

# Line Follower Robot

**Prof. Sarika Khare<sup>1</sup>, Himesh Sonone<sup>2</sup>, Aryan Chavan<sup>3</sup>, Vishwajeet Patayane<sup>4</sup>, Omkar Wadke<sup>5</sup>**

Lecturer, Department of Mechanical Engineering<sup>1</sup>

Students, Department of Mechanical Engineering<sup>2, 3, 4, 5</sup>

Bharati Vidyapeeth Institute of Technology, Navi Mumbai, Maharashtra, India

**Abstract:** *This project focuses on the design and development of a Line Follower Robot, an autonomous robot capable of detecting and following a path, typically represented by a black line on a contrasting white surface. The purpose of this robot is to demonstrate the practical application of automation, reducing human effort and enhancing efficiency in both industrial and educational settings. Powered by an Arduino UNO microcontroller and equipped with IR sensors, a motor driver module, and DC motors, this robot follows a line autonomously based on reflected light signals. The project highlights real-time embedded system implementation, robotics fundamentals, and sensor-actuator coordination. Applications include industrial material movement, smart delivery systems, and educational kits..*

**Keywords:** IR Sensors, Arduino UNO, Line Following, Automation, Embedded System, Robotics

