

ERTS Lab

Department of Computer Science and Engineering

Indian Institute of Technology Bombay, Powai

Mumbai - 400 076.



Certificate of Completion

This is to certify that **Dharmik Prafulbhai Suhagiya**, a student of **Dr. S & S. S. Ghandhy College of Engineering & Technology, Gujarat** has participated in the **e-Yantra Robotics Competition (eYRC 2025-26)**.

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

1. Dwij Ashvinbhai Savani
2. Aditya Bharatbhai Karsariya
3. Harsh Rameshbhai Depani
4. Dharmik Prafulbhai Suhagiya

This team has successfully completed all the assigned tasks in **CropDrop Bot** theme.

Prof. Shivaram Kalyan Krishnan

Principal Investigator, e-Yantra

Associate Professor

Department of Computer Science and Engineering

Indian Institute of Technology Bombay



EYRC2025-
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e-Yantra is a project sponsored by MHRD, Government of India, under the National Mission on Education through ICT (NMEICT).

[P.T.O]

eYantra

Engineering a better tomorrow



Theme: *CropDrop Bot*

Theme Description:

The objective of this project is to design and implement an autonomous line-following and object-delivery robot, CropDrop Bot, that simulates agricultural logistics.

The robot begins its operation at a designated supply depot and autonomously navigates a predefined white-line track that represents farm pathways, including curves, zigzag sections, and discontinuous (dotted) segments. Along this route, the robot must detect and collect color-coded crates, each corresponding to a specific priority of the Delivery. Upon successful collection, the robot transitions to a black-line track that simulates village transportation lanes leading to Drop Zones. The robot must correctly identify the designated delivery zone for each crate

Participants are expected to design robust control algorithms with PID/RL to ensure reliable line tracking across varying path geometries, accurate color-based crate identification, precise pickup and drop actuation using electro-Magnet, and efficient task sequencing.

Theme Learning: *PID Control ,Reinforcement Learning, Control, Python, Embedded-C, Build-a-Bot.*

Certificate Level: The team has been awarded **Level 2** certificate in the e-Yantra Robotics Competition (eYRC).

Level 2 indicates: The team demonstrated a clear understanding of the problem statement via a full implementation and was in top 10-30 ranked team in the competition.

Certificate Level Matrix

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 (Level 1 is highest achievement)