



EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2021	M.TECH Dual Degree 5Y	IIT Kharagpur	7.14 / 10
2015	Higher Secondary Certificate	Maharashtra State Board	81.23%
2013	Secondary School Certificate	Maharashtra State Board	90.91%

SKILLS AND EXPERTISE

Programming Language- C/C++ | Python **Softwares-** MATLAB | Jupyter Notebook **libraries-** STL | SymPy | NumPy
Courses - Programing and data structures | Genetic Algorithms | Soft Computing | Partial Differential Equations

INTERNSHIPS

Lear India Engineering LLP | Mechanical Engineering Intern May 2020 - Aug 2020

- Built CAD Model of **Rollover cage** and assembled all subsystems of **Electric vehicle** prototype for electric testing
- Performed **Multi Body Dynamic simulation** on rollover cage to calculate maximum force on cage during rollover
- Executed **static structural analysis** for front, back, side impact and rollover to ensure appropriate **factor of safety**
- Acquired knowledge of **safety systems** in electric vehicle like active rollover protection and its sub- systems

General Motors Technical Center India | Mechanical engineering intern | VDDC department May 2019 - July 2019

- Built **MBD Model** of Differential drive using Adams to demonstrate Adams capability to capture clunk behavior
- Integrated **Differential drive** with **automatic transmission system 8L90** to perform Multi Body Dynamic simulation
- Compared simulation outcomes with test results which shows that **Adams** can be used for **clunk behavior analysis**
- Developed the virtual validation process and studied the effect of various parameters on **contact forces**

PROJECTS

Hand Exoskeleton | Master's Thesis Project | Guide - Dr. C S Kumar Sep 2020 - Present

- Development of a cost-effective, **3D printed** exoskeleton that will be used for hand moment rehabilitation

Analysis of debonding in lumbar vertebrae | bachelor thesis project | Guide - Dr. Sanjay Gupta July 2019 - May 2020

- Implemented **Bone remodeling algorithm** and wrote a **macro** to extract stress data at equilibrium after implantation
- Calculated **Hoffman's Number** from stress data and **automated** the process of **predicting failure** due to debonding

Analytical stress analysis of cantilever beam | Term project, Applied Elasticity July 2019 - Nov 2019

- Created **Python** library using **Jupyter Notebook** to transform differential equations to polar co-ordinate system
- solved partial differential equations using **SymPy** and **NumPy** to find stress distribution in cantilever beam

Localization and Path Planning using Evolutionary Algorithm | Term Project, Genetic Algorithm Jan 2018 - April 2018

- Combined grid based search with **Ant Colony Optimization** for **Path Planning** and implemented Virtual Simulation
- Exercised **Particle Swarm Optimization** to minimize error in **Indoor Localization** of robot by Wireless System Networks

COMPETITION/CONFERENCE

Source Code | IIT Kharagpur Kshitij 2018

- Participated in Source code a coding event where one have to guess the pattern of executable file and code for it

POSITIONS OF RESPONSIBILITY

Rajendra Prasad Hall Hardware Modeling Team | Captain Jan 2020 - March 2020

- Spearheaded a **team of 25 people** to build a **flood relief robot** which can provide food packets and life jackets
- Prepared a **budget** of **1.4 lakhs** containing cost of required components and other expenses approved by hall council

Chess Club, IIT Kharagpur | Head July 2018 - April 2019

- Lead a **team of 40 numbers** and participated in various tournaments at inter/intra college level
- Conducted Chess Summer Camp for **30 players** and Organised Fresher's Tournament and Open IIT Tournament

Gopali Youth Welfare Society | Executive member March 2017 - March 2018

- Participated in Yogdaan '18, an annual donation drive, raising highest ever in-house fund of **INR 3.19 Lakhs**
- Worked with a team of **50 members** for organizing the Annual Day function 'Aashayein' of Jagriti Vidya Mandir

Kharagpur RoboSoccer Students Group | Vice Captain March 2017 - July 2018

- Lead the mechanical team of KRSSG consist of **15 people**, responsible for design and development of SSL bot
- Conducted the **Code-O-Soccer**, a **strategic coding event** where soccer strategies are implemented on robots

AWARDS AND ACHIEVEMENTS

- **2016:** Secured an **AIR - 1559** in **JEE Advanced** and scored 203/360 in JEE Mains given by 1,300,000+ aspirants