Aryan Moholkar

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Roll No: 23B2714
Degree: Four Year B.S.

Gender: Male
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Examination	University	Institute	Year	CPI %
Graduation	IIT Bombay	IIT Bombay	2027	9.34
Intermediate	Maharastra Board	Namo Rims Junior College	2023	85.67%
Matriculation	CBSE	Universal High School	2021	95.33%

SCHOLASTIC ACHIEVEMENTS

- Ranked in the top **0.61** percentile in the JEE Mains examination among **1.1 million** candidates nationwide[2023]
- Placed in the top **0.57** percentile in the JEE Advanced examination among **0.18 million** students nationwide[2023]
- Achieved a perfect **AA(10/10)** grade in **11** courses including Computer Utilization and Programming at IITB[2025]
- Demonstrated early aptitude in computing, scoring **98% in IT** (CBSE, 10th) and **95.5% in CS** (Maharastra HSC, 12th)

KEY PROJECTS

Public Health Office Digitisation Portal | Institute Web Nominee | Self-Initiated Project   [June 2025 - Present]

Full-stack Web App for IIT Bombay's Hostel Cleaning Verification System

- Engineered a scalable full-stack web portal using **Django REST Framework** and **React + Tailwind**, enabling real-time logging and verification of over **5000+** cleaning operations weekly across **18 hostels** at IIT Bombay
- Integrated **OAuth2** SSO authentication and role-based access for students and admins, enabling QR-based verification
- Designed dashboards with **filterable stats**, CSV export, and **API** authentication using session **cookies** and **CORS**

Married Research Scholars Portal | Institute Web Nominee | Extended Development Project[June 2025 - Present]

Apartment Allocation System for Married Research Scholars at IIT Bombay

- Engineered **backend logic** to handle **complex** edge **cases** like priority swaps, joint applications, and expiry policies
- Developed a modular Django backend with normalized **PostgreSQL** schema to manage 3+ apartment categories
- Built an **admin** interface for live status tracking, approvals, and audit logging, reducing manual work by over **60%**

Full-Stack CRUD Dashboard | Self Project   [June 2025 - present]

Production-ready CRUD application using Dockerized Django backend and React frontend

- Built an authenticated **CRUD** dashboard with React+Django REST, supporting data creation, editing, and deletion
- Integrated **MySQL** with **Dockerized local stack** and structured Django models for consistent data access
- Containerized full development setup via **Docker Compose**, ensuring **repeatable** and **isolated deployments**

Weather Web Application | Self Project   [Sep 2024 - Nov 2024]

A dynamic weather application for accurate forecasting and interactive features

- Built a responsive front-end using **vanilla JS** and **OpenWeatherMap** API for live temperature, humidity, etc
- Designed an **interactive** city-based search with animated **condition-specific** visuals to enhance **user-experience**
- Deployed via **GitHub Pages** with clean design and animated feedback, enhancing user engagement and accessibility

PROFESSIONAL EXPERIENCE

Data Analyst Intern | KAN Initiatives LLC (Texas, USA)   [May 2025 - July 2025]

Contributed to internal data-driven decision support through analysis and reporting workflows

- Cleaned and analyzed operational datasets using **Python**, and **Excel** to identify trends across business **KPIs**
- Built **reusable** data analysis **scripts** to **automate** recurring business queries using **matlpotlib** and **pandas**
- Collaborated on a **KPI dashboard** using HTML/CSS and **Chart.js** to **visualize** business performance **metrics**

OTHER PROJECTS

Stock Market Sentiment Analysis | Self Project   [Jan 2025 - May 2025]

Explored the predictive relationship between financial news sentiment and stock price movements using NLP techniques

- Collected real-time news headlines for **20+** stock tickers using **Alpha Vantage** and **NewsAPI** for event-driven analysis
- Preprocessed text data and computed sentiment scores using **NLTK** Vader and **TextBlob** to extract market sentiment
- Correlated sentiment polarity with **intraday** stock movements to **evaluate predictive power** of qualitative signals

Bitcoin Volatility Forecasting | Self Project   [May 2025 - Present]

Applied financial time-series modeling to forecast cryptocurrency and ETF volatility using real-world market data

- Modeled cryptocurrency volatility using **GARCH**, **EWMA**, and range-based estimators via **arch** Python library
- Evaluated forecasting accuracy using **Mean Squared Error** and **Quasi-Likelihood** across multiple volatility proxies
- Adapted academic techniques to compare volatility in **Bitcoin** and Indian **ETFs** across different market regimes

Impact of RBI Interest Rate Hikes | Finsearch | Finance Club, IIT Bombay [Sep 2024 - Nov 2024]

Analyzed monetary policy shifts using Python to study macroeconomic and financial market reactions

- Scraped and visualized RBI repo rate alongside CPI, GDP, and market indices using **pandas**, **matplotlib**, and **seaborn**
- **Modeled** post-hike responses in stock, bond, and derivatives markets to evaluate **volatility** and investor behavior
- Built an interactive dashboard with **Plotly Dash** to present insights on interest rates and asset performance over time

Hygiene on Campus | ConsultX | Consult Club, IIT Bombay [Sep 2024 - Nov 2024]

*Addressed campus-wide sanitation and food safety challenges impacting over **10K** students*

- Led data **collection** and **analysis** using Google Forms and **pandas** to identify hygiene lapses in hostels and messes
- Recommended **tech-enabled** interventions including **QR-based** checklists and **digital audit** trails for PHO staff
- Collaborated with key **stakeholders** to align sanitation insights with the **design** of the PHO Digitization Portal

Statistical Analysis of Mid-Day Meal Impact | Course Project | Economics of Healthcare [Jan 2025 - April 2025]

*Guide:- **Prof. Souvik Banerjee** | Analyzed **24K+** IHDS records using Python to model student absenteeism*

- Cleaned and processed large-scale IHDS survey data using **pandas**; engineered **15+** features and handled outliers
- Applied **Negative Binomial Regression** via **statsmodels** to effectively model absenteeism under over-dispersion
- Reported **11%** absenteeism **drop** linked to Mid-day Meal participation ($p < 0.001$), **validating model** relevance

Simulating Digital Communication with Hamming Error Correction | Course Project [Aug 2024 - Nov 2024]

*Guide:-**Prof. Mani Bhushan** | Simulated data transmission under noise to evaluate Hamming (7,4) error correction using Python*

- Built a **binary communication simulator** with random noise injection to model **bit-flip errors** in digital channels
- Implemented **Hamming** encoding/decoding logic to detect and correct **single-bit errors** in transmitted messages
- Conducted statistical analysis using **SciPy's** t-test to compare corrected vs uncorrected error rates across **1000** simulations

Technical Skills

Programming	Python | C/C++ | JavaScript | LaTeX | SQL | Bash
Development	HTML | CSS | Django | Flask | React.js | Next.js | Tailwind CSS | Plotly | OAuth2
Data Science	Pandas | NumPy | Seaborn | Matplotlib | SciPy | Statsmodels | Jupyter Notebook
Machine Learning	PyTorch | Scikit-learn | TensorFlow | arch | NLTK | TextBlob
Tools & Software	Git | VS Code | Fusion360 | Laser Cad | Faktory | Canva | PostgreSQL | MySQL | SQLite

Positions of Responsibility

Institute Web Nominee | Hostel Affairs Council, IIT Bombay [June 2025 - Present]

*Spearheading technical initiatives to digitize hostel operations across **18 hostels***

- Maintained and improved the Hostel Affairs website and **institute-wide** portals to support administrative workflows
- Coordinated with GSHA and hostel secretaries to **deploy** scalable **tech solutions** across council-wide operations

Department Academic Mentor | Student Mentor Program, IIT Bombay [June 2025 - Present]

*Mentoring **9 sophomores** in academic, personal, and extra-curricular pursuits, to foster a **holistic growth***

- Part of a **8 member** DAMP team selected via stringent interviews, SOP and peer reviews for mentorship excellence
- Managed Chemistry **DAMP blog** and **Instagram**, sharing **course reviews**, interviews, and event updates

Hostel Web & Tech Secretary | Hostel 09, IIT Bombay [Sep 2024 - April 2025]

*Managed hostel digital infrastructure and enhanced web-based services for **400+ residents***

- Redesigned hostel website interface; added interactive mess menu and animated event calendar for **improved UX**
- Ensured uninterrupted LAN uptime by **managing** router-hub **networks** and resolving real-time connectivity issues

Extra-Curricular Activities

Leadership and Public Speaking	• Served on the **elected student council** for 2 years as School Vice Captain and Captain • Delegate of Argentina in WHO at **MUN 4 India**, discussing global health policies • Anchored school annual function (2k+ attendees); featured on Red FM's Little Champs
Technical Certifications	• Completed Data Analytics Job Simulation by **Deloitte Australia** (Forage, Jul 2025) • Earned Career Essentials in Data Analysis certification by **Microsoft**+LinkedIn (May 2025) • Completed a workshop on **Game Development** conducted by Innovation Cell, IIT Bombay
Sports & Fitness	• Achieved a Black Belt in karate, demonstrating discipline, perseverance, and physical fitness • Competed in volleyball tournaments, showcasing teamwork, strategy, and athletic ability
Social & Cultural	• Volunteered 80+ hours via **NSS**, including **cleanups** at Powai lake & Versova beach • Production team, Performing Arts Festival(IITB); Shiamak Davar dance workshop graduate

Key Courses Undertaken

Math & Computing	Calculus, Linear Algebra, Computer Programming, AI and Data Science, Data Analysis for Chemists
Chemistry	Organic Chemistry, Physical Chemistry, Transition Metal Chemistry, Interpretative Spectroscopy, Thermodynamics and Kinetics
Interdisciplinary	Economics, Economics of Healthcare, Design Thinking, Makerspace, Intro. to Management