Aditya Patil

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Skills

Languages: C++, Java, Python, Dart, HTML, CSS, JavaScript

Libraries: React, Flutter, HiveDB, Numpy, Matplotlib, Pandas, SciKit-Learn, Bootstrap

Key Projects

IIT Bombay's One Tap Authentication App   **May '24 - Present**

- Leading a team of **4 developers** to develop an app in **Flutter** which authorizes entry of **10,000+** students
- Deployed at IITB swimming pool, authorizing **2500+** users with real-time tracking on a **ReactJS** dashboard
- Utilized an **NFC** card reader for tracking relevant details about the student needed by the administration
- Leveraged both **Hive** & **MongoDB** to locally store & verify data, enabling app to function when offline
- Used the **http** dart package for seamless **API** integration to sync local data with the Backend when online
- Performed secure **encryption** using the **Fernet algorithm** to reliably decrypt students' ID from QR code
- Employed **Data Base Management Systems** to retrieve data from existing app databases without overloading server storage
- Integrated Inventory Management system with real-time tracking, **SSO** login, and a **ReactJS** dashboard

InstiApp   **Sep '24 - Present**

Introduced new features, and redesigned InstiApp, an app that digitizes student life at IIT Bombay. The app has **10,000+** *downloads,* **4000+ Monthly Active Users,** *and a* **4.2 star** *rating in the Play Store*

- Led a team of **4** developers to develop a portal in **Flutter**, effectively facilitating listing of **800+** products.
- Added **fuzzy search** for category, price, and availability, allowing users to browse and mark items as sold.
- Designed and developed a platform in **Flutter** for students to create communities and engage with peers
- Integrated open-access onboarding and link embedding for communication, driving **500+** signups in **2 weeks**
- Built a verification system with **Angular** and **Django** for event submission and approval by institute bodies
- Automated app feed updates and email alerts post-approval, improving visibility for **10,000+** students
- Generated QR code in **Flutter** to authorise **10,000+** students in **10** hostels for mess & sports facility access

Accelerating Drug Discovery — Google Developer Groups Solution Challenge   **Mar '25 - Jul '25**

- Secured **1st** position out of **64k+** participants for a novel solution **reducing** drug discovery time by **60%**
- Designed an **responsible AI** pipeline to cut clinical-trial failure by **30%** via high-potential candidate selection
- Built a **protein-conditioned** generative model using **Conditional RNN** and **VAE** for novel drug design
- Designed a **Bidirectional LSTM** protein encoder with **attention** and **temperature** controlled sampling
- Integrated **RDKit**, **MolGPT**, **DiffDock** & **Gemini** for molecular property analysis and visualization

Sentiment Analysis Tool   **Oct '24 - Nov '24**

- Worked in a team of 5 to build an **NLP** tool for performing sentiment analysis on online product reviews
- Used the **SciKit-Learn** library to implement a **Logistic Regression** model, achieving **83%** accuracy
- Implemented **TF-IDF vectorisation** to transform preprocessed text into meaningful numerical features, accurately calculating the relative importance of each word in a document across the entire text corpus

Education

IIT Bombay   **Aug 2023 - May 2027**

B.Tech. in Civil Engineering, with minor in Computer Science & Engineering *CPI: 9.03/10*

Relevant Coursework: Introduction to Machine Learning, Data Structures and Algorithms, Operating Systems

Positions of Responsibility

Project Lead — DevCom, IIT Bombay   **Mar '25 - Present**

- Leading a team of **20+ developers**, responsible for maintaining the digital infrastructure of the institute
- Mentored developers in writing **production quality**, **maintainable code** and **System Performance Evaluation**
- Significantly contributed to the improvement of **InstiApp**, an app that digitises a students' everyday life
- Deployed systems on a **Linux Server** using **Client Server Information Systems** and automated **10+** hours of manual work via **cronjobs**