Srujan Pandya

B.Tech · Mechanical Engineering · Indian Institute of Technology Gandhinagar

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"The true sign of intelligence is not knowledge, but imagination."

Summary

B.Tech final year student at IIT Gandhinagar, pursuing Honors in Mechanical Engineering and Minors in Physics. Experienced with design and simulation softwares (ANSYS, Autodesk, COMSOL). Python and MATLAB are the primary programming languages. Interested in Aerodynamics, Astrophysics and Space Systems. Ready to handle challenging tasks, and learning new technologies and tools for research purposes and projects.

Education

Degree	Institute	CPI/%	Year
B.Tech	IIT Gandhinagar	8.24 (CPI)	2018-22
Class XII	Green Valley High School, Vadodara	87.2 %	2017-18
Class X	Bright Day School CBSE , Vadodara	10.0 (CGPA)	2015-16

Projects

Deformation Analysis of Tapered Inflated Beam, Prof. Tanmoy Mukhopadhyay

Remote - IIT Kanpur

Intern *May 2021 - July 2021*

- Deformation analysis of cylindrical and tapered inflated cantilevel beams under a concentrated force on ANSYS Mechanical APDL
- Implemented the 3D Membrane model using Finite Element Method (FEM) with SHELL 181 elements

Design and Simulation of TU Delft's Flying-V, Prof. Vinod Narayanan

IIT Gandhinagar

Project Course *Jan 2021 - May 2021*

- Modelled the novel design of TU Delft's Flying-V aircraft on Autodesk Fusion 360
- CFD analysis of the design processed on ANSYS and COMSOL and its comparison with known commerical aircrafts

Turbulent Flow Simulations for Modified Wing Geometries, Prof. Vinod Narayanan

IIT Gandhinagar

Project Course *Aug 2020 - Dec 2020*

- Reproduced the results of surface simulation of NACA 0012 airfoil on COMSOL Multiphysics
- Designed modified wing geometries with variable chord length in Fusion 360 and performed 3D simulation to calculate lift-to-drag ratio

Experimental Determination of Thrust of a Rocket Engine Model

IIT Gandhinagar

Student-Run Project *Oct 2021 - Present*

- Theoretically modeling and simulating the rocket engine along with formulation of the combustion equations
- Experimentally determining the thrust after building the physical model of the rocket engine

Joint Impedance Control, TimeTooth Technologies

IIT Gandhinagar

Industry Project *Oct 2021 - Nov 2021*

- Modeling a 1 DOF system to account for the patient effort in an existing exoskeleton for lower limb patient rehabilitation
- Implemented Joint Impedance Control for the "limb + exoskeleton" system with 100% and 0% patient effort

Collaborative Transportation of Point Mass Cable-Suspended Payload using Two Quadcopters, Prof. Sachin Goyal

IIT Gandhinagar - UC Merced

Course Project *Feb 2021 - April 2021*

- Trajectory planning and control (set-point tracking) of two quadcopters with cable-suspended payload on MATLAB Simulink
- Implemented the "leader-follower" scheme where the leader quadcopter directs the motion and the follower stabilizes the oscillations in the cables

Thermodynamic Performance of a Household Refrigerator, Prof. Atul Bhargav

IIT Gandhinagar

Course Project *Sept 2019 - Nov 2019*

- Experimentally determined the coefficient of performance (COP = 1.97) of a household refrigerator working on the refrigerant Isobutane (R600a) and compared it with the claimed value
- Analysed the performance by calculating the heat and work interactions involved in the Vapor Compression Cycle, with cooling capacity equal to the theoretical value

Orbital Motion and Landing Trajectories, Prof. Chelva Kumar *IIT Gandhinagar*

Course Project *Oct 2019 - Nov 2019*

- Obtained the landing trajectory for Vikram and analyzed its motion over the last 6 km altitude along with the landing sequence of NASA's Curiosity landing on Mars for its comparison with Vikram

Honors & Awards

Academic

2019 **Dean's List**, Academic Excellence for Semester II *IIT Gandhinagar*

2020 **Dean's List**, Academic Excellence for Semester V *IIT Gandhinagar*

2021 **Dean's List**, Academic Excellence for Semester VI *IIT Gandhinagar*

2017 **KVPY Fellowship**, Scholarship Award in Basic Sciences *IISc. Bangalore*

Competitive Examinations

2016 **NSEA***, Cleared 1st Round of the International Olympiad on Astronomy and Astrophysics *IAPT**

2017 **INAO***, Participated in 2nd Round of the International Olympiad on Astronomy and Astrophysics *HBCSE**

* NSEA = National Standard Examination in Astronomy, INAO = Indian National Astronomy Olympiad

* IAPT = Indian Association of Physics Teachers, HBCSE = Homi Bhabha Centre for Science Education

Positions of Responsibility

Organizer *IIT Gandhinagar*

Fresher's Week 2019 *Sept 2019*

- Coordinated with a team of 12 people and ensured the successful conduction of the event.
- Administered a budget of over Rs 4 Lacs for managing food and sub-events over the week.
- Organized dinner for the whole student community of IIT Gandhinagar, consisting of 1700 people.

Leader, Winner Team 'Agni' *IIT Gandhinagar*

Intramurals - Sports Event at IIT Gandhinagar *Jul 2018 - Aug 2018*

- Led a team of 50 people through various cultural and sports competitions to the winning trophy.

Technical Skills

The Technical Skills are categorized into Programming Languages and Design/Simulation Softwares:

- **Programming Languages:** Python 3, MATLAB, R (Basic)
- **Softwares:** ANSYS Fluent, ANSYS Mechanical APDL, Autodesk Inventor Professional, Autodesk Fusion 360, COMSOL Multiphysics, LTSpice, Cantera, Simulink, Hyperworks

Relevant Courses

Honors *IIT Gandhinagar*

Mechanical Engineering *Aug 2018 - Nov 2021*

- Solid Mechanics, Mechanics of Deformable Bodies
- Thermodynamics, Fluid Mechanics, Heat and Mass Transfer, Aircraft and Rocket Propulsion
- Dynamics & Vibrations, Synthesis & Analysis of Mechanisms, Multi-Body Dynamics, Introduction to Robotics

Minors *IIT Gandhinagar*

Physics *Aug 2020 - Nov 2021*

- Classical Mechanics, Quantum Mechanics, Tools of Experimental Physics

Extracurricular Activity

Fresher's Week 2018 *IIT Gandhinagar*

Mr.Confident *Sept 2018*

- Entitled Mr. Confident after various rounds of debating, extempore and other personality checks.

Competitive Mindset Institute (CMI) *IIT Gandhinagar*

Short Course - Find the Leader in You (FLY) *Sept 2019 - Oct 2019*

- Successfully completed a short course - FLY Scholar - which delivers high quality education in soft or non-cognitive skills and ethical leadership among university students.