Divyam Gupta   210020044

Chemical Engineering   B.Tech.

Indian Institute of Technology Bombay   Gender: Male

DOB: 18/07/2003

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	
Intermediate	CBSE	St.Columba's School,New Delhi	2021	98.00%
Matriculation	CBSE	St.Columba's School,New Delhi	2019	94.40%

SCHOLASTIC ACHIEVEMENTS

- Department rank   in the Department of **Chemical Engineering** among **140+** students *[Present]*
- Pursuing a **Minor** degree from the **Computer Science** and Engineering department at IIT Bombay *[Present]*
- JEE Advanced: Top **98.49%** (out of **0.2M**) | JEE Main: Top **99.88%** (out of **1.2M**) | NSEP: nation top **20%** *['21]*
- Received the prestigious **KVPY** fellowship from **IISC** in SX stream amongst top **1%** of **0.1 million** aspirants *['21]*
- Secured an All-India Rank 65 in the National Mathematics Contest conducted online by **Picirql** *['19]*
- Among the top **10%** scorers out of **0.1 million** aspirants in the National Mathematics Talent Contest *['18]*

PROFESSIONAL EXPERIENCES

DATA ANALYST |*ACMEGRADE* *[December 2022-January 2023]*

- Analyzed a **Kaggle** dataset on patients and determined whether the patient is suffering from Parkinson's disease, used a **support vector machine** (SVM) to divide the data, and attained an accuracy score of **88%** during segregation

SOFTWARE DEV ENGINEER| *DAWA.AI* *[May 2023- June 2023]*

- Developing the company's various **B2B**, and **B2C** products, websites, and dashboards using **MERN stack** and **EJS** to build a sophisticated network for the delivery and tracking of medicines by collaborating with various pharmacies
- Hosted the enterprise's website on **AWS cloud** and optimized the computing costs by a significant percent, using the tools available like **Amazon EC2** virtual cloud services, **Amazon RDS** in collaboration with the **Product** and **Tech** teams

RESEARCH EXPERIENCE

DOMAIN ADAPTATION IN NLP AND IMAGE ANALYSIS| RESEARCH PROJECT | *[Present]*

- Developing a deep learning model for the **fine-grained sketch-based image retrieval (FGSBIR)** method
- Outputs colored images based on the input sketch-based image provided using **CNN** architecture and built on fine-tuned **CLIP** model by openAI and accuracy determined using the **F1 score** metrics based on the **Flickr8k** dataset

WEB AND APP DEVELOPMENT PROJECTS

INSTIMAP | INSTIAPP | *DEVCOM, IIT BOMBAY* *[September 2022-December 2022]*

- Implemented Map navigation using **Dijkstra's Algorithm** in **Python**, integrated it with frontend using **Angular.js**
- Expected increase in users by **20%** after adding the functionality to INSTIAPP with the current user base **(10K+)**

INSIGHT DISCUSSION FORUM | INSTIAPP| *DEVCOM, IIT BOMBAY* *[June 2022-August 2022]*

- Developed **REST** APIs using **Django Rest Framework** for **CRUD** operations and tested the APIs using **Postman**
- Current userbase of **300** students and aim to increase it by **20%** by adding some more communities and forums

LHC ONLINE BOOKING PORTAL| RAMP-UP PROJECT |*DEVCOM, IIT BOMBAY* *[April 2022-May 2022]*

- Developed a **backend** for an auditorium and class booking portal in lecture hall complexes using **Django** and **DRF**
- Developed **APIs** using **Django Rest Framework** to check the availability and book the venue without overlaps

EnEx| GUEST-ENTRY-EXIT |*DEVCOM, IIT BOMBAY* *[November 2022-December 2022]*

- Developed **REST APIs** for the portal using **Flask**, rendered user data inside the inbuilt **SQLite** database, and integrated2factor authentication using the institute's inbuilt **SSO** tokenizer built upon the **JWT** token system

OTHER KEY TECHNICAL PROJECTS

SIGN LANGUAGE DETECTOR | *SELF PROJECT* *[June 2023-present]*

- Used Python **OpenCV** for computer vision and image processing and **Mediapipe** library for hand detection
- Creating an ML model by training a **CNN architecture** with about **50** layers and a **SoftMax** layer on the Kaggle **MNIST** dataset containing American and Indian sign language symbols and aiming for an accuracy score **>=90%**

CREDIT CARD FRAUD DETECTION |*SELF PROJECT* *[April 2023-May 2023]*

- Detected the number of frauds based on various inputs from the Kaggle dataset and used the **K Nearest Neighbors** algorithm to classify points into 2 categories (fraud, valid) and determined an accuracy score of **85%**

PASSIVE HEATING OF HOUSES | COURSE PROJECT | *[January 2023-April 2023]*

- Focused on optimizing heat transfer and maintaining a steady temperature inside houses built in colder regions of India in a team of **8**, considering various modes of heat transfer like **solar irradiation**, **conduction**, and **convection**
- Analyzed heat transfer through walls of conventional mud houses and the new proposed model of houses made of stray and clay, concluded that the latter retains warmth with **30%** less temperature drop

AUTONOMOUS TIC-TAC-TOE| *SELF PROJECT*   *[June 2023-July 2023]*

- Created a Man vs. Computer TIC-TAC-TOE simulator in C++ where it leads to either a draw or where only the computer wins by implementing a backtracking minimax algorithm to determine the optimal move to make

JARVIS | DESKTOP ASSISTANT | *SELF PROJECT*   *[October 2021-December 2021]*

- Developed virtual AI desktop assistant **JARVIS** on **PYTHON** and used Windows **sapi5** engine, **Pyttsx3** for text-to-speech translation, **Google Calendar**, and **Wolfram Alpha APIs** to schedule events and weather forecasting.

PURPLE CAP| ONLINE SERVICES BOOKING PLATFORM | *COURSE PROJECT*   *[August 2020-October 2020]*

- Developed a basic online services booking platform using **PYTHON**, used **MySQL** database to store details of each service booked, used **CSV** files to store details of employees, **Matplotlib** for data visualization

GAS LEVEL MONITORING| IOT AND ML PROJECT |*IIT DELHI*   *[June 2019-July 2019]*

- Designed an **ML** model using **Big Data** to determine gas compositions (in ppm) in the surroundings based on real-time data,used **Node-red** (Arduino-based **IOT** model) to connect the model to a gas monitoring device

POSITIONS OF RESPONSIBILITY

DEVCOM CORE DEVELOPER| INSTITUTE TECH TEAM| *DEVCOM, IIT BOMBAY*   *[March 2022-March 2023]*
One of the biggest Developer's Community in India responsible for the development and maintenance of projects

- Part of a **15**-member Developers group selected via vigorous training and interviews out of **150** applicants
- Maintaining critical digital infrastructure for the institute and increasing userbase of **InstiApp(10k+** downloads**)** by **15%** in just **2** months by ideating product roadmaps and ongoing projects like MessI, RVP and Resobin

COMPETITIONS COORDINATOR| TECHFEST | *IIT BOMBAY*   *[May 2022-December 2022]*
*Asia's largest science and technology festival| Footfall:**175000+** | Event:**15+** | Colleges:**1000+***

- Oversaw Techfest's **International Micromouse Competition** with more than **200** participants and **20+** international teams from Nepal, Malaysia, Bangladesh, Madagascar, and Australia, and **30+** national teams
- Organized **TECHNORION** zonals in Nagpur managing **5+** competitions with a target of **2000+** participants
- Supervised the grand **TECHNOHOLIX** event with a footfall of **175000+** people from all around the world by inviting various international artists and performers to showcase their talents for three exciting nights

STUDENT MENTOR | DEPARTMENT ACADEMIC MENTORSHIP PROGRAM | *IIT Bombay*   *[present]*
*Amongst **43** of **110+** applicants to mentor **150+** students based on a rigorous interview process and peer reviews*

- Mentoring **7** chemical engineering **sophomore**s catering to their academic needs and co-curricular endeavors
- Responsible for the **Chemical D-AMP blog**, a go-to site for all department-related information and resources

TECHNICAL SKILLS

- **Programming Languages**: C, C++, Python, JavaScript, R, MATLAB
- **Development tools**: HTML, CSS, MySQL, jQuery, Angular, MERN stack, Flutter, Django, Git, AWS cloud
- **ML & Analytics tools**: Sci-Kit Learn, NumPy, Pandas, TensorFlow, Keras, PyTorch, Seaborn, Matplotlib,openCV
- **Software and Packages**: AutoCAD, MS Office, Adobe Illustrator and Photoshop, Figma, Canva, VScode, GitHub

RELEVANT COURSES UNDERTAKEN

SUBJECTS	COURSES
CHEMICAL ENGINEERING	Introduction to Numerical Methods, Computational Methods Lab using MATLAB, Intro to Data Analysis
COMPUTER SCIENCE	Computer Programming and Utilization with C++, Introduction to C, Data Structures and Algorithms with C++, Supervised and Unsupervised Learning in Machine Learning by Andrew Ng, Google Data Analytics with R programming, Prompt Engineering
MATHEMATICS	Real analysis, Linear Algebra, Calculus, Differential Equations
MISCELLANEOUS	Ethical Hacking, Graphic Designing, Movement Neuroscience, Sociology, Engineering Graphics and Drawing, Biology,

EXTRA-CURRICULARS

- Completed a 4 week-long course on **Financial Technology and Entrepreneurship** under a senior lecturer at (2022) **Harvard University** and was also awarded a **Letter of Recommendation** by him
- Secured **Gold** in the Junior Category of **The Queen's Commonwealth Essay Competition** conducted by (2018) **The Royal Commonwealth Society** supported by **Cambridge University**
- Completed one year in **Aquatics** at **NSO**, IIT Bombay, and was part of the Institute's Swimming Team (2022)
- Mentored **10** students for building an **NFT** Marketplace using **Solidity** and **NextJs** for **WnCC** Summer of Code. (2023)
- Competed in a 12-hour-long **Competitive Programming** organized by **Techfest** IIT Bombay and was (2021) amongst the top **10%** scorers from all around the globe contesting for a prize of **1.5 Lacs+** INR
- Volunteered in an event **SAMBHAV**, an international Platform for sharing of best practices in Advancing (2019) The Rights of Persons with Disability conducted by "**A.L.P.A.N.A**"
- Secured a certificate of **achievement** for **outstanding performance** in the online inter-college event Skill (2022) Tank 2022 between the Indian Institute of Technology Bombay and the Delhi University