# Nitesh Yadav

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## Education

**Sardar Vallabhbhai National Institute of Technology** — Surat, India
*Bachelor of Technology, Mechanical Engineering* — *Aug 2023 - Jun 2027*

- **CGPA** : 7.47 ( Current)
- **Relevant Coursework**: Fluid Mechanics, Automobile engineering, Machine Design, Thermal Engineering, Tribology and Vibrations, Manufacturing and Materials Fluid Machines (like Turbine, Pumps, Compressor), 3D Printing, Theory and Dynamics Of Machines, Industrial Engineering, Quality Managment.

**Shree Vasishtha Vidhyalaya** — Surat, India
*CBSE 12th Score-84.2* — *April 2021 - March 2022*

**RMG Maheshwari English School** — Surat, India
*CBSE 10th Score-89.8* — *April 2019 - March 2020*

## Personal Projects

***International Rover Challenge (IRC)*** —— *Mechanical Lead* — *sep 2024-feb 2026*

- Engineered and optimized a custom 30:1 worm gearbox system to sustain heavy 10 kg payloads, validating performance metrics through mechanical simulation and physical stress testing.
- Developed and fabricated the multi-terrain vehicle chassis and Rocker-Bogie suspension system, executing structural Finite Element Analysis (FEA) to ensure structural integrity across rugged environment.
- Designed and implemented a 6-DOF robotic manipulator featuring a custom bevel and worm gearbox drive with an impact-resistant polymer (TPU,PETG) mechanical gripper for precise object handling.
- Managed vendor procurement and applied Design for Manufacturing (DFM) and GD&T principles to coordinate precision machining tasks (including industrial welding, laser cutting, and drilling).
- Coordinated with a cross-functional engineering team to secure a 9th-place international ranking at IRC 2026 (advancing from 13th in 2025) by executing rigorous system validation and field-testing protocols.

***Vertical Axis Wind Turbine (VAWT)*** — *Ongoing*

- Designing and fabricating a multi blade Savonius Wind Turbine to study the effect of overlap ratio on performance; completed the experiment with 2 Blade set up, currently working on 3 Blade.
- Conducting initial experiments by varying overlap ratios and recording rotational speed and output characteristics. Collected preliminary data using tachometer and basic wind measurement setup; further trials in progress for validation.
- CFD analysis of optimal overlap ratio to be carried out for Aerodynamic design implmentation to the blades using software like Ansys Fluent .
- Planning extended testing and comparative analysis with theoretical models and existing literature.

***Pneumatic Gripper***

- Created a prototype pneumatic gripper with adjustable gripping mechanisms; the design enabled the successful handling of irregularly shaped object.
- Features: wooden based 4 claw gripper, pneumatic piston with stroke length of 100 mm, 5/3 Solenoidal valve to control.
- Functions: opens and closes with piston's full stroke and zero stroke movement respectively to grasp and hold objects of various shape and size.

## Skills And Mindset

**Technical Skills**: Autocad, Solid Works, 3D printing, MS excel, Mechanical System Design, Material Science, Manufacturing Process.
**Soft Skills**: Problem-Solving, Critical Thinking, Attention to Detail, Adaptability, Teamwork, Communication, Time Management, Innovation.
**Mindset**: Strong passion for mechanical design and continuous learning. Persistent and solution-focused, with an eagerness to take on challenges and learn from hands-on experiences.

## Achievements and Position Of Responsibility

- 9th rank internationally in IRC 2026, 13th rank internationally in IRC 2025
- Qualified NCC B certificate
- An active member of Drishti technical club of SVNIT, Surat.
- Managed and mentored technical events at SVNIT, Surat such as Grand Robo Prix 2025 and Makernova 3.O.