

# Shivprasad Kathane

Third Year Undergraduate  
Metallurgical Engineering & Materials Science  
Indian Institute of Technology Bombay

Hostel 9, IIT Bombay  
Mumbai, Maharashtra, India  
☎ +91-93263 41509  
✉ sgkathane182@gmail.com  
📁 shiv12spingo.github.io/



## Education

- 2018–2022 **Indian Institute of Technology Bombay, Mumbai, India.**  
Bachelor of Technology in Metallurgical Engineering and Materials Science  
Minor in Artificial Intelligence and Data Science and Minor in Entrepreneurship  
Department Rank 2 among a batch of 100+ UG students CPI: 9.18/10.00
- 2010–2018 **Delhi Public School Vadodara, Vadodara, India.**  
Secured AIR 2845 in JEE Advanced and AIR 711 in JEE Main  
All India Senior School Certificate Examination (CBSE XII 2018) 96.80%  
All India Secondary School Examination (CBSE X 2016) CGPA: 10/10

## Scholastic Achievements

- 2020 Nominated for the prestigious O P Jindal Engineering and Management Scholarship (OPJEMS)
- 2016 **NTSE SCHOLAR:** Recipient of scholarship awarded by NCERT to top 1000 meritorious students
- 2015 Secured **International Rank 1** in SOF's International Mathematics Olympiad
- 2015 Secured **State Rank 1** (Gujarat) in National Talent Search Examination (NTSE) Stage 1
- 2015 Honoured with a Silver Medal and a Champion's Trophy in Allen Champ for exemplary academic profile
- 2014 Received Certificate of Merit in the national level of Inter-DPS Science and Maths Talent Examination

## Professional Experience

- Jul'20– **Technology Scouting Intern** **AIRBUS Bangalore.**  
Aug'20 Guide: Mr. J. Stuhlberger (Vice President, Airbus Technology Scouting Network, Germany)
  - Analysed research papers on hydrogen storage technology & materials for aerospace applications
  - Presented a comparative analysis of technologies with recommendations based on Figures of Merit
- Jul'20– **Machine Learning Research Intern** **Coulomb AI Bangalore.**  
Aug'20 Guide: Khushboo Shrivastava (Founder & CEO, Coulomb AI)
  - Analysed research papers on ML techniques for battery SOC & SOH estimation and cycle life prediction
  - Performed data transformation using Numpy & Pandas and visualisation using Matplotlib in Jupyter
  - Built, trained, tested & evaluated Regression & CNN Models using Scikitlearn & Keras in Google Colab
- Feb'20– **Dynamics Engineer (Mechanical)** **HYPERLOOP IITB.**  
Present
  - Research & Design functional Hyperloop pod prototypes as part of a 50 member team
  - Responsible for pod stability and braking mechanisms: explore possibilities and consider trade offs
  - Design & simulation of brakes, LCM & EDW for regeneration and optimising for cost & energy efficiency
- Feb'19– **Junior Design Engineer (Materials)** **Team SHUNYA IITB.**  
Jan'20
  - Mission: Design net zero energy houses using energy efficient practices, technologies & materials
  - Executed Materials Selection & Research based on properties, performance & products for different components of house with emphasis on innovation, sustainability, modularity and thermal insulation
  - Performed market research, literature review; brainstormed on ideas & solutions, represented team at expos

## Key Projects

- Oct'19– **Magnetic Materials: UG Research Project,** *Prof. N Venkataramani, MEMS IITB.*  
Present
  - Exploring Rare Earth Free Permanent Magnet Systems to prepare a magnetic material with high energy density
  - Analysed research papers on magnetic properties, phase diagrams and preparation techniques with documentation
  - Procured the metals, determined purity, carried out XRD and ICP-AES analysis and interpreted the results
  - Received Certificate of Recognition for project work as part of In-Semester UG Research Program 2019
- Aug'18 **Bluetooth Controlled Racing Bot: XLR8,** *Electronics & Robotics Club IITB.*
  - Designed structure, determined materials, understood circuit & soldered components to PCB in a team of 4

- Apr '19 **Reusing Waste Milk Bags,** *Prof. Parag Bhargava, MEMS IITB.*
- Developed an eco-friendly raincoat from LDPE at 75% reduced cost using hot air gun & metal rollers
  - Analyzed properties of polymers and the processes: welding, pelletisation, injection molding & extrusion
- Apr'20– **2D Materials: Summer of Science,** *Maths & Physics Club IITB.*
- May'20
- Analysed research papers on 2D Materials with emphasis on graphene & energy storage
  - Documentation on structure, synthesis, properties, applications and products in the form of a report
  - Mentored a student in his SOS project topic Mechanics of Materials and helped him deliver a report
- Feb '20 **Photoelasticity: Term Paper Presentation,** *Prof. Aparna Singh, MEMS IITB.*
- Analysed research papers on photoelasticity: quantitative stress measurement, visualisation & interpretation
  - Investigated types of stresses in glass & demonstrated application of photoelasticity to determine stresses in glass
- May'19– **Tabbing App: Seasons of Code,** *Web & Coding Club IITB.*
- Jun'19
- Developed a platform for easier, accurate tabulation in debate tournaments using Python & HTML (Django)
  - Designed web pages & authentication interface; automated matchups & rounds in PyCharm in a team of 3
- Aug'19– **P&G Brand Study,** *Prof. Arti Kalro, SJMSOM IITB.*
- Sep'19
- Analysed brand profile and strategies of P&G and delivered a presentation in a team of 6 members
  - Assessed historical growth & market performance, applied BAV model & did comparative analysis with HUL

## Professional Activities

- 2020 Participated in the open access **BCG Strategy Consulting** Virtual Experience Program with InsideSherpa  
Modules completed: Market Research, Data Analysis, Understanding Consumer Needs, Client Recommendation
- 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 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; Investigated the manufacturing processes of labwares, furnaces, ceramic products and technologies used
- 2019 Attended Deep Learning Workshop by **Mathworks**: Object classification, IoT data aggregation & visualisation
- 2017 Attended Indian National Mathematics Olympiad Training Camp for top-30 rankers in RMO

Software Skills: MySql, Matlab, Autocad, MS Office, R, C++, Java, HTML, Python, Colab, Jupyter, VS Code

## Organisational Experience

- Apr'19– **Coordinator (Events)** *Entrepreneurship Cell IITB.*
- Feb'20
- Ideated, coordinated & executed events (26000+ attendees, 700+ startups) to promote entrepreneurship
  - Successfully managed our new initiative R&D Conclave at E-Summit 2020 and led organisers team
  - Mentored 3 teams of 3 entrepreneurs each in aspects of pitching and BMC for their startup in EnB Buzz
- July'18– **Volunteer (Sustainable Social Development)** *National Service Scheme IITB.*
- 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

## Key Courses

- Materials Science Materials & Technology, Structure of Materials, Thermodynamics of Materials, Mechanical Behaviour of Materials, Kinetics of Processes, Mechanics of Materials, Science & Technology of Thin Films, Phase Transformations, Transport Phenomena, Metallography & Structural Characterisation, Theory of Machines & Machine Design
- Others Data Analysis & Interpretation, Programming for Data Science, Introduction to Machine Learning, Economics, Engineering Graphics & Drawing, Numerical Analysis, Computer Programming & Utilisation, Electricity & Magnetism

## Extracurriculars

- 2010 **Gold Medallist** at UCMAS Academy and completed all 8 levels of Abacus with **99.16%**
- 2019 As an Organiser (Media), invited journalists & formulated press releases for E-Summit IITB
- 2019 Secured **1<sup>st</sup> position** in Spices of Nature photography contest of NSS (Nature) IITB
- 2018 EnB Buzz Competition: Developed pitch deck & Business Model Canvas for a startup to solve case study
- 2014 Secured **First Runner-up** position in Inter-School Quiz organized by Association of British Scholars
- 2013 Conferred with a Certificate of Merit in **Financial Literacy** under FLAME by India Infoline (IIFL)
- Participated in cricket tournaments at IITB, debates and dramas at school with experience in Visual Arts