Pratiek Sonare | **22B2440**
Metallurgical Engineering and Materials Science | **B.Tech.**
Indian Institute of Technology Bombay | **Gender: Male**
DOB: 16/12/2004

Examination	University	Institute	Year
Graduation	IIT Bombay	IIT Bombay	2026

Pursuing **Honors** in **Metallurgical Engineering and Materials Science** offered by **MEMS**, IIT Bombay

Scholastic Achievements

- Achieved a **99.69** percentile among **1.5+ million** candidates in the *Joint Entrance Examination - Mains* *(2022)*
- Among the top **4.8%** amongst the **0.15+ million** candidates in *Joint Entrance Examination - Advanced* *(2022)*
- Acquired a certificate of merit for being in top **1%** by scoring 100 in Mathematics in *CBSE Board Examination* *(2020)*

Positions of Responsibility

Institute Sports Convener | *IIT Bombay Sports* *(Apr '22 - Present)*
*Part of a **36** member team selected from more than **200+** candidates to conduct all sporting activities at IIT Bombay*

- Ideated and executed **Freshie La Vista**, the freshmen send-off event at IIT Bombay, catering to about **1300+** freshers
- Conceptualized **General Championship Opening Ceremony** which witnessed **300+** footfall from **10+** hostels
- Revamped the Instagram Page of Cricket Club, IIT Bombay by launching **3** campaigns and increasing outreach by **30%**
- Successfully conducted the first ever **Freshers Cricket League**, a 3-day tournament with **80+** freshman players

Business Coordinator | *Team Rakshak, IIT Bombay* *(Apr '22 - Present)*
*Collaborating with a team of **50+** students working on **Unmanned Aerial Vehicles** for search and rescue operations*

- Developing strategic **marketing** initiatives to reach sponsors through extensive market research and media avenues
- Facilitating the team for coordinating the design and structure of the pitch desk and cultivating **sponsorship** relationships

Marketing Coordinator | *56th Annual Inter IIT Sports Meet* *(Dec '23)*
*India's biggest inter-collegiate Sporting Event | **23** IITs across India | **18k+** attendees*

- Coordinating **30+** events in 6 different sports disciplines for 6 days, engaging 90+ teams of students from 23 IITs
- Secured **3+** sponsorship deals for the Inter IIT Annual Sports Meet by leveraging strategic **email marketing** campaign

Corporate Relations Coordinator | *E-Cell, IIT Bombay* *(Dec '23 - Jan '24)*
*Asia's Largest Entrepreneurship promoting student body with **90+** members — Patronage by **UNESCO** & **NEN***

- Pitched and negotiated deals with **10+** VC Firms and startup mentors to provide finest mentoring for Eureka! '24
- Executed **Internship and Job Fair** by serving as a POC for **6** start-up ventures looking for interns at E-Summit '24

Key Projects

LSTM Based Stock Market Prediction | *WiDS | Analytics Club, IIT Bombay* *(Jan '24)*
*Used **TensorFlow** (Python) to build a LSTM based Time Series Forecasting Model for Amazon Stock Price Prediction*

- Pre-processed the data to a balanced one having a **50:50** ratio using window sliding algorithm and removing outliers
- Analyzed, applied and compared different **LSTM Neural-Network** architectures for best possible predictive accuracy
- Hypertuned the parameters to restrict the model to **6.24** MSE and **4.86** MAE on the predicted Amazon stock price

Equity Research Project | *Equity Research Competition | Finance Club, IIT Bombay* *(Aug '23 - Nov '23)*
*Researched in a team of 2 to **quantitatively** and **qualitatively** analyse Indigo Airlines for stock price forecasting*

- Evaluated the Indian Aviation Industry to use the **'Bottom Up'** approach to select a stock 'Interglobe Aviation Ltd.'
- Analysed **ratios** (EPS, Quick Ratio, Current Ratio, P/E) and other technical indicators to strategically select a stock within the current market conditions in the aviation industry in India and built a **DCF model** to predict intrinsic value
- Researched Indigo's **business model**, government policies and conducted **SWOT Analysis** to forecast price trend

Pitch Deck: Entrepreneurship Project | *Course Project | Guide: Prof. Anu Narasimhan* *(Jun '23)*
*Conducted extensive **market research** and competitive analysis in a team of **5** to evaluate Zostel's unique strengths*

- Dissected Zostel's problem statement, **value proposition**, market segmentation, **industry overview**, revenue and profit streams to carefully determine Zostel's components of growth and future prospects in India and worldwide
- Judged the **key social** and **economic determinants** that led to Zostel's success in the Indian hospitality industry
- Conceptualized and presented a **pitch deck** on Zostel, highlighting all findings, in front of an audience of **150+** students

Business Model Canvas: EnB Buzz | *Entrepreneurship & Business Club, IIT Bombay (Dec '22 - Feb '23)*
*Worked in a team of **3** to generate a solution to the problem – "Solving social media fatigue" through product development*

- Built a **Business Model Canvas** and researched the various socio-economical factors that affect social media usage
- Utilized **analytics** to evaluate the startup's viability for creating a BMC that fully outlined the start-up's profit prospects
- Presented and **pitched** the business idea in front of an expert panel of **3**, elaborating on the competitive market dynamics

Fabrication of a Low-Cost Spin Coater | *Reactorius | ChemTL, IIT Bombay (Oct '23 - Present)*
*Working in a team of **4** to construct a budget-friendly Arduino-driven Spin Coater for efficient thin film fabrication*

- **Disassembled** a discarded Hard Disk (HDD) to effectively use the BLDC Motor inside it for construction of a Spin Coater, that is calibrated and controlled using an electronic speed controller (ESC) for thin film fabrication and study
- Utilized **AutoCAD** Fusion 360 to perform 3D modeling of the exterior body, chuck, holder and initial prototype of the spin coater, while concentrating on the machine's design, structural stability, and simplicity of assembly
- Prepared film data samples for analysis by effectively **coating PDMS thin films** on glass at different spin speeds
- Employed **ImageJ** software to evaluate relationship between film thickness and rotational velocity of the Spin Coater

Line Following Robot | *Course Project | Guide: Prof. Tanmay K. Bhandakkar (Nov '22 - Feb '23)*
Worked in a team of 6 to develop a line-following robot with Wi-Fi controlled manual mechanical arm

- Executed key stages of line-follower robot development including **project timeline** creation, **CAD** designing of the mechanical arm, robot chassis and completed wiring and Arduino programming to carry out pick up-and-drop mechanism
- Integrated line-following robot with **ESP32** Wi-Fi module, effectively creating a web server to manually control the **servo motors** to guide the mechanical robotic arm towards performing pick up actions when approaching an object
- Enhanced **code optimization** and calibrated sensors for more precise robot path tracing

Arduino-based Home Security System | *Course Project | Guide: Prof. Tanushree C. (Aug '23 - Nov '23)*
An home security system based on Arduino, encompassing an automated window alarm and phone alert system

- **Calibrated** and utilized infrared, ultrasonic sensors with the Arduino framework, to detect motion from nearby objects
- Integrated a **SONAR** using Arduino and **Processing** (Java) to display detection of objects within a 10-50cm range
- Connected an alarm system with a buzzer and a **Telegram API** to receive instant alerts upon detecting a human

Metal Sculpture: Assembly Welding | *Course Project | Guide: Prof. Parag Bhargava (Aug '23 - Nov '23)*
Built a copy of the 'Metals and Materials Association, IIT Bombay' logo using waste metal found inside IITB campus

- Built a replica logo using **cycle and metal scrap** found inside IIT Bombay campus through different welding techniques
- Conducted **comprehensive analysis** and in-depth research on various welding techniques essential for the fusion of scrap iron and steel, to finally use **Plasma Arc Welding** for the fabrication of a metal MMA, IITB replica logo sculpture

Technical Skills

Languages and Softwares	C++, Power BI, MATLAB, LaTeX, Arduino , HTML , Excel, ThermoCalc
Python Libraries	NumPy , Pandas , Scikit-Learn , PyTorch , TensorFlow , Keras

Extracurriculars

Sports	• Selected for highly competitive **Inter IIT Cricket Camp** consisting of the best **23** players of the Institute • Selected for U12 **Mumbai Cricket Association** Probable Squad out of **500+** participants across Mumbai • Played cricket at district level having represented Navi Mumbai Division in U12-U14 Summer Camps • Won Navi Mumbai Sports Association (NMSA), DSO interschool tournaments as part of 15 member squad
Misc.	• Successfully completed the **Financial Modelling Bootcamp** by Finance Club, IIT Bombay learning about accounting, financial statements, valuation ratios, DCF modelling and analysis • **Mentored** a team of **3** students with ideation, BMC presentation for EnB Buzz 2023 held by E-Cell IITB • Currently mentoring 2 **Grade XII** students for JEE Mains & JEE Advanced year-long preparation • Volunteered in conducting and completed the Push India Push Challenge 2023, Fitistan India - IIT Bombay • Managed registration process in Independence Day Biathlon '23 conducted by SOM, IIT Bombay