



Nautatava Navlakha
Civil Engineering
Indian Institute of Technology Bombay

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B.Tech.
Male
DOB: 20/11/1998

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	8.05

- Pursuing a **Minor Degree** in **Computer Science and Engineering**

Internships

Summer Associate | Finmechanics India Pvt. Ltd

[May '19 – Jul'19]

Automating cross-asset platform for trade pricing, risk, compliance, and processing

- Received a **Pre-Placement Offer** for exceptional performance over the course of internship as a summer associate
- Improved the core part of the product - "bond master engine" by making it user-friendly to access 105 features on the run while taking care not to break already running application and other dependencies over the module
- Developed Bond Master template from scratch using ExtJS; API written in **Java** with **Spring, Hibernate and Hazelcast**
- Created **self-updating views** from MySQL tables for UCM integration and better data visualization from the backend
- Validated the CDS market portfolio using first-principles and performed simulations to ensure robustness taking into consideration **ISDA market standards** and verified the obtained results with **Markit Calculator** given by ISDA

MERN Stack Developer | Skillate Industries Pvt. Ltd.

[May '18 – Jul'18]

A job-matching platform for enterprises to make the recruitment process hassle-free using artificial intelligence

- Implemented **single page progressive web application** using React JS which fetches data from API dynamically
- Integrated Google Analytics, Google Jobs and SEO into the web-app to increase the web-reach of the application
- Used **Server-Side Rendering** and **service-worker** for faster loading times and offline functioning of job applications
- Built the Landing page from scratch using ExpressJs, Jade Templating Engine with **sprites** for better performance

SEO analyst | Toppr Learning | Haygot Education Pvt. Ltd.

[Dec '17 – Jan'18]

An online practice platform helping students prepare for IIT JEE, PMT, school boards, and other competitive exams

- Studied keywords, competitors, backlinks, content using tools like **Google Webmasters, Ahrefs, and SEOquake** to implement effective SEO solutions from scratch; also ensured, changes are worked upon by the content team
- Measures taken on the analysis report led to an increase in as much as **50% organic traffic** on webpages in 20 days

Technical Skills

- **Programming Languages** C/C++, Java (OOP, Android Studio), SQL, Python, Bash, MATLAB
- **Web Development** HTML, CSS, JavaScript (Vanilla, Angular, React, Express), MongoDB, Pug

Projects Undertaken

Bernoulli Random Forests

[Apr '19]

Machine Learning course project | Prof. Biplab Banerjee

- Wrote a python program to deliver proof of concept of the paper: Bernoulli Random Forests: Closing the Gap between Theoretical Consistency and Empirical Soundness, thus checking feasibility and **establish practical results**
- Found the average accuracy with a difference of just **1%** along with giving low time complexities from competition

Transportation Surveys App

[Mar '19]

Transportation Engineering course project | Prof. Tom Matthews

- Designed an android app with Django backend for a **3-tier** surveying model - Administrator, Manager, Surveyor
- Manager can log in to the backend system to change the set of questions from the options provided by the **admin**
- **Surveyors** login to the app for starting their survey tasks as given by their respective managers. The responses are validated and uploaded on a server where admin/head can download the responses for inspection as a spreadsheet
- Equipped the app with **location detection Geocode APIs** to replace the traditional approach of pen-paper based survey with faster auto-fillable digital survey methodology; Also maintains a count of the number of surveys taken
- Used the app model to acquire and find studying trends of 117 students from different academic programs

Internship Data Scrapper

[July '18]

Self-project

- Scraped data from institute internship blog and explored the data for internships company trends at IIT Bombay
- Fact checked and corrected data using excel, used pie charts and line plots for visual representations

Distance Vector Routing

[Oct '17]

Computer Networks course project | Prof. Mythili Vutukru

- Used **Bellman-Ford algorithm** to find the shortest distances between any two points considering all possible paths
- Implemented the algorithm for finding routing table in C++ using maps, graphs and Standard Template Library (STL)

TCP Analysis

[Sep '17]

Computer Networks course project | Prof. Mythili Vutukru

- Analyzed **algorithm of congestion control** for Reno-TCP to transfer packets in least possible time using NS-3 & python
- Generated report with depicting the behavior of TCP graphically under various possible load patterns

Key to value Server

[Aug '17]

Computer Networks course project | Prof. Mythili Vutukru

- Programmed a server using **C++** which can fetch, put or delete a key with managing multiple clients simultaneously
- Designed the program to store the in a **shared database** after doing checks to avoid consistency errors

Positions of Responsibility

Institute System Administrator | IIT Bombay

[Apr '19 – Present]

Interface between Computer Center and Hostel system administrators. Also responsible for maintenance of gymkhana servers

- Automated room allotment system by developing python scripts to allocate **1100+ freshers** based on given rules
- One of the two students overseeing the institute-wide router and internet **security to prevent cyber-attacks**
- Implemented **Disk mirroring** with ZFS and started services for weekly backups of storage for easy recovery in any event of failure; maintained almost **0% downtime** even in case of **hardware failure and replacement**
- Improved the efficiency of servers by **40%** using containers and upgrading the server's kernel to Proxmox 5
- Part of a 3-member Election Committee developing and implementing the required infrastructure for polling

Department Academic Student Mentor | Civil Engineering

[Apr '18 – Present]

Part of a 24-member team selected for improving the academic atmosphere inside the campus

- Responsible for **guiding students** facing extreme academic difficulties through 1-to-1 counseling taking regular feedbacks, providing counsel for holistic development to overcome emotional, social, and academic problems.
- Reselected taking into consideration the **excellent performance in mentorship** for the previous academic year

Department Head | Web and Finance | National Service Scheme

[Apr '18 – Mar'19]

NSS is the largest student volunteer body of IITB, serving >100K people nationwide via public welfare activities

- Designed a new website for NSS and got a perfect audit score of 100 for SEO, performance as well as best practices on every page. Audits done using Google Lighthouse. Analytics reports proved a y-o-y user bump of **106.3%**
- Working in a core team of 13 to facilitate bridging among sections of society through social service
- Ideated inventory for NSS so to make things available at convenience when needed and reduce costs
- Handling a budget of more than **1 Lakh INR** ensuring minimal financial issues during execution of activities

Activity Associate | Events | National Service Scheme

[Apr '17 – Apr'18]

NSS is the largest student volunteer body of IITB, serving >100K people nationwide via public welfare activities

- Part of a 4-membered team responsible for the **ideation and execution** of initiatives of the department like Cloth Collection Campaign, Meals of content, (L)earn a living, while mentoring 40+ freshmen. Architected the content for Invisible Humans, an initiative by NSS, IIT Bombay to bring light upon the unheard stories of people
- **Proposed and executed new activities** to sensitize the volunteers and find solutions to problems faced by the people living in Orphanage and Old-age homes all over Mumbai
- Helped increase the social media presence of NSS IITB through activities like -
 - **Teacher's Day Video:** A special video which conveys the importance of teachers in our lives
 - **Artistic Impact:** A nationwide socio-art contest; participants from 15 cities from all over India

Scholastic and Extra-Curricular Activities

Culturals	<ul style="list-style-type: none">• Bagged the second runner up in logo design in Freshmen competition "Freshiezza" [16]• Made a science fiction movie CODEBREAKER in a team of 5. Fully funded by institute [16]
Social	<ul style="list-style-type: none">• Co-organised "CURED"- PAN India Social Initiative spreading diabetes awareness in 50+ cities [17]• Completed 80+ hours of community service such as teaching in NGO's as NSS volunteer [16]
Scholastic	<ul style="list-style-type: none">• Secured 99.84 percentile in JEE Mains and 99.05 percentile in JEE Advanced [16]• Awarded the NSTSE scholarship 3 times with AIR 114 and State rank 4 in 2016 [12, '13, '16]• Attained scholarship for two years in the Maharashtra Talent Search Exam [MTSE], awarded special prize in pre-matric [12, '13]
Technical	<ul style="list-style-type: none">• Complete ideation, designing, and programming for the Techfest Android App using Android studio. Released on Play Store with current user ratings of 4.9 out of 5 stars. Also designed website counterpart for viewing events without the application [17]• Spearheaded a team of 4 to make a compact bot controlled by an android app via Bluetooth [17]• Analyzed working of Super Control Beyblades by verifying the underlying principles [17]