

Pursuing **minor** in **Management** Course under **Shailesh J. Mehta School of Management**, IIT Bombay

Scholastic Achievements

- Secured rank in **top 2 percent** students amongst 1.55 lakh aspirants in **JEE-Advanced** [2022]
- Secured rank in **top 0.5 percent** students amongst 10.6 lakh aspirants in **JEE-Mains** [2022]

Key Projects

CPU Architecture | Course Project

[Apr'24 - May'24]

Prof. Virendra Singh | EE309 - Microprocessors

- Developed and implemented IITB-RISC-23, a high-performance **16-bit processor** with a **6-stage pipeline** and **8 registers**, optimized through advanced hazard mitigation and efficient instruction execution
- Developed a comprehensive **instruction set architecture** for IITB-RISC-23, including 14 instructions across three **machine-code formats**: R-type, I-type, and J-type, enabling efficient execution of operations
- Integrated **forwarding mechanisms** to enhance pipeline efficiency and optimize processor performance

Digital Circuits Lab | Course Project

[Aug'23 - Nov'23]

Prof. Siddharth Tallur | EE214 - Digital Circuits Lab

- Employed a **Finite State Machine** driven string recognition system on the **Xen10 development board**, detecting a specific word within a stream of input characters and displaying the result on an **LCD**
- Implemented **4-bit ALU** capable of computing addition, concatenation, bit-wise XOR, and multiply by 2 operations, simulated the design using **ModelSim** and tested the design on hardware using **scan-chain**

Analog Lab | Course Project

[Jan'24 - Apr'24]

Prof. Anil Kottantharayil | EE230 - Analog Lab

- Designed and built **various analog circuits**: amplifiers, Schmitt triggers, rectifiers, oscillators, and filters
- Constructed **MOSFET circuits** and current mirrors, gaining hands-on semiconductor device experience
- Designed and constructed both an **instrumentation amplifier** and a **notch filter** to develop an **ECG** (electrocardiogram) amplifier, a device capable of reading the electric signals generated by the heart

Line Following Bot | Course Project

[Feb'23]

Prof. Joseph John | MS101 - Makerspace

- Developed a line-following robot with **IR sensors**, an **LM298** motor driver, and an **Arduino Uno R3**
- Achieved **autonomous Line tracking** and simultaneous black line detection using IR sensors in the bot
- Incorporated obstacle detection via **ultrasonic sensor**, allowing the robot to adeptly **pick up objects** using the gear-based system and precisely **deliver** them to locations identified by IR sensors as black

Data Structure & Algorithms | Maths and Physics Club, IIT Bombay

[May'24 - Jul'24]

Summer of Science 2024

- Studied the **fundamental data structures** such as arrays, linked lists, stacks, queues, trees, and graphs
- Explored the **algorithmic techniques** including sorting, searching, recursion, and dynamic programming
- Solved challenging problems on **LeetCode**, optimizing the code for both **Time and Space complexity**

AI based Financial Advisor | DSSE, IIT Bombay

[Aug'23 - Nov'23]

Prof. Anuradha Narasimhan | ENT-603 - Introduction to Entrepreneurship

- Explored various facets of entrepreneurship, and as a part of a **six-member** team, conceived an **innovative idea**, and created a compelling idea presentation comprising the addressed problem and possible solution
- Researched the **customer segment** and developed interview **questionnaires** with **project hypotheses**
- Conducted **20+ interviews** to validate our hypothesis and explore its **financial aspects** and **growth**

Business Report of Corporate House | Course Project

[May'23 - Jul'23]

Prof. Ashish Pandey | SOM101 - Introduction to Management

- Strategically placed **businesses, products, and services** within the framework of the **GE 3x3 matrix**
- Skillfully aligned **Generic Strategies** with the offerings and companies for effective market positioning
- Examined the **Organizational Design** of the company considering factors such as structure and roles

Positions of Responsibility

Maintenance Councillor | Hostel-3, IIT Bombay

[May'24 - Present]

Representative of Hostel 3 in Institute Maintenance Council with the annual budget of **1 million**

- Led team of 4 **maintenance secretaries** and **15+ support staff** to execute the infrastructural overhauls
- Serving as a liaison between over **450+ students** and **higher institute authorities** to ensure the provision of top-notch facilities and improve the standard of living within the hostel
- Installed **seating benches** in the recreational area and developed plans to install the **drainage covers**

Chief Secretary | Electrical Engineering Student's Association

[Jun'24 - Present]

Co-led a team of **12 members** catering to the interests of **1200+ students, 40+ professors, and Alumni**

- Organized the **interviews** for **50+ students** for the EESA Council selection, ensuring an efficient process
- Managed the **Graduation valedictory** and organized an **eSports** event with **500+** student participants
- Engaged in the planning of significant events, including the **traditional day** and **department trip**

Events Coordinator | Mood Indigo'23, IIT Bombay

[May'23 - Dec'23]

Asia's Largest Cultural Fest with an annual footfall of **1,40,000+** and comprising **240+ events**

- Worked with the team of **150+ members** in ideation of the fest and contributed in managing **20+ events**
- Managed the seamless coordination of various **panels, stand-ups, and performances** featuring renowned artists, effectively engaging a large student audience, ensuring flawless and on-time execution of the events
- Engaged and negotiated with diverse **national and international artists** to headline at the Mood Indigo, demonstrating adept management and seamless execution of tailored events for their performances

Technical Skills

Languages:

C | C++ | MySQL | L^AT_EX | VHDL | Assembly | Embedded C

Software:

Arduino IDE | Quartus | Canva | AutoDesk Fusion 360 | LTSpice

Courses Undertaken

Electrical Engg	Digital Systems Signal Processing Analog Circuits Power Engineering Control Systems Microprocessors Electronic Devices and Circuits Communication Systems* EM Waves*
Computer Science	Computer Programming and Utilization Artificial Intelligence and Data Science*
Others	Linear Algebra Differential Equation Probability & Random Processes Introduction to Classical Physics Introduction to Quantum Physics Differential Equations Calculus Makerspace Economics Introduction to Entrepreneurship Operations Management

*Courses to be completed by Nov'2024

Extracurricular Activities

- Completed a year-long training program in **Cricket** under National Sports Organization (**NSO**) [2023]
- Won **Gold** medal as a part of the 12-member team in the inter-hostel GC in **Kho-Kho** [2023]
- Participated as a member of the 15-member **Cricket** and **Hockey** teams in the inter-hostel GC [2023]
- Contributed to securing the **first position** at **5km Marathon** in the inter-hostel Sports GC [2023]
- Represented IIT Bombay as a part of 12 member **Kabaddi** team at **Aavhan'22-23** [2023]
- Served as the **Sports Secretary** of the hostel, collaborating with a team of **4+ students** to organize multiple Intra-hostel sports tournaments and collectively enhance the sporting culture of hostel [2023]
- Worked as an **Organiser** in Mood Indigo'22 and helped in managing **4+ events** [2022]
- Participated in **No Tobacco Campaigning Parade** and many **cleanliness drives** in school [2020]
- Mentored **150+** high school JEE Mains and Advanced aspirants in various coaching institutes [2023]