

Avinash Kumar Singh Aerospace Engineering Indian Institute of Technology, Bombay 180010017 B.Tech. Gender: Male DOB: 01-01-2000

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2022	6.55
Intermediate	CBSE	SHPS Banpurwa	2017	89.60%
Matriculation	CBSE	SHPS Banpurwa	2015	10

SCHOLASTIC ACHIEVEMENTS _____

- Achieved **98.50 percentile** in **JEE Main** examination, among over 1.14 million candidates (2018)
- Secured 97.99 percentile in JEE Advanced examination, among 0.15 million candidates (2018)
- Selected to pursue Remote sensing and Image Processing (CSRE Dept.) as a **Minor** course (2019)
- Pursued the course, **Understanding Design**, as a **minor** under the Industrial Design Centre (2020)

KEY PROJECTS UNDERTAKEN _____

Data Analysis of IPL Dataset | Data Analysis & Interpretation | Course Project (Apr '19)
Project Guide: Prof. Prabhu Ramachandran, Aerospace Engineering Department, IIT Bombay

- Analyzed IPL dataset of several years by using various Python libraries like Matplotlib & NumPy
- Used **Pandas** library to scrape data from various sources and **predicted the winner** of a particular season by analysing data of various parameters such as Net run rate of a team at a particular stage
- Introduced the concept of **Luck Index** in predicting the chance of a particular team to reach the finals by analysing various parameters, such as total runs scored by a batsman on the no balls delivered

Optimal Path Determination in a Museum | AE 755 | Course Project (Jan '21 - Apr '21) Project Guide: Prof. Abhijit Gogulapati, Aerospace Engineering Department, IIT Bombay

- Collaborated with 7 peers and built an algorithm that will give the optimal path to view the museum exhibits in minimum possible time along with maximum satisfaction based on user preferences
- Visited a nearby museum to collect parameters such as actual dimensions of a particular room, prepared a distance matrix, used it to calculate the time & distance required to traverse through rooms
- Used two different methods of optimization, **Dynamic programming** and **Ant colony method of optimization**, and also **benchmarked** both the algorithms with an already present **in-built Python library function** and found that **results from both the algorithms were very close** to each other and also matching with the predicted path by the in-built library function code used for benchmarking
- Individually analysed the accuracy, computational expense, execution time and convergence of both the algorithms and did a comparative analysis and drawn multiple observations such as Ant colony method takes precedence for computational expenses and convergence

Remote Controlled Bot Project | Electronics & Robotics Club, IIT Bombay (Aug '18)

- Built an App controlled four wheeler bot capable of showing atleast two degrees of freedom in space
- Used **ATtiny micro controller** to program the movement of the bot and sync it with the application on the mobile phone using a **bluetooth module** and Lead Acid battery was used to power the bot
- Competed in the **XLR8** event conducted by the Student Technical Activities body using the bot and succeeded in completing all the tasks such as **rotating disc**, **spiral staircase and marble dash**

Shunya House Project | Team Shunya, IIT Bombay

(Feb '19 - Mar '20)

- Worked in a **team** comprising of **50**+ engineering and architecture students, guided by **9**+ professors
- Conceptualized in building a **solar-powered house** incorporated with the root principles of sustainable existence with the vision to sustainably meet the growing demand for **urban housing** in India
- Brainstormed in the **ideation of core concept** laying out the foundation of new Team Shunya house

POSITIONS OF RESPONSIBILTIY _____

Department Head | National Service Scheme, IIT Bombay

(April '20 - Mar '21)

NSS is the largest student volunteer body working in the field of social service in IIT Bombay

- Headed a two-tier team of Nine Activity Associates and 100+ volunteers for the community service
- Responsible for grading 100+ volunteers for two compulsory freshmen courses, NOCS01 & NOCS02
- Supervised the YouTube channel, "Tarang", & boosted the channel's subscriber count by 30%
- Handled the department blog page, Parivartan, and spread social awareness by releasing various blogs
- Organised an intriguing series of online competitions and social hackathons, Flare, during the pandemic of COVID-19 with the themes such as Earth after Corona and Musings in Quarantine

Coordinator, Food & Beverages | Mood Indigo, IIT Bombay

(Sep '19 - Dec '19)

Asia's Largest College Cultural Festival | Footfall: 146,000 | 240 events | 1700+ colleges

- Dealt and negotiated with 10+ food brands to generate the sponsorship worth INR 3 Lakh
- Led a team of 20+ organizers catering to food and beverage requirements of volunteers, judges for competitions, and celebrities at 10+ venues across the four-day festival at the entire institute campus
- Ideated the set up of 3 food courts at different locations in the institute by collaborating with over 25 food and beverage brands to cater competition participants and the visitors at the college fest

Activity Associate | National Service Scheme, IIT Bombay

(April '19 - Mar '20)

NSS is the largest student volunteer body working in the field of social service in IIT Bombay

- With a team of 9 members, mentored 90+ volunteers for their sustainable & social development
- ullet Handled YouTube channel Tarang, made it more content-driven, accounting for 50% m-o-m growth
- Executed visits in 15+ BMC schools & nearby NGOs to inculcate the idea of sustainability & organised the event, Eco-Friendly Ganesha, to promote awareness while celebrating the festival
- Involved and directed the volunteers in several donation campaigns like Cloth Collection Campaign and collected around 4000+ kg & donated those to several NGOs & many other needy ones
- **Directed and scripted** the street play, performed every year by the NSS volunteers on Republic Day, highlighting the ongoing issues related to **mental health** of students & provided plausible solutions

EXTRA CURRICULAR ACTIVITIES ____

Social	 Volunteered for the National Service Scheme, IIT Bombay and spent 80+ hours volunteering under the Sustainable Social Development subdivision with the vision of promoting sustainability in our common daily life practices (May '18 - Apr '19) Volunteered for the National Innovation Club to educate 50+ farmers and 100+ 		
	school students about the ill irrigation practices in the district of Talegaon; spreading awareness about scientific methods of farm watering techniques (Jul '18 - Dec '18)		
Cultural	 Represented Hostel-3 in Arcade Street Play to spread awareness about Women Empowerment in society and also received a special mention from the judges (Oct'18) Performed in Street Play General Championship, Organised by IIT Bombay culturals, to represent Hostel-3 & secured Second Position among all other hostels (Jan'19) Active participant in Gyrations(Annual inter hostel dance championship) (Oct'19) 		
Misc.	 Presented business ideas as a part of weeklong EnB Buzz Competition organized by Entrepreneurship and Business Club of Entrepreneurship Cell, IIT Bombay (Aug'18) As a part of the Hostel-3 Crossy team, ran 5 kilometres and secured First position among all other hostels in Crossy General Championship organized by IITB sports (Oct'19) Played in Hostel-3 Cricket League and was a member of the Runner-up team (Feb' 20) 		

TECHNICAL SKILLS

Software
Programming & OS
Other tools

MATLAB, AutoCAD, IATEX C/C++, Python, Windows MySQL, HTML