



Anubhab Ray
Computer Science & Engineering
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B.Tech.
Gender: Male
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Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	
Intermediate	CBSE	Shiv Jyoti International School, Ranpur, Kota, Rajasthan	2020	
Matriculation	ICSE	Holy Cross School, Durjoynagar, Agartala, West Tripura	2018	

SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 2301** out of 0.15 million candidates in **JEE Advanced** examination [2020]
- Achieved **99.693** percentile in **JEE Mains** exam among 0.88 million candidates [2020]
- Pursuing a **major** in **Computer Science** and **minor** in **Electrical Engineering** [2020-Present]
- Recipient of the **NTS Scholarship** and **KVPY Fellowship twice**, in class 11 (SA) & 12 (SX) [2018, 2019]

POSITION OF RESPONSIBILITIES

- Mentored** and guided **6 sophomores** over a year to **improve their academic performance** [May 2022-23]
- Design Manager** of **Institute Technical Council**; **guided 2 Conveners (Sophomores)**, **ideated & managed** all Design Aspects of **ITC Events** over an year [May 2022-23]
- Design Nominee** of **Computer Science Dept.**; created graphic content for all CSE events [May 2022-23]
- Mentored 8 students** in their various **Full-Stack Web Development Projects** under **Summer of Science** initiative by **Maths & Physics Club, Institute Technical Council, IITB** [June-July 2022]

COURSE PROJECTS

- Campus Connect : An Insti'gram for peers** [March-April 2023]
completed under Prof. S. Sudarshan, Dept. of CSE
 - Spearheaded a team of 4** to create **MERN web-app** using **React, Redux, Node, Express & MongoDB**
 - Implemented** user Auth., session cookies with **JWT**; encryp. with **byCrypt**, media Chat with **Socket.io**
 - Used ext. Image storage on **Cloudinary**, redux-store for global access to user models & db collections
 - Implemented** recommendation system, **search filtering** & random discover using **BFS & K-NN Algo.**
- Credit Card Fraud Detection** [Oct' 2022]
completed under Prof. Abir De, Dept. of CSE
 - Implemented** a Binary Classifier model with **multi-layer Neural Networks** using **Tensorflow & Keras**
 - Pre-processed data using **StandardScalar Transform** then used **FeedForward NN** with **Dense layers**
 - Compiled using **Adam Optimizer & Binary Cross Entropy loss**; used **ReLU** and **Sigmoid** activations
 - Resampled** heavily skew'd data using **OSS Undersampling (Tomek links,CNN)** getting **95% F1 Score**
 - Resampled** by borderline-SMOTE with **RandomUnderSampler** of the majority class : **99.8% F1 Score**
- Web-based Dynamic Learning Environment (Moodle)** [Oct- Nov' 2021]
completed under Prof. Amitabha Sanyal, Dept. of CSE
 - Implemented** a full-stack web-application using **Django, PostgreSQL, Graph.js, Bootstrap4 & Heroku**
 - Made **email Verifier** for Reg., assignment **Auto-grader**, performance **Graphs**, Event **Calendar** & Chat
 - Students** join courses, **submit** assignments, **view** deadlines & upcoming events, grades, Teacher's **feedback**, **report** query or recheck-issues, Classroom **Statistics** as graphs & **Chat-room** discussions
 - Teachers/TAs** create courses, **enroll** students, **upload** material & assignments, **notification** of EODs, **download** submissions , upload **grades**, **feedback** & **reply** to Student's queries & requests

• Networking : Socket Programming

[April-May 2022]

completed under Prof. Kameswari Chebrolu, Dept. of CSE

- Implemented a P2P network for searching & downloading files up-to a specified **neighbor depth**
- Created a client-server model of given Topology using **multi-threading** for file search & download
- Established TCP connections with C++ **socket** library for file transfer and **MD5 hashing** for errors

• Image Processing and Data Analysis in MATLAB

[Oct' 2021]

completed under Prof. Suyash P. Awate, Dept. of CSE

- Implemented **Barycentric Subdivision** Algorithm for **uniform sampling** inside a given 2D-shape
- Reduced dim. of 28x28 pixel img to 84-D hyperplane using **PCA** & reconstructed the **compressed img**
- Generated random fruit imgs from originals using **PCA** & closeness measured by **Forbenius Norm**

• Game with Java - Scotland Yard

[Oct' 2021]

completed under Prof. Amitabha Sanyal, Dept. of CSE

- Simulated an 8x8 grid multiplayer console game with **Client-Server model** using **Java Concurrency**
- Used **OS Process Scheduler** for player threads, **moderated** smooth entry & exit of new/old players
- Achieved mutual exclusion, wait-list & synchronization using **locks, Mutexes and Semaphores**

• Android Development - Personal Study Guide

[Dec' 2021]

completed under Prof. Amitabha Sanyal, Dept. of CSE

- Created an Acad. Scheduler app for **day-time Segregation** into Exams, Self-Study & Assignments time
- Hourly **progress tracker** with **goal statistics**, directive incentives & **Calendar** with daily highlights

SELF PROJECTS

• Multi-PDF Querying using LLMs

[July 2023]

- Developed a python GUI based application using **LangChain, Streamlit & HuggingFace LLMs**
- Used **PyPDF2** for pdfs to mono-string, **CharacterTextSplitter** for chunks & **instructor-xl embedding**
- Used non-persistent **FAISS** vector store in **conversation-chain** using free **Google's flan-t5-xxl LLM**
- Reused chat history using **ConversationBufferMemory** of LangChain & Streamlit's **session variables**

• Webcam-Draw

[August 2023]

- Created a python **OpenCV** application to draw upon Web-cam window as canvas using **hand gestures**
- Used **Google's MediaPipe** for hand-marker tracking, **cv2 module** for GUI buttons of brushes & eraser
- Encoded bit-wise logic to draw **finger traced path** on diff. canvas & **mask** it over GUI webcam window

INTERNSHIPS

• LEAP India Pvt. Ltd., Mumbai

[June-July 2022]

- Created a Supply Chain multi-staged **Pricing Web-Portal** using **React** front-end & **Node** back-end
- Commercial **data processing** on **SQL** db using python's **Numpy, Pandas & Graph.js** for visualization
- Reduced manual Excel workbooks & provided **reliable, secure**, online bill access to major departments

• Anya Consultancy Services, Bengaluru

[June-Aug' 2022]

- Collaborated on E-Commerce project front-end using **React, BootStrap5 & Volt-React**
- Worked on **API integration & testing** using Postman, Component Management and UI Media Queries

TECHNICAL SKILLS

Programming	C/C++, Python, Java, JavaScript, L ^A T _E X, Bash, Android Studio
Machine Learning	Numpy, Scikit-learn, Pandas, Mathplotlib, Tensorflow, Keras, Streamlit
Front End Dev	HTML5, CSS, SASS, Vanilla.js, AJAX, Redux & React.js, BootStrap5
Back End Dev	Django, Node.js, Express.js, Flask, MySQL, PostgreSQL, MongoDB

EXTRA CURRICULAR

- Recipient of **Cultural Talent Search Scholarship-2012** in **Painting** under CCRT, Min. of Culture, New Delhi
- Bagged **2nd Prize**, National Painting Award, under **Indian Council of Child Welfare** [2014]
- Participated in 4 International exhibitions; **Gold Medal** in 2 and **Jury Honor** in other 2 [2011, 12, 13, 14]
- Completed **Visharad (5th year)** in Painting with **1st-Division** [2015]