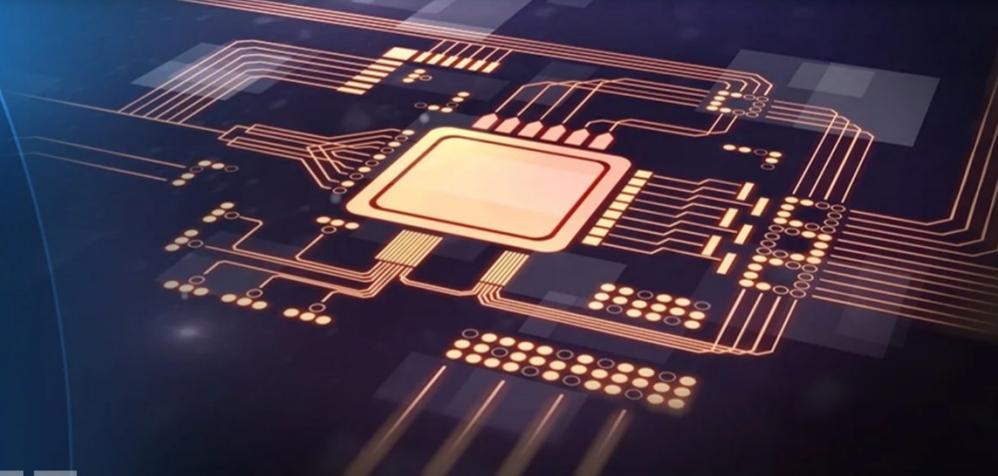
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## ARTIFICIAL INTELLIGENCE IN MOBILITY COMPETITION



**Artificial Intelligence in Mobility**

AIM is a platform for the Engineering Student Community to raise awareness, create interest and build enthusiasm in the field of Artificial Intelligence in Mobility through project-based embedded system design challenges.

[www.nxpaimindia.com](http://www.nxpaimindia.com)



# WHAT'S IT ALL ABOUT?

NXP India created a platform called AIM, Artificial Intelligence in Mobility platform created exclusively for young engineering talent in India to realize their dreams in hi-tech Electronics & Semiconductors and become future innovators in the country.

AIM is a unique platform, designed and developed for Indian University community, to develop a keen interest and enthusiasm in embedded product development and encourage them to share their creative, out-of-the-box innovative solutions for the mobility space.

**Indian Engineering universities UG & PG students are eligible....**

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# Online Design Challenge : An Intro

- ✓ Ubuntu Development Environment
- ✓ Gazebo Simulator
- ✓ ROS (Robotic Operating System)
- ✓ PX4
- ✓ rQT Image Viewer
- ✓ Sample Track
  - Qualifying Round
  - Pre-Final
  - Grand Finale

ONLINE DESIGN CHALLENGE

# Online Design Challenge : Process Details



**ONLINE DESIGN CHALLENGE**

# Major Milestones.....

## ⌚ TIMELINE



ONLINE DESIGN CHALLENGE

# Awards : First look

S. No.	Award Category	Award List	Award Cash Amount
1	Competition Award	Winner	50000
		1 <sup>st</sup> Runner Up	30000
		2 <sup>nd</sup> Runner Up	20000
2	Special Recognition	Best CAR Model Award	10000
		Innovation Award	10000
		AI Arjuna Award	10000
		Best Coding Award	10000
		Best Presentation Award	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

ONLINE DESIGN CHALLENGE

# AIM PLATFORM : ONLINE CHALLENGE : GAZEBO SIMULATOR

## Simulator Used



Gazebo is a well-designed simulator makes it possible to rapidly test algorithms, design, perform regression testing, and train AI system using realistic scenarios.

Gazebo offers the ability to accurately and efficiently simulate the design working in different environments, at your fingertips is a robust physics engine, high-quality graphics, and convenient programmatic and graphical interfaces. Best of all, Gazebo is free with a vibrant community..

Since students cannot experience the Physical hardware in COVID times so we have come up with an online challenge for this session to trigger the excitement and engagement. This will help in launching the full blown challenge in coming times.

## AIM Platform : A Creative Online Platform

### Explore – Code – Make – Compete

- Students need to complete coding tasks based on mobility
- Students to use open source Simulator to check their code
- Students to submit codes as per environment created by us

### Advantage

- Will help reach out to Colleges & AI Tech communities
- Online tool created for AIM will be tested for live environment

# AIM PLATFORM : ONLINE CHALLENGE : GAZEBO SIMULATOR MAIN FEATURES

## Features



### Dynamics Simulation

Access multiple high-performance physics engines including [ODE](#), [Bullet](#), [Simbody](#), and [DART](#).



### Advanced 3D Graphics

Utilizing [OGRE](#), Gazebo provides realistic rendering of environments including high-quality lighting, shadows, and textures.



### Sensors and Noise

Generate sensor data, optionally with noise, from laser range finders, 2D/3D cameras, Kinect style sensors, contact sensors, force-torque, and more.



### Plugins

Develop custom plugins for robot, sensor, and environmental control. Plugins provide direct access to Gazebo's [API](#).



### Robot Models

Many robots are provided including PR2, Pioneer2 DX, iRobot Create, and TurtleBot. Or build your own using [SDF](#).



### TCP/IP Transport

Run simulation on remote servers, and interface to Gazebo through socket-based message passing using [Google Protobufs](#).



### Cloud Simulation

Use [CloudSim](#) to run Gazebo on Amazon AWS and [GzWeb](#) to interact with the simulation through a browser.



### Command Line Tools

Extensive command line tools facilitate simulation introspection and control.

# Basic Steps For Participation.....

- ✓ Step 1: Register yourself for the challenge on : [www.nxpaimindia.com](http://www.nxpaimindia.com)
- ✓ Step 2: Organizer team will share the following
  - Detailed design challenge process.
  - Rules and regulations for the challenge
  - Judging criteria
  - SW Installation guide
  - Specs for creating the CAR model
  - Sample track & Challenges
- ✓ Step 3: Details for the Webinar and other trainings.
- ✓ Step 4: Complete details for qualifying round.
- ✓ Step 5: Complete details for the Pre-finale and track obstacles details.
- ✓ Step 6: Complete details for the Grand finale.
- ✓ Step 7: Recognitions and First Challenge event closure





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Thank you