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IIT Bombay

## Letter of Participation

This is to certify that **Janani A**, a student of **Madras Institute of Technology Campus, Anna University, Tamil Nadu** has participated in the **e-Yantra Robotics Competition (eYRC 2023-24)**.

He/She is a member of the team having the following team members:

1. Nithish G
2. Janani A
3. Jeganath Y P
4. Abishek S

This team has participated in **GeoGuide** theme.

Prof. Kavi Arya  
Principal Investigator, e-Yantra  
Professor  
Department of Computer Science and Engineering  
Indian Institute of Technology Bombay



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**e-Yantra is a project sponsored by MHRD, Government of India, under the National Mission on Education through ICT (NMEICT).**

**Certificate of Merit:** awarded to finalist teams.

**Certificate of Completion:** awarded to teams for completing all the tasks of the competition.

**Certificate of Participation:** awarded to teams for partial completion of tasks in the competition.

**Letter of Participation:** awarded as an acknowledgement of participation on e-Yantra Letterhead.

## Theme: *GeoGuide*

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### Theme Description:

In this theme a combination of an overhead camera and a two wheeled robot is used to navigate an arena which is an actual satellite image taken from the map. As the robot navigates, its real-time position is continually updated on the actual map through the use of QGIS Software.

Tasked with visiting five events positioned within the arena in a predefined priority sequence, the robot relies on the overhead camera setup to identify these events and their respective locations. The robot uses an ESP32 microcontroller along with other sensors and actuators.

**Theme Learning:** *Machine Learning Algorithms, Image Processing, Remote sensing, GIS, Build-a-Bot, Shortest Path Algorithms, Wireless Communication*

**Team Learning:** The team has been awarded **Level 4** in the e-Yantra Robotics Competition (eYRC).

*This level indicates that the team was able to complete initial tasks (mostly Task 0, Task 1 and Task 2 out of the total 6 tasks)*

**Certificate Table**

Certificate Level	Certificate Description
Level 1	Certificate of Merit
Level 2	Certificate of Completion
Level 3	Certificate of Participation
Level 4	Letter of Participation

*\*level 1 > level 2 > level 3 > level 4*