Shivprasad Kathane | UG Second Year (B.Tech) | sgkathane182@gmail.com

Education

Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, CPI: 9.10 *(2018-2022)*
Pursuing a **Minor** in Computer Science and Engineering and a **Minor** in Entrepreneurship, DSCE IITB
Delhi Public School Vadodara (CBSE) | STD.X: 10 CGPA (2016) | STD.XII: 96.80% (2018)

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)*

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

MATHWORKS *(Oct - Nov '19)*

- Deep Learning Workshop: Object classification using pretrained model, IoT data aggregation, data visualisation
- ML Course: ML workflow; classification, regression, clustering & model improvement techniques with examples

FIRST: Fast Innovation & Research in Science & Technology *(Aug - Nov '19)*
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

MARKETING MANAGEMENT (Course) *(July - Aug '19)*
Guide: Prof. Arti Kalro & Prof. Dinesh Sharma, SJMSOM *IIT Bombay*

- Presented a study on rural markets: distribution strategies, customers & stakeholders with company examples
- P&G: Analysed brand profile, strategies, historical growth, BAV model, compared marketing tactics with HUL
- Analyzed 20+ cases of MNCs like Nike by digging insights into company's branding, pricing, segmentation

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

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**

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

- Attended **Indian National Mathematics Olympiad Training Camp** for **top-30** rankers in RMO *(2017)*
- 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)
- 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

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, Literarture 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

Materials Science	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**
Maths/Science	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*
Lab Courses	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*
Others	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

- **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 **1st 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)*