Certificate of Merit

This is to certify that Ashwin Disa, a student of Manipal Institute of Technology, Karnataka has participated in the Grand Finale of **e-Yantra Robotics Competition (eYRC 2021-22)** held on April 2nd, 2022.

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

1. Kallol Saha
2. Ashwin Disa
3. Srujan Kulkarni
4. Tanaya Gupte

This team has been selected as one of 6 **finalists** out of 242 **teams** in the Dairy Bike theme and has been placed at 1st **position** in this theme.

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

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[P.T.O]

Theme: *Dairy Bike*

Theme Description: We design a Dairy Bot comprising a Two Wheeled Self Balancing Robot. The robot loads/unloads dairy products from a dairy farm to designated delivery points. We use a Linear Quadratic Regulator (LQR) control strategy for balancing the robot equipped with a flywheel mechanism. We help you discover your talent in designing and building a robot from scratch and learn how to build a challenging control system to balance a two-wheeled robot. After building the bot, we navigate it in an arena to complete a set of tasks.

Theme Learning: *Self-Balancing Robot, State-Space Modelling, Euler-Lagrange Mechanics, Linear Quadratic Regulator, Lua Language, Octave Programming, Coppelia Sim, Fusion 360.*

Team Learning: The team has been awarded **Level 1** in the e-Yantra Robotics Competition (eYRC).

This level indicates that the team was able to show high competence in the competition and reached the ultimate goal of solving the whole implementation and reached the finals (top 5-8 teams) after 7 months of hard work.

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