



Pranjal Ketan Jhaveri
Mechanical Engineering
Indian Institute of Technology Bombay

15D170001
UG Third Year (B.Tech.)
Male
DOB: 26/11/1997

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2018	8.89
Intermediate/+2	Gujarat State Education Board	Pravrutti Vidhyalaya, Jeevanbharti	2015	93.84
Matriculation	Gujarat State Education Board	Pravrutti Vidhyalaya, Jeevanbharti	2013	92.33

SCHOLASTIC ACHIEVEMENTS

AWARDED AP GRADE
for excellent performance in
Computer Programming & Utilization
awarded to 10 out of 500 students

RANKED IN TOP 0.11%
among 1.3 million students
JEE-mains'15

RANKED IN TOP 1.22%
among 0.15 million students
JEE-advanced'15

ALL INDIA RANK 190
among 80 thousand students
National Entrance Screening Test

AWARDED KVPY 2014
in top 0.8% among 1 lac students
Kishor Vaigyanik Protsahan Yojna

SECURED 99.93%ILE
in class 12
among 72 thousand students
Gujarat State Education Board

Qualified for
CHANGE OF BRANCH
among select 89 in 900+ students

INTEREST

Enthusiastic about solving
Real life problems
by searching for
Sustainable Solutions

Machine Design
Optimization
Energy Efficiency Improvement
Sustainability

Pursuing **Minor** in **Centre for Technology Alternatives for Rural Areas**

PROJECTS UNDERTAKEN

HYPER | HYDROGEN PEROXIDE ETHANOL ROVER SINCE NOV'16
Designing an Ornithopter (a bird like plane) for heavy payload usage

Guide: Prof. Arindrajit Chowdhury, Asso. Prof, ME Team of Five

- Devised *wing flapping mechanism* based on *Crank-Rocker Four-Bar Linkage*, optimized by theoretical analysis and *simulations on Adams*
- Optimized Light weight Spur gear trains* for *high Power transmission*
- Designed the structure* of the rover and *analyzed stresses and deformations* of components in Ansys after SolidWorks modeling
- Manufactured components by suitable processes such as 2D cutting, CNC/Manual Milling & lathe, 3D printing and assembled the rover
- Developing testing mechanism* for thrust and lift measurement to study the behavior of model in the realistic condition

ENERGY EFFICIENT STOVE FOR RURAL AREA MAR-APR'16

Course Project: Prof. Rangan Banerjee, HOD, ESE

Team of Two

- Designed and fabricated *wood based single pan portable stove* starting from baseline stove to improve on efficiency and ease of fabrication
- Conceptualized "*Demoisturizing chamber*" to decrease water content in the wood (for next meal) to reduce energy usage in vaporization
- Innovated *secondary air inlet* which also produces *swirling of air*
- Proposed *use of fine metal mesh* to decrease heat loss, and safety

ENERGY FUTURE OF IITB CAMPUS

Guide: Prof. Rangan Banerjee, HOD, ESE

SINCE MAY'16

Team of Three

Summer Undergraduate Research Program, 2016

- Predicting energy future* of IIT Bombay campus for the year of 2025 and *developing different scenarios* such as zero carbon footprint
- Conducting cross-campus *energy mapping*
- Comparing new and old buildings for prediction of future buildings
- Exploring possible solutions which can be incorporated to meet the future energy demand and formulating different scenarios

VIRTUAL READING ASSISTANT

MAY-JUN'16

Real time hands-free assistance for Dictionary and saving Images
Institute Technical Summer Project, 2016

Team of Four

- Ideated and conceptualized a device to work as an interface that links paperwork (reading, writing, sketching etc.) to digital environment
- Developed an *audio interface* using Google *API s*, *Image processing* program using *OpenCV + Python* to detect virtual gestures by fingertip
- Enabled *wireless video streaming* input to use any camera available to the user, be it smart-phone or device designed using raspberry Pi3

GRID CONNECTED SOLAR ROOF-TOP PLANT SIZER JUL'16

Python based program to show Economically beneficial plant sizes

- Developed interface to find suitable plant size using different combination of inputs for current economic situation and policies
- Simplified change of technical parameters to simulate various scenarios

COURSEWORK

MECHANICAL

Solid Mechanics
Strength of materials
Thermodynamics • Heat Transfer
Mechanical Measurements
Manufacturing processes
Fluid Mechanics
Data Analysis & Interpretation
Engineering Graphics and Drawing

MATHEMATICS

Differential Equations
Linear Algebra • Calculus
Numerical analysis

OTHER

Energy Engineering Fundamentals
Electrical & Electronics Circuits
Microprocessor & automatic control
Engineering Metallurgy
Sustainable Engineering Principles
Public Policy & Governance
Biology • Economics

SKILLS

TECHNICAL SOFTWARE

AutoCAD • Solidworks
Adams • Gnumeric • Ansys

DESIGNING & EDITING SOFTWARE

Gimp • Adobe Photoshop
Audacity • Kdenlive
Movie Maker

PROGRAMMING

Python • HTML • C • C++
Spreadsheet Programming
G-code (CNC programming)
LaTeX • CSS • Java • Javascript
Matlab/Scilab

WORKSHOP SKILLS

Manual & CNC Milling (3-axis)
Manual & CNC lathe
Shaping • Drilling
Soldering • Welding
proficient , intermediate , basic

POSITIONS OF RESPONSIBILITY

COMPETITIONS COORDINATOR

Asia's largest science and technology festival

- Coordinated 22 competitions with total prize worth of 4.18 million INR
- Responsible for ideation, publicity and execution of Energon : 24x7 reliable eco friendly charger making competition

TECHFEST 2017

May'16-Dec'16

ASSISTANT MANAGER

Annual Research and Technology Festival of Mechanical Engg. Dept.
Part of the 8-member team

RADIANCE 2017

Sept'16-Mar'17

- Responsible for different design requirements like Publicity poster, ambience, T-shirt and hoodie for volunteers etc.

OTHER TECHNICAL ACTIVITIES

TECH AND RND EXPOSITION, IIT BOMBAY

MAR'17

Presented "Virtual Reading Assistant"

WATER MANAGEMENT SYSTEM FOR A HOUSE

'13

Science fair, St. Thomas School, Surat, Gujarat

- Ideated water management system using rainwater harvesting system, different filtration processes and water efficient devices

STUDY OF NON-CONVENTIONAL ENERGY SOURCES

'12

National Children's Science Congress, Guj., Dept. of Sci. and Tech., GOI

- Examined current energy scenario of India, share of different sources in production, relative prices and installation costs

EFFECTS OF FLUORIDE ION ON HEALTH

'11

National Children's Science Congress, Guj., Dept. of Sci. and Tech., GOI

- Studied effects of different concentration of fluoride ion on living entity
- Estimated fluoride pollution caused by industries

HOBBY PROJECTS

- Rear view Add-on for spectacles
- Door opening notifier using Magnet, Pendulum & Bell
- Bluetooth controlled two wheeler bot to navigate through the obstacle course
- Analysed working of solar cooker & operation of different combinations of solar panels
- Visited Tata thermal power plant, Trombay, Mumbai Metro control station, Kakrapar Atomic Power Station

EXTRACURRICULAR ACTIVITIES

CULTURALS

Fine arts • Tabla • Literature • Photography

- Won 2 gold medals at national level in Korasala wonder art world
- Completed a two semester long Fine arts course under NSO, IITB
- Avid for Photography, designing and craft work
- Awarded 'Madhyama Pratham' certificate for Tabla playing
- Bagged second prize for a Gujarati poem in city level competition
- Won third prize in a district level short story writing competition

ADVENTURE AND SPORTS

Trekking and hiking • Traveling • Table-tennis • Swimming

- State level player of Table Tennis
- Four major treks in the Himalayas at an altitude of 13000ft and many hikes in Western ghat