



**Nikhil Tiwari**  
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**Indian Institute of Technology Bombay**

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**B.Tech.**  
**Gender: Male**  
**DOB: 12/19/2002**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	
Intermediate	CBSE	SVM, Sultanpur	2019	96.80%
Matriculation	CBSE	KNICE, Sultanpur	2017	95.00%

Pursuing **Minor in Computer Science and Engineering** offered by CSE Department, IIT Bombay

## SCHOLASTIC ACHIEVEMENTS

- Awarded **Branch Change** to Mechanical Engineering based on outstanding academic performance ('21)
- Amongst **top 1 percentile** of students in JEE out of **1+ million** candidates across India and abroad ('20)
- Received UP Science Talent Search Exam Scholarship given to top 300 out of **0.1 million** + students ('17)
- Awarded **Merit Certificate** from **CBSE** given to **top 0.1%** candidates for exemplary performance ('19)

## PROFESSIONAL EXPERIENCES

**SDE Intern | Decentralised Finance | Marsh McLennan** (May' 22 - Present)

*Marsh McLennan is the leader in risk, strategy and people, helping clients navigate a dynamic environment*

- Developed an **MMCT/DAI exchange** on Ethereum blockchain and deployed it as a lambda on **AWS**
- Utilised **Uniswap** to script a liquidity pool of DAI/MMCT with Gaussian distribution of positions
- Implemented DeFi investment strategy using self written **Financial Controller Contract** in **Solidity**
- Automated staking of the collateral to **Compound Protocol** and stored the cTokens back in contract
- Created an API for **smart contract security audit** using **Mythril, Securify, Manticore and Slither**

**Blockchain Web Developer | Electroshoe, San Francisco, USA** (Dec' 22 - Jan'22)

*Bestowed a **Letter of Recommendation** for excellent performance, strong work ethic and analytic skills*

- Developed an NFT Marketplace on **Solana and Polygon** using **Rust, Solidity, React and web3.0**
- Provided features to mint **ERC721 NFTs** and get added to respective community of the NFT's collection
- Utilised **IPFS** and **Filecoin** blockchain using **Web3.storage** to store **NFTs** for permanence on web
- Utilised APIs for KYC, contact number, email verification and cryptocurrency onramp/offramp services

**XRP Ledger Campus Ambassador** (Jul' 22 - Present)

*The XRP Ledger (XRPL) is a decentralized, public blockchain led by a global developer community*

- Responsible to create initiatives and events on campus, with options to develop content, research and hackathons
- Participating in personalized training sessions on blockchain and getting hands-on experience with community

## KEY TECHNICAL PROJECTS

**Online Exam Proctoring Application | Research Project | Prof Ashutosh Gupta | CSE, IITB** (Oct' 21)

- Developed an Online Proctoring Web Application that takes camera feed of clients using **webRTC**, merges them on an **RTMP server** using **FFmpeg** and streams a single stacked stream using **Nginx** to the proctor
- Used **ExpressJS** for server side programming and developed the frontend using **HTML, CSS, JS, Bootstrap**

**Option Pricing | FinSearch | Finance Club, IIT Bombay** (Jul' 22)

- Programmed script to implement **Black Scholes Option Pricing** while taking the parameters from users
- Researched on option contracts and **Binomial Option Pricing Model** and implemented it in **Python**

**File Malware Detection System | Seasons of Code | Web and Coding Club, IIT Bombay** (Jul' 22)

- Detected creation, modification or deletion in the filesystem using **watchdog** library in **Python**
- Used APIs of **LIEF project** to extract features from **PE files** in JSON format included in the Ember dataset
- Training decision trees and **Random forest** using **EMBER2017** dataset containing **1.1Million+** PE files

**Stock Market Prediction | Coursera | Self Project | IIT Bombay** (Jun' 21)

- Built a **Facebook Prophet** Machine learning model in order to forecast the price of Tesla 30 days into the future
- Valuated the performance of the model against real data using Google Finance in Google Sheets and dived into **PE ratio, EPS, Beta, Market cap, Volume and price range** of Tesla and visualised using **Plotly express**

**Sarcasm | Student Alumni Relations Cell | Dean ACR Office, IIT Bombay** (May' 22)

- Developed a **full stack web application** on **Django** framework for crypt hunt with live leaderboard
- Implemented registration, **timed bonus questions** and live social media sharing for **3K+** participants

**Institute Yearbook** | Student Alumni Relations Cell | Dean ACR Office, IIT Bombay (May' 22)

- Revamped a **facebook like** full stack web application built on **Django Framework** with **MySQL** database
- Provided features to create post, poll, tag someone, upload pictures, comment, share and like other impressions
- Deployed on **digital ocean server**, occupying **50GB+** server space for **10,000+** students and alumni of IITB

**Big Data Analytics** | Course Project | Prof Amuthan AR | Aerospace, IIT Bombay (Jul' 21)

- Inspected and evaluated data using analytical and statistical tools on vaccines for **Covid**, Covaxin and Covishield
- Used Numpy, Scipy, matplotlib, ipywidgets and pandas libraries of python for data **cleaning and visualisation**
- Verified **Central Limit Theorem** and tested **null hypothesis** of both vaccines being equally likely

**Lasso Game** | Course Project | Prof. Bhaskaran Raman | CSE, IIT Bombay (Feb' 21)

- Utilised **Object Oriented Programming** in conjunction with **STL Libraries** and **Graphics** to create a game
- Added different features like **Timed Levels**, **Randomised Objects** and **Leaderboard** in addition to visually enhancing the game and updating scores in file using concepts of **Data File Handling**

## POSITIONS OF RESPONSIBILITY

**Web Portfolio Head** | Student Alumni Relations Cell, IIT Bombay (May' 22 - Present)

*Superheading a **two tier 70+** membered team facilitating relations among **60K+** alumni and **10K+** students*

Technical	<ul style="list-style-type: none"><li>• Maintaining <b>10+</b> domains using <b>Nginx reverse proxy</b> over <b>Gunicorn</b> and <b>PM2</b> servers</li><li>• Administering <b>digital ocean droplet</b> with <b>4 vCPUs</b> and <b>8GB/160GB</b> disk space</li><li>• Developed an <b>android application</b> on <b>React Native</b> to prevent fraud calls in <b>Phonathon 2022</b></li><li>• Developed a robust centralised web application to streamline and profile <b>10+</b> web portals</li></ul>
Professional	<ul style="list-style-type: none"><li>• Chairing a team of <b>5</b> coordinators, working closely with the <b>Dean ACR Office</b> and <b>IITB AA</b></li><li>• Managed the <b>CSR conclave</b> participated by <b>200+</b> corporate tycoons with a budget of <b>10M</b></li><li>• Planned <b>8 reunions</b> for <b>2k+</b> alumni, including <b>1st</b> ever gathering of <b>30+</b> civil servants</li><li>• Improvised the <b>Institute Valedictory Function</b> for graduating batch   <b>200% y-o-y</b> increase</li></ul>
Initiatives	<ul style="list-style-type: none"><li>• Ideated an institute wide technical <b>hackathon</b> to promote cutting edge technologies</li><li>• Planned to develop an institute wide crypt hunt game as a <b>Dapp</b> in <b>Metaverse</b></li></ul>

**Blockchain Mentor** | Summer of Science | MnP Club, IIT Bombay (May' 22)

- Mentored **7 students** to make them acquainted with **Blockchain** and **DeFi technologies** and the use cases
- Collaborated to make a decentralised Zombie game on **Solidity** and linked to frontend using **web3.0**

**Web Coordinator** | Student Alumni Relations Cell, IIT Bombay (Jun' 21 - Apr'22)

*Part of a **60 member** team responsible for fostering relations among **60K+** alumni and students*

- Working in a **team of 6** to handle the web presence of Student Alumni Relations Cell through websites
- Designed and developed amazing **UI/UX** using different JS libraries like **ThreeJS**, **AnimeJS**, **ParticleJS**
- Responsible for developing various websites and game leading to **5000+** registrations with **150 % y-o-y** increase

**Web Developer** | Student Satellite Program, IIT Bombay (Jun' 21 - Present)

*Part of a **70+ member** team aiming to make IITB a Centre of Excellence in Satellite and Space Technology*

- Revamped the official website of IITB Student Satellite Program using **PHP**, **HTML**, **CSS**, **JS** and **Bootstrap**
- Collaborated to increase the outreach of IITBSSP through social media platforms leading to **6K+** followers

**Teaching Assistant** | Ka Kha Ga Hindi Learning Program, IIT Bombay (Mar'21 - May' 21)

*Part of a **9 member** team responsible to help interested students in campus to speak and understand Hindi*

- Conducted **8 classes** to teach and clarify doubts of **16 students** across all departments of IIT Bombay
- Managed a lot of **Online Activities** like story narration to make learning of language a fun experience

**Event Organiser** | Entrepreneurship Cell, IIT Bombay (Dec'21 - Mar' 21)

*Part of the Entrepreneurship Cell, IITB which is the Asia's Largest Entrepreneurship Promoting college body*

- Organized competitions (**Triathlon**, **Boardroom**) in **E-Summit'21** resulting in **60% y-o-y growth**
- Reached out to **50+** entrepreneurship bodies on social media for increasing outreach of the event

## TECHNICAL SKILLS AND COURSES

- **Programming Languages:** C++, Python, C, HTML, CSS, JavaScript, PHP, MySQL, Solidity, Rust
- **Frameworks/Libraries:** Django, React, 3JS, Numpy, Scipy, Pandas, Matplotlib, Ipywidgets, Bootstrap
- **Other Technical Skills:** Nginx, Digital Ocean, Blockchain, DeFi, Git, Latex, Linux OS, AutoCad, Ansys
- **Computer Science Courses:** Data Structure and Algorithms, Computer Networks, Data Analysis and Interpretation Using Python, Machine Learning Foundations, Computer Programming and Utilisation Using C++
- **Mathematics Courses:** Numerical Analysis, Calculus, Linear Algebra, Differential Equations, Economics

## EXTRA-CURRICULAR ACTIVITIES

- Interacted with **100+** alumni and revitalised the database in annual telephonic marathon at IITB (21)
- Represented IIT Bombay in Bidding Competition in **9th Inter IIT Tech Meet** (21)
- Completed an year long training as a **Cadet** at **NCC(National Cadet Corps)**, IIT Bombay (21)