



## Dev Bhagat

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### ABOUT ME

With a strong foundation in mechanical engineering, this dedicated learner is enthusiastic about robotics and mechatronics. Expertise includes real-time control algorithms using Arduino IDE, C/C++ programming and robot kinematics and dynamics. Committed to advancing robotics and automation, the focus is on creating innovative and sustainable solutions. A proven track record in academic and practical applications equips the individual to tackle challenges and contribute to advancements in technology and engineering.

### DIGITAL SKILLS

Solidworks and MATLAB | Mobile Robotics and Cobots | Arduino and STM32 | Team leadership | Pneumatics and Hydraulics | PLC-programming | Automation programming (C/C++)

### WORK EXPERIENCE

1 JAN 2024 – 30 JUN 2024 Noida, India

**MECHANICAL ENGINEER** ORANGEWOOD LABS

The work experience at Orangewood Labs provided valuable exposure to mobile robotics and automation, blending theoretical study with hands-on practice in mechanical design, CAD modelling and system integration. Engaged in projects such as the Robot 7th Axis Vertical Lifting Column and the Functionality Check SPM, participants tackled real-world engineering challenges.

1 JUL 2023 – 31 MAY 2024 Ahmedabad, India

**VICE-PRESIDENT** NIRMA ROBOTECH CLUB

Provided extensive technical guidance at NRC, ITNU, Nirma University, organizing workshops and delivering lectures to inspire and educate individuals about robotics technologies.

1 DEC 2021 – 31 OCT 2023 Ahmedabad, India

**MECHANICAL TEAM LEAD** ROBOCON, NIRMA UNIVERSITY

Led the Mechanical Department of the Robocon team at Nirma University, managing over 25,000 euros in funds to coordinate the development, fabrication and simulation of innovative robot designs for national and international competitions.

### EDUCATION AND TRAINING

SEP 2024 – CURRENT Limerick, Ireland

**MASTERS OF ENGINEERING IN MECHATRONICS** University of Limerick

**Website** [www.ul.ie](http://www.ul.ie) | **Field of study** Robotics and Automation | **Level in EQF** EQF level 7 | **Type of credits** ECTS |

**Number of credits** 90

AUG 2020 – MAY 2024 Ahmedabad, India

**BACHELORS OF TECHNOLOGY IN MECHANICAL ENGINEERING** Institute of Technology, Nirma University

**Website** <https://nirmauni.ac.in> | **Final grade** 7.99/10 | **Level in EQF** EQF level 6 | **Type of credits** Indian Credits |

**Number of credits** 152



## ● PROJECTS

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MAY 2023 – JUL 2023

### **Coordinate system for 3-wheel Omni-drive**

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Developed a custom algorithm in Arduino IDE and C programming for a three-wheel omni drive, integrating kinematics, closed-loop PID control, and high-end sensors for precision, while implementing a user-friendly manual mode with automated calculations.

JUL 2023 – NOV 2023

### **Reconfigurable four wheeled Omni drive**

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Focused on designing an eccentric and reconfigurable 4-wheel omni-drive system in mobile robotics, conducting a comprehensive comparative analysis between simulated motion study outcomes and experimental results, while accounting for deviations induced by reconfigurability.

MAY 2022 – OCT 2022

### **Design of 3-shoe Centrifugal Clutch**

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Proficiently utilised Solidworks for CAD modelling of a centrifugal clutch design, incorporating calculated dimensions and force values from mathematical equations. Produced detailed bill of materials, conducted motion studies and stress analyses, earning an A grade in Machine Design coursework.

## ● PUBLICATIONS

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2024

### **AIP Journal**

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Dev Bhagat, Arya Kargathara, Dhananjay Lakhani, Dheeraj Agarwal, Prof. Mihir Chauhan, "Enemy detection with autonomous obstacle avoidance 3 wheeled synchronous drive", 4th International Conference on Robotics, Intelligent Automation and Control Technologies (RIACT - 2023), published in AIP proceedings.

## ● HONOURS AND AWARDS

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AUG 2022

### **2nd Runners-up at International Robotics Competition – ABU Robocon**

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As Mechanical Head of Team Nirma Robocon, competed against 18 international teams in the International Robocon 2022 organized by ABU at IIT Delhi, India, securing third place ~ the highest-ever ranking for an Indian team. Also awarded the NOK-sponsored prize for outstanding, reliable and consistent performance.