



SHIVPRASAD KATHANE  
Metallurgical Engineering & Material Science  
Indian Institute of Technology Bombay  
Specialization: B Tech

180110076  
UG Second Year  
Male  
DOB: 10-05-2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	9.10
Intermediate/+2	CBSE	DELHI PUBLIC SCHOOL VADODARA	2018	96.80
Matriculation	CBSE	DELHI PUBLIC SCHOOL VADODARA	2016	10.00

Pursuing a **Minor** in Computer Science and Engineering and a **Minor** in Entrepreneurship, DSCE IITB

## SCHOLASTIC ACHIEVEMENTS

- Currently holding the **Department Rank 2** out of a batch of 101 undergraduate students (2019)
- Achieved 98.60 percentile in JEE Advanced (0.2M) & **99.94** percentile (**AIR 711**) in JEE Main (1.2M) (2018)
- **NTSE SCHOLAR**: Recipient of National Talent Search Scholarship awarded to meritorious students (top 1000) in the country by National Council of Educational Research and Training, New Delhi (2016)
- Nominated for the prestigious O P Jindal Engineering and Management Scholarship (**OPJEMS**) (2019)
- Secured **International Rank 1** with Certificate of Excellence and Zonal Gold Medal in Level 1 of International Mathematics Olympiad (IMO) conducted by Science Olympiad Foundation, New Delhi (2015)
- Secured **State Rank 1** (Gujarat) in National Talent Search Examination (NTSE) Stage 1 (2015)
- Received Certificate of Merit in the national level of Inter-DPS Science and Maths Talent Examination (2014)
- Honoured with a Silver Medal and a Champion's Trophy in Allen Champ for exemplary academic profile (2015)
- Scored **perfect 100/100** in **Informatics Practices** Course in AISSCE (2018)

## KEY PROJECTS

**High Energy Density MAGNETIC MATERIALS: Undergraduate Research Project** (Sep'19-Present)  
Guide: Prof. N.Venkataramani, MEMS IIT Bombay

- Investigating **Rare Earth Free Permanent Magnet Systems** and exploring their role in efficiency of motors
- Extensive analysis of research papers: magnetic properties, phase diagrams, alloy preparation techniques
- Procured the metals, determined purity, carried out **XRD** and **ICP-AES** analysis and interpreted the results
- Next: Computational analysis, sample preparation, phase transformation & microstructure & stability analysis

**PHOTOELASTICITY** | Mechanics of Materials | Guide: Prof. Aparna Singh, MEMS, IITB (Feb '20)

- Analysed Research Papers on photoelasticity and demonstrated its application to determine stresses in glass

**REUSING WASTE MILK BAGS** (Apr '19)  
Guide: Prof. Parag Bhargava, MEMS Course: Materials & Technology

- Investigated properties of LDPE, made containers, raincoat at 75% reduced cost using hot air gun, metal rollers
- Analyzed the processes and applications of **welding, pelletisation, injection molding and extrusion**

**TABBING APP** (May - July '19)  
Seasons of Code Summer Project Web and Coding Club, IIT Bombay

- Developed a platform for easier and accurate tabulation of scores and teams for debate tournaments
- Created the website in a **team of 3** using integrative knowledge of **Django, Python, CSS** and **HTML**
- Designed web pages, authentication interface, automated the matchups, rounds, reduced manual errors, efforts

**FIRST: Fast Innovation & Research in Science & Technology** (July '19 - Present)  
Guide: Prof. Anand Kusre, DSCE Course: Introduction to Entrepreneurship

- Team of 4 entrepreneurs solving the problem of unsafe driving due to tyre bursts or underperformance of tyres
- Considering innovative solutions like puncture-proof tyres, airless tyres, automated monitoring/warning systems
- Completed opportunity analysis, Market Research, UVP & BMC; Next: Customer Discovery & Validation

**P&G Brand Study** | Marketing Management | Guide: Prof. Arti Kalro, SJMSOM, IITB (July - Aug '19)

- Researched on **brand strategies**, applied **BAV** model, compared marketing strategies of HUL and P&G

**Bluetooth Controlled Racing Bot** (Aug '18)  
XLR8 Technical Competition Electronics & Robotics Club, IIT Bombay

- Designed the structure & determined the materials to maintain balance between agility and size/power
- Understood the circuit, soldered components to PCB & ensured car responds to controls via bluetooth

## PROFESSIONAL ACTIVITIES

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- Attended **Indian National Mathematics Olympiad Training Camp** for **top-30** rankers in RMO (2017)
- Completed 60% of Online Training on **Internet of Things** and **Machine Learning** from BOLT IOT (2019)
- Attended a Chai and Why? session by the **Tata Institute of Fundamental Research** on **crystalline materials**: explored the properties of crystals and performed experiments on the growth of crystals (2019)
- **Industrial Visit to ANTS Ceramics**: Analysed Conventional Processing & Shaping of Oxide Ceramics and investigated the manufacturing processes of labwares, furnaces, ceramic products and technologies used (2019)
- **Industrial Visit to Indian Rubber Manufacturers Research Association**: Investigated State-of-the-Art technologies and labs for Material Research & Tyre Testing and interacted with industry professionals (2019)
- Actively participating in discussions as a member of the Curious Community (IITB UG research enthusiasts)
- Attended **Deep Learning** & IOT Workshop and Machine Learning with Matlab course by **Mathworks**(2019)
- Coursera: Finished 80% coursework in Materials Data Science & Informatics, Nanotechnology & Nanosensors

Software Skills: MySql, Matlab, Autocad, Netbeans, Ms Office, R, C++, Java, HTML, Django, Python, Latex

## POSITIONS OF RESPONSIBILITY

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**JUNIOR DESIGN ENGINEER** | Materials (Civil) | *Team SHUNYA, IITB* (Feb '19 - Jan '20)

- Mission: Design houses with **net zero energy consumption** using energy efficient practices & technologies
- Responsible for **Materials Selection & Research**: Evaluating and comparing their properties & performance
- Focus on innovation, sustainability, thermal insulation & eco-parameters like LCA, C footprint, embodied E
- Carried out Market Research, Literature Review; attended seminars & workshops, recommended solutions

**JUNIOR DESIGN ENGINEER** | Suspension & Dynamics | *HYPERLOOP IITB* (Feb '20 - Present)

- Research & Design working Hyperloop prototypes for developing next generation transportation technologies
- Responsible for pod stability and braking mechanisms; simulations & design using COSMOS, SolidWorks

**VOLUNTEER** | Sustainable Social Development | *National Service Scheme, IITB* (July '18 - May '19)

- Devoted **80+ hours** towards community service including social campaigns creating a huge positive impact
- Taught sustainability concepts and conservation techniques to students of 2 BMC (government) schools

**COORDINATOR** | Events | *Entrepreneurship Cell, IITB* (Apr '19 - Feb '20)

- Ideated, coordinated & executed events (26000+ attendees, 700+ startups) to promote entrepreneurship
- **Mentored 3 teams** of 3 entrepreneurs each in aspects of pitching and BMC for their startup in EnB Buzz
- Successfully managed our new initiative R&D Conclave at E-Summit 2020 and handled organisers team

## COURSES UNDERTAKEN

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<b>Materials Science</b>	Materials and Technology, Structure of Materials, Thermodynamics of Materials**, Mechanics of Materials*, Transport Phenomena*, Theory of Machine and Machine Design*, Introduction to Electrical and Electronics Circuits**
<b>Maths/Science</b>	Calculus, Linear Algebra, Differential Equations, Quantum Physics and Application, Basics of Electricity and Magnetism, Physical Chemistry, Organic and Inorganic Chemistry, Biology**, Introduction to Numerical Analysis*
<b>Lab Courses</b>	Physics Lab**, Chemistry Lab, Engineering Graphics and Drawing, Mechanical Workshop Practice**, Experiments and Measurements Lab**, Electrical/Electronics Lab*, Metallography and Structural Characterization Lab*, Computation Lab*
<b>Others</b>	Computer Programming and Utilisation, Data Analysis and Interpretation**, Introduction to Machine Learning*, Quantum Information and Computing*, Marketing Management**, Introduction to Entrepreneurship, Economics**

\*\*Received perfect 10/10 grade \*ongoing, to be completed by April 2020

## EXTRACURRICULARS

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- **Gold Medallist** at UCMAS Academy and completed all 8 levels of Abacus with **99.16 percentage** (2010)
- Secured **First Runner-up** position in Inter-School Quiz organized by Association of British Scholars (2014)
- Secured **1<sup>st</sup> position** in **Spices of Nature** photography contest of NSS (Nature) IITB (2019)
- As an Organiser (Media), invited journalists & formulated press releases for E-Summit IITB (2019)
- Conferred with a Certificate of Merit in **Financial Literacy** under FLAME by India Infoline (IIFL) (2013)
- Participated in **EnB Buzz** competition in a **team of 3** and developed a **pitch deck** and the **Business Model Canvas** for a startup on ayurvedic cosmetics to solve the problems present in the business case study (2018)
- Olympiads: AIR 28 in UIEO, AIR 41 in UCO, International Rank 35 in NCO, International Rank 54 in NSO
- Participated in Cricket Tournaments at IITB, debates and dramas at school with experience in Visual Arts
- Participated in nationwide inter-school 'TCS IT Wiz' quiz competition by **Tata Consultancy Services**(2016)