

# Bhavin Makwana

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Results-driven Mechatronics Engineer with expertise in mechanical, electronic, and control systems, including IoT, PLCs, SAP, and Oracle. Skilled in designing and maintaining complex systems, with strong problem-solving abilities. Seeking a challenging role to apply innovative thinking and grow in a dynamic environment.

## EDUCATION

### B.E in MECHATRONICS ENGINEERING CGPA: 7.01

G H PATEL COLLEGE OF ENGINEERING AND TECHNOLOGY, GTU UNIVERSITY  
Relevant Coursework: ROS for Robotics Programming; Machine Design

Anand, IN  
Jun 2018 – Jun 2022

### Higher Secondary Central Board Exam (12th), Percentage: 56 %, 6.5 CGPA

NARAYAN VIDYA VIHAR | GHSEB BOARD

Bharuch, IN  
Jun 2017 - Jun 2018

### Secondary Central Board Exam (10th), Percentage: 92.60 %, 9.8 CGPA

NARAYAN VIDYA VIHAR | GHSEB BOARD

Bharuch, IN  
Jun 2016 - Jun 2017

## WORK EXPERIENCE

### Elecon Engineering Pvt. Ltd.

Senior Engineer

Anand, IN  
Jan 2024 – Present

- Utilizing AutoCAD Electrical and AutoCAD Inventor for advanced 3D modeling and design.
- Creating Bills of Materials (BOM) for products and assemblies.
- Developing 3D models and mechanical mechanisms using CAD software.
- Conducting detailed dimensioning of features and components and applying Geometric Dimensioning principles.
- Leveraging experience with SAP and Oracle for project management and data integration and utilizing Product Data Management (PDM) systems.
- Preparing documentation in compliance with ISO standards.
- Designing Fluid Power Systems (FPS) and Hydraulic Power Units (HPUs) according to customer specifications and generating corresponding BOMs.
- Managing and integrating electrical systems within FLSs and HPUs and developing electrical circuits and creating electrical system BOMs, calibrating transmitters and overseeing electrical testing procedures, supervising electrical fabrication, junction box (JB), and panel wiring, producing detailed JB panel drawings and conducting electrical panel testing.

### Bosch Rexroth India Pvt Ltd.

Trainee Apprentice

Ahmedabad, IN  
Oct 2022 – Oct 2023

- Managed the simulation and development processes for power units and electrical systems, ensuring seamless integration and performance optimization.
- Collaborated closely with a German team to implement continuous improvement strategies and worked with multidisciplinary teams to design, develop, and implement advanced mechatronic systems and solutions.
- Played a key role in numerous projects, delivering exceptional outcomes by designing and programming PLCs to enhance performance and efficiency for clients.
- Led testing and troubleshooting efforts for mechatronic systems, guaranteeing high-quality functionality, reliability, and adherence to industry standards.
- Actively contributed to the evaluation and selection of components, materials, and suppliers, ensuring alignment with project specifications and requirements.

## PROJECTS

### CMTI (ISRO Aerospace Power Unit)

- Developed and optimized proximity sensors and accumulator systems to enhance the stability and performance of aerospace systems.

### Gesture-Controlled Prosthetic Hand

- Engineered a robotic hand controlled by hand gestures, integrating advanced sensors such as accelerometers, gyroscopes, and cameras to accurately interpret and execute user gestures.

### Robotic Arm

- Designed and constructed a robotic arm with multiple degrees of freedom, programmed to perform a variety of tasks including object manipulation, drawing, and even playing games like chess.

### Autonomous Quadcopter

- Built an autonomous quadcopter with GPS-based navigation and sensor-driven obstacle avoidance, featuring real-time video streaming capabilities for enhanced functionality.

## EXTRA CURRICULAR ACTIVITIES & TRAININGS

### Oswal Machinery LTD.

Intern

Anand, IN  
Jan 2022 – Apr 2022

- Learned about heavy-duty cranes building process and drafting, successfully completed "BARC's" project named as "Remote Handling Trolleys in Tunnels".
- Lead the team to design a device that display real time monitoring data.

### Godrej & Boyce Mfg. Co. LTD.

Internship

Vadodara, IN  
Jun 2021 – Jun 2021

- Vocational Training of 14 days at Godrej Ltd., learned about HVAC System & Refrigeration & Air Conditioning.

## ISA Student Chapter

Executive Chair (ID: 000033819715)

Gujarat, IN  
Apr 2020 – Jun 2021

- Worked as an "Executive Chair" in "International Society Of Automation" and lead numbers of Tech & Non-Tech events like "Space Talk", "Deciphering Success", "Designer's Quest", "The Gate To The Quantum Realm", "UI/UX Design", "Digital Marketing" and "Industry 4.0".
- Won 1<sup>st</sup> prize in "Indra Science Fair".
- Successfully Completed Mat lab courses.

## KEY SKILLS

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**Mechatronic System Design:** Proficient in designing and integrating mechanical, electrical, and software components using CAD tools (AutoCAD, SolidWorks) and control systems (PLC, PID, real-time control).

**Programming & Automation:** Skilled in C/C++, Python for system automation, and experienced in robotics, IoT technologies, and communication protocols.

**Electrical & Mechanical Expertise:** Strong foundation in circuit design, electronics, and mechanical system analysis, ensuring high performance and reliability.

**Sensors & Actuators:** In-depth knowledge of sensors (accelerometers, encoders) and actuators (motors, servos) for intelligent system control and feedback.

**Data Analysis & Decision Making:** Competent in using MATLAB, Excel, and statistical tools for data-driven decision-making and performance optimization.

**Project Management & Collaboration:** Excellent in cross-functional teamwork, communication, adaptability, and delivering innovative solutions within project timelines.

**Languages:** Professional Working Proficiency in **English, Hindi & Gujarati**.

**Certifications & Training:** MATLAB Onramp trainee, Machine Learning Onramp, Robotics: Aerial robotics, Introduction to self-driving cars.

**Awards:** EXECUTIVE CHAIR, MATLAB Onramp trainee, outstanding performance Award in INDRA SCIENCE FAIR by University.