



**Sachin Kumar**  
**Mechanical Engineering**  
**Indian Institute of Technology Bombay**

**200100140**  
**B.Tech.**  
**Gender: Male**  
**DOB: 22/10/2002**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	
Intermediate	CBSE	Shri Krishna Public School Indore	2020	90.20%
Matriculation	CBSE	Kendriya Vidyalaya No.1 Gwalior	2018	87.40%

## SCHOLASTIC ACHIEVEMENTS

- Awarded prestigious National Talent Search Examination (**NTSE**) scholarship by Govt. of India [’18]
- Recipient of **KVPY Fellowship** awarded by **Govt. of India** to **1500** out of **0.1 million** candidates [’20]
- Amongst the **top 1 percentile** of 0.14 Million in Pre Regional Mathematical Olympiad (**PRMO**) [’20]
- Cleared National Defence Academy (**NDA**) Examination conducted by **UPSC** [’20]
- Qualified the 1st stage of National Mathematics Talent Contest (**NMTC**) Examination [’20]

## KEY PROJECTS

### Virtual Assistant

June - July, 2021

*Institute Technical Summer project | ITC | IIT Bombay*

- Proposed the idea to **reduce typing** on smartphones and performing functions using intelligent virtual assistance
- Worked in a team of 4 members and learnt **Python, basics of HTML and Dart** for using Django and Flutter
- Acquired knowledge of **Natural Language Processing** (NLP concerned with the interactions between computers and human language) a part of **Machine Learning** for getting the useful keywords
- Developed an application using **pub.dev** (The official package repository for Dart and Flutter apps) in Android Studio as a Flutter project which perform actions based on our **Voice Commands**

### Data Encryption Program

ongoing, 2022

*Season of Code | Institute Technical Council | IIT Bombay*

- Leading a team of six members to build a website that can **Encrypt** a plain text using **Asymmetric Cryptography**
- Learnt some **Arithmetic Operation**, basics of Cryptography and mathematics of some **Encryption Algorithm**
- Developing a website using **HTML, CSS and JavaScript** for Encryption of plain text and Decryption of Cipher text

### Stock Prices prediction using Machine Learning

ongoing, 2022

*FinSearch | Finance Club | IIT Bombay*

- Working in a team of three members to **design a ML model** that can predict future prices of stocks
- Extensively read about **Time Series Forecasting**, it's application and its limitation in various cases
- Gained the basic knowledge of the **stock market** and different factors affecting the price chart of stocks

### Kirsch's Solution Validation

March - April, 2022

*Course Project | Prof. Krishna N Jonnalagadda | IIT Bombay*

- Worked in a team of four members to validate the Kirsch's solution using **Digital Image Correlation** Machine
- Observed the **Stress concentration field** of a plate with a hole of diameter  $2a$  in the Center
- Experimentally validated **Kirsch's Solution** for elastic stresses near the hole in an "infinitely large" thin plate

### Radio Controlled Plane

Oct, 2021

*Aeromodelling Club | Institute Technical Council | IIT Bombay*

- Lead a team of 4 members to design and build a **RC training aircraft** which can do aerobatics and gliding
- Learnt construct the **conceptual wing** and **Empennage design** by taking several different values of aspect ratio and surface area to accomplish maximum stability and low speed performance of the plane
- Gained the understanding of how an aircraft **acquires the lift** and overcomes all the drag forces

## TECHNICAL SKILLS

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<b>Programming</b>	C++, Python, Dart, HTML, CSS
<b>Development</b>	Flutter, Django, HTML
<b>Softwares &amp; Tools</b>	Pycharm, Android Studio, VS Code, LaTeX , Github, Abaqus, CNC Simulation

## CERTIFICATIONS

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### Finance for Non-Finance Professionals

July, 2022

Online Course | RICE University

- A course on **Financial valuation** and **Direct Cash Flow** (DCF) analysis authorized by Rice University

### Introduction to Data Analytics

June, 2022

Online Course | International Business Management (IBM)

- A online course on **Data ecosystem** and the **Fundamentals of data analysis** authorized by IBM

## POSITIONS OF RESPONSIBILITY

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### Campaign Coordinator | Abhyuday, IIT Bombay

Sep, 21 - March, 22

A Social Body with the vision to channelize the **youth** towards their **social responsibilities**

- Working in a team of **15+** volunteers to conduct online campaigns to bring out a change in the society
- Targeted **2000+** underprivileged students of **80+** schools under CCC ( **Career Counselling Campaign**)
- Contacted **10+** NGOs for executing **E-Masti ki Paathshala** - Learning Science with Fun campaign
- Contacted **10+** **Old Age Home** for conducting a Diwali visit for the elderly people
- Helped in curating the content for Career Counselling Campaign and **Masti ki Paathshala**
- Handled and supervised **9+** **content writing interns** involved in making of Free Career Counselling App

### Institute Technical Summer Project (ITSP) Mentor

ongoing, 2022

Institute Technical Council (ITC) | IIT Bombay

- Mentoring a team of four members to build a **GAMIFIED REWARD BASED DRIVING SYSTEM**
- Organised several meetings with team to discuss various issues and their potential solutions.
- Providing them the necessary reading materials and assisting them throughout the project

## COURSES UNDERTAKEN

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<b>Core</b>	Engineering Mechanics, Solid Mechanics, Thermodynamics, Fluid Mechanics, Strength of Materials, Mechanical Measurement
<b>Mathematics and Physics</b>	Calculus, Linear Algebra, Differential Equations, Introduction to Numerical Analysis, Quantum Physics and Application, Basics of Electricity and Magnetism
<b>Lab Courses</b>	Solid Mechanics lab, Fluid Mechanics lab, Manufacturing Practice lab
<b>Interdisciplinary Courses</b>	Engineering Graphics and Drawing, Computer Programming and Utilization, Organic and Inorganic Chemistry, Physical Chemistry, Biology, Economics

## EXTRACURRICULARS

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- Performed **Piloting**( honorific marchpast welcome) for Chief Guest on 72th Republic Day that is on 26 Jan 2021
- Successfully completed **Intro To App Development course** under Learner's Space UGAC, IIT Bombay
- Performed **Guard of Honour** for the National Flag with rifles on 75th Independence day that is on 15 Aug 2021
- Participated in **Fitness** and various other competitions in Battle of Companies (**BOC**) through NCC IITB
- Attended the one day **Firing session** held at Colaba Naval Base as a cadet of NCC IIT Bombay
- Completed 'B' certificate in NCC under the authority of the **Ministry of Defence, Govt. of India** (April '21)
- Completed ten days of **Annual Training Camp** of Unit 2 Maharashtra Engineers Regiment, which included rigorous physical training, drills, sports, cultural activities, and rifle shooting