Amit Malakar **22B0443**
Chemical Engineering **B.Tech.**
Indian Institute of Technology Bombay **Gender: Male**
 DOB: 24/01/2003

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2026	
Intermediate	WBCHSE	Kanksa High School	2021	85.40%
Matriculation	WBBSE	Birudiha High School	2019	95.86%

Pursuing **Minor** degree in **CS** offered by the department of **Computer Science and Engineering**, IIT Bombay

SCHOLASTIC ACHIEVEMENTS

- Currently holding **Department Rank 15** in a batch of **150+** students of Chemical Engineering Department [2024]
- Recipient of the prestigious **NTSE** scholarship **(800 recipients | 1M candidates)** awarded by **NCERT** [2019]
- Felicitated by the **Chief Minister** of West Bengal for exceptional performance in the **WBJEE** examination [2022]
- Awarded the prestigious **JBNSTS** scholarship, granted to only the top **200** students out of **80K+** aspirants [2019]

PROFESSIONAL EXPERIENCE

Software Development Intern | AP Landscaping | ProSpace *[Mar 2024 - May 2024]*
*Building an App from scratch using **Flutter** and **Express.js** for Landscaping services*

- Utilized Firebase Cloud Messaging (**FCM**) for real-time notifications and messaging, boosting user engagement by **20%**
- Connected **Firebase NoSQL** database for **CRUD** APIs, ensuring seamless and efficient **Frontend** communication
- Integrated **Google** authentication via Passport Strategy with **OAuth 2.0** credentials, enhancing user authentication
- Deployed backend on **AWS** EC2 with auto-scaling, load balancing, and security protocols, improving efficiency by **33%**

Software Development Intern | GoBlu-EV *[Aug 2023 - Oct 2023]*
*Responsible for ideating and crafting **APIs** for seamless App and Website experiences*

- Developed an admin portal for the Startup, providing seamless access to daily **analytics**, including usage statistics, booking and earning insights through an interactive **dashboard** increasing **data-driven** decision making by **50%**
- Collaborated effectively within a dynamic **team of 5** developers to deliver frontend-centric APIs using **Express.js**
- Leveraged **MongoDB's** aggregation framework to merge the web and app databases ensuring **100%** data integrity
- **Researched** on competitors to integrate best practices and innovations, enhancing the Startup's competitive edge

Junior AI Engineer | Entvin, Inc *[May 2024 - Jun 2024]*
*Contributed to pharmaceutical AI projects at Entvin, a **Y Combinator**-backed startup*

- Developed an AI web scraper using Scrapy, **Selenium**, and **spaCy** to extract data without knowing **DOM** structure
- Built a **RAG** model with OpenAI for **querying** PDFs, featuring highlighted answer extraction and page retrieval
- Achieved **95%** accuracy by utilizing OpenAI function calling to generate precise PDF answers with page numbers
- Integrated **OpenAIEmbeddings** and **FAISS** for text embedding into vector store, enabling rapid data retrieval

Application Development Intern | Breezo Technologies *[Dec 2023 - Jan 2024]*
*Developed a **Social media** App for people to discuss, review and recommend movies to friends*

- Designed Django REST APIs with **React Native** frontend, leveraging **PostgreSQL** for robust data management
- Utilized the **TMDb API** for searching, fetching, storing, and displaying movies on frontend **user-friendly** interface
- Developed comprehensive **tests** for API components, evaluating performance metrics under the peak usage scenarios

KEY PROJECTS

NewBee | Devcom *[Mar 2024 - Jun 2024]*
Institute Developers' Community, IIT Bombay

- Developed a Discussion Forum for **1400+** freshers and **80+** mentors at IIT Bombay, migrating from Facebook group
- Led a team of 5 developers in building the **MEVN** (MongoDB, Express.js, Vue.js, Node.js) stack discussion forum
- Implemented **MVC** architecture and middlewares, utilized Multer disk storage for robust CRUD operation on image
- Automated question and post **tagging** using a deployed NLP model to improve **categorization** and user efficiency
- Reduced repetitive question postings by **75%** using similarity search on database embeddings of existing questions

Insight Discussion Forum | InstiApp *[Aug 2023 - Oct 2023]*
*Institute Developers' Community, IIT Bombay | **10K+** downloads | **5K+** monthly active users*

- Developed **AngularJS** components for anonymous posting and **dynamic polls** boosting user interaction by **7%**
- Created REST APIs with **Django Rest Framework**, tested in **Postman** and integrated them into the frontend
- Optimized usage of multiple **REST API** endpoints considering seamless user flow and minimum requests as possible
- Implemented an InstiApp events feature for organizers to keep students informed about ongoing **institute events**

Enhanced Super-Resolution Generative Adversarial Networks [May 2023 - Aug 2023]
Seasons of Code Project | Web and Coding Club, IIT Bombay

- Deployed an **ESRGAN** model on a Flask-based website enabling real-time **low-res** to **high-res** image generation
- Achieved **81%** accuracy on upscaling low-res to high-res images using ESRGAN model trained on **DIV2K** dataset
- Implemented convolutional layers and **RRDB** architecture for enhanced spatial resolution and detail preservation
- Trained a Convolutional Neural Network **(CNN)** model on the MNIST dataset to recognize and classify numbers
- Implemented **Logistic Regression** model using Scikit-learn library on the **IRIS** dataset for classification analysis

Neural Networks and Large Language Models [Jul 2023 - Aug 2023]
Learners' Space | Web and Coding Club and UGAC, IIT Bombay

- Fine-tuned the **GPT-2(LLM)** model on a custom chatting dataset, successfully creating an interactive AI Chatbot
- Employed decoding strategies like random sampling and temperature scaling with **Hugging Face Transformers**
- Implemented **Skip-gram** Word Embeddings in PyTorch, enhanced with NLTK for text preprocessing and optimization
- Developed RNN-based **sentiment analysis** model in PyTorch with LSTM networks achieving precision of **85%**

Data Analytics Using Python [Dec 2022 - Jan 2023]
WIDS | Analytics Club, IIT Bombay

- Conducted thorough **EDA** on Netflix usage and **India's GDP** data, extracting insights through statistical techniques
- Designed and trained scikit-learn **linear regression** models for analysis and prediction, visualizing results effectively
- Proficiently used essential Python data analysis libraries like NumPy, Pandas, Matplotlib, **Seaborn**, and **scikit-learn**

Deep Dive Into App Development [Jul 2023 - Aug 2023]
Learners' Space | Web and Coding Club and UGAC, IIT Bombay

- Built a Budget Tracker App using Flutter, **Firebase** and **Dart** for maintaining income and expense management
- Integrated Firebase for user authentication, Firestore for data management, and real-time data **synchronization**
- Implemented CRUD operations, **pie chart** visualization and advanced filtering options for enhanced user experience

POSITIONS OF RESPONSIBILITY

Project Lead | Developers' Community(DevCom), IIT Bombay [Jul 2023 - Present]

- Leading a **team of 24** developers and designers tasked with maintaining critical digital infrastructure for the institute
- Responsible for taking impactful decisions on the projects and catering to needs of **10,000+** students of the institute
- Increased Insti-App's user base by **1000** by leading a **4**-member design team to improve user experience and outreach

Web and Tech Secretary | Hostel 3 , IIT Bombay [Sep 2023 - Mar 2024]
In charge of overseeing the web and technical aspects of Hostel 3

- Tasked with **organizing** and expanding participant engagement in **institute-level** tech and general competitions
- Accountable for maintaining **Hostel 3's** primary website and feature enhancements to optimize its functionality
- Contributed ideas and **assisted** participants on diverse projects, enhancing hostel **standings** in overall competitions

TECHNICAL SKILLS

Programming Languages	C++, Python, Java, JavaScript, HTML, CSS, Dart, Git, TypeScript, SQL
Software	Postman, Github, MongoDB Compass, Fusion360, MS Office, Figma, Hugging Face Transformers, Jupyter Notebook, Flutter SDK, AWS
Integrated Development Environments	Visual Studio Code, Android Studio, Arduino IDE, Anaconda, IntelliJ
Frameworks	Django, Django Rest Framework, Jupyter, Angular, Vue, Express, Flutter
Libraries	NumPy, Pandas, Matplotlib, Seaborn, scikit-learn, Mongoose, AngularJS, Keras, TensorFlow, PyTorch, PyGame, Multer, NLTK, RegEx, Gradio

EXTRACURRICULAR

- Part of the IIT Bombay football team in **Aavhan**, the sports fest of IITB, competing against **32** teams from Mumbai
- Earned a **Gold Medal** in the water polo competition at the **Aquatics General Championship** of IIT Bombay
- Completed a two-semester long training program in **Football** offered by the **National Sports Organisation**, IITB
- Represented Hostel 3 in **Badminton** General Championship, securing the **runner-up** position among 10+ hostels
- Participated in a rigorous one-month **Summer Football Camp** with only **20** being selected out of 80+ participants
- Successfully climbed to the top of **Harishchandragad (4665ft)**, during a challenging trek organized by **NCC**