



NIKHIL INJARAPU
Computer Science & Engineering
Indian Institute of Technology Bombay

210050069
B.Tech.
Gender: Male
DOB: 15/8/2004

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	8.6
Intermediate	BIEAP BOARD	SRI CHAITANYA	2021	98.50%
Matriculation	AP SSC BOARD	SRI CHAITANYA	2019	10

SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 196** in **JEE-Advanced** out of 1,41,699 candidates (2021)
- Secured **All India Rank 284** in **JEE-Mains** out of over 1 million candidates (2021)
- Awarded the **NTSE** (National Talent Scholarship Exam) Scholarship from the Government of India (2019)
- Achieved rank of 75 in **TS EAMCET**(conducted by TSCE) out of 1,50,000 candidates. (2021)
- Achieved rank of 149 in **AP EAMCET** (conducted by APHCSE) out of 1,75,000 candidates. (2021)
- Among the top 317 students selected for **IOQP part 2**, Indian National Physics Olympiad. (2021)
- Selected for attending Kishore Vaigyanik Protsahan Yojana Exam interview (KVPY) (2019)
- Scored 405 out of 450 in the **BITSAT** conducted by the Birla Institute of Technology and Sciences

KEY PROJECTS

Rail Planner | *Course Project : Data Structures and Algorithms*

(Autumn 2022)

Instructor: prof. Supratik Chakraborty

- Developed a rail planner using data structures such as trees,tries,dictionaries,heaps,lists,Queues etc in c++.
- optimized the no of comparisons and the no of updates by using **AVL Trees** instead of using **BST trees**.
- Used **KMP** algorithm for optimizing the review filter by using for Pattern matching
- Used **quick sort** to list departures from a station and **priority queues** to fetch list of top rated trains.

Image Processing and Data Analysis completed | *Course Project*

(Oct 2022)

Instructor : prof. Suyash Awate

- Algorithm for Euclidian Planar **uniform Sampling**, implementation of **PCA** for **Hyperplane Fitting**
- Linear Regression** on scatter-plots; process **handwritten digits**, Character Recognition using **PCA**
- Dimentionality Reduction**, visualize 28x28 pixel image on 84-D **Hyperplane**, maximize **Dispersion**
- Reverse Image Processing** to get back Original image from 84-Coordinate system
- Process Group similar looking** fruits, measure of Closeness : **Forbenius norm** of the difference
- Generate new fruit images** from given Sample; their Classification Grouping with real fruit images

Fast Chat | *Course Project*

(Oct 2022)

Instructor : Prof. Kavi Arya

- Building a network of clients interacting with each other with help of servers acting as mediators
- Aiming to build a **network of clients** interacting with each other with some **servers** acting as **mediators**
- Working towards achieving **high throughput with limited resources** dedicated for the servers
- Attempting to ensure **low latency** of individual message deliveries and **E2E encryption** between clients
- Using **authlib** library for authentication, **PostgreSQL** server database and **bash** for collecting results

OTHER PROJECTS

Personal website | *Course Project*

(Aug 2022)

Instructor: Prof. Kavi Arya

- Designed my personal web page using **HTML, CSS and Javascript**, demonstrating various features
- Made the web page responsive using **CSS** and **bootstrap** and added an interactive page using **Javascript**

Bubble Trouble | *Course project*

(Jan 2022-Feb 2022)

Instructor: prof. Parag chaudhuri

- Implemented a game called bubble trouble game in c++ using simplecpp graphics library.
- Implemented gravity, various difficulty levels , obstacles and collision between various objects.

Puzzle | *Course Project*

(Spring 2022)

Instructor : prof. RKJ

- created a **puzzle game** which consists of different blocks and the game asks us to connect the different blocks and structure the final result.
- Used **fltk** library for doing this and implemented moments by of blocks by using the same

Tic Tac Toe | *Course project*

(Oct 2022)

Instructor: Kavi Arya

- Implemented the famous tic tac toe game along with exceptional handling in java
- Used socket variables to connect socket server and clients for communication between opponents

Random walkers | *Course Project*

(Aug 2022 - Sep 2022)

Instructor : prof. Suyash Awate

- Simulated N random walkers and obtained **Gaussian distribution** plot of their final locations
- Verified the **Law of Large Numbers** by analysing the true and empirically computed mean,variance

Documentation of Data Structures | *Course Project*

(Sep 2022)

Instructor: Prof.Kavi Arya, Department of Computer Science & Engineering

- Documented the data Structures(Lists, Heap, BST, Trie) using both **Sphinx** and **Doxygen**.
- **Doctests** are added in documentation so that docs are always up to date with the code

Find the flag | *Self project*

(2022)

Source: YOS

- Implemented a bash script and used various linux commands for finding the flags present in a zip file
- Every time you extract the zip file, you get a new zip file and an ASCII text file containing the password(not encoded) to extract the new zip file.
- Encoded the password in obtained in the text file to unlock the other zip files

RELEVANT COURSES UNDERTAKEN AT IITB

Mathematics

Calculus I and Calculus II, Linear Algebra, Ordinary Differential Equations, optimization models

Computer Science

Computer Programming and Utilization, Abstractions and Paradigms, Software Systems Lab, Discrete Structures, Data Analysis and Interpretation, Data Structures and Algorithms , Design and analysis of Algorithms*, computer networks*, Digital logic design and computer architecture*, Logic for computer science*

Electrical Engineering

Introduction to Electrical and Electronic Circuits

Other

Modern Physics, Electromagnetism, Engineering Drawing, Biology, Chemistry

**to be completed by April 2023*

TECHNICAL SKILLS

Languages

C/C++, Python, Java, Bash, Prolog, Haskell, Matlab

Software

Git, L^AT_EX, Sed, Awk, Doxygen, Sphinx

Development

HTML, CSS, JavaScript, Bootstrap

EXTRACURRICULAR ACTIVITIES

Quizzing	<ul style="list-style-type: none">• Awarded second prize for inter school science quiz competition (2021)
Coding	<ul style="list-style-type: none">• Participated in code wars which deals with bot programming in python (2021)
Sports	<ul style="list-style-type: none">• Completed a year long National Sports Organisation program at IIT Bombay (2021-2022)• winner of intra college volleyball tournament conducted by the college (2020-2021)