M.Thivesh Chandra | **190050124**
Computer Science & Engineering | **B.Tech.**
Indian Institute of Technology, Bombay | **Gender: Male**
DOB: 12-12-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	null
Intermediate	Telangana Board	Narayana	2019	96.70%
Matriculation	CBSE	Narayana	2017	10

Pursuing Minor Degree in the **Centre for Machine Intelligence and Data Science**

Scholastic Achievements

- Secured **All India Rank 8** in **IIT JEE Advanced** among **0.17 million** candidates *(2019)*
- Secured **All India Rank 91** in **IIT JEE Main** among **1.2 million** candidates *(2019)*
- Achieved **Rank 16** in **TS-EAMCET** out of **2.2 lakh** students conducted by **TSCHE** *(2019)*
- Achieved **Rank 11** in **AP-EAMCET** out of **2.2 lakh** students conducted by **APSCHE** *(2019)*

Olympiads

- Among the **Top 35** students selected for **Orientation Cum Selection Camp**(OCSC) for the **Indian National Mathematics Olympiad**(INMO) *(2017)*
- Placed among **Top 1%** in **National Standard Examination in Chemistry**(NSEC) and received **Certificate of Merit** *(2018-2019)*
- Participated in **APMO**(Asian Pacific Mathematics Olympiad) in which **top 100 students**(*current+previous year INMO awardees*) from India compete *(2017)*
- Qualified for **Indian National Chemistry Olympiad**(INChO) examination *(2018-2019)*
- Among the **Top 30** in **Regional Mathematics Olympiad**(RMO) out of **900** students *(2015-2016)*
- Achieved **KVPY Fellowship** organised under DST,**Government of India** *(2017-2018)*

Internships

Web Development *May 2021 - July 2021*

Dr.Chandra Shekhar | **The Right Doctors**

- Deployed angular app on **GoogleCloud Instance** to act as server.
- Worked with **SQL,Mongo** Databases in **NodeJS**.
- Worked with **firebase** to send **notifications**
- Worked on Calling Facility between Doctor and Patient using TokBox Service.
- Worked on Mobile Number Verification using OTP.

Key Projects

Plagarism Checker *Autumn 2020*

Prof. Amitabh Sanyal | Course Project, Software Systems Lab

- Attempting to build a rudimentary **copy checker**, which, given a bunch of source files, should be able to generate a matrix of how similar each pair is
- Figuring out the **extent of similarity** of a given pair of source files using the **Bag of Words** strategy
- Computing a **Term-Document Matrix** that corresponds to the number of words for each file, sorting and normalising this **signature vector**
- Using **cosine similarity** to determine the **extent of similarity** of two such vectors

Permutation Class *Autumn 2020*

Prof. Ajit Diwan | Course Assignment, Data Structures and Algorithms

- Implemented a **permutation** class which is a function from {0,1,2,...,n-1} to {0,1,2,...,n-1} using **pointers** and allocates an array of required size on the **heap memory**
- Implemented **constructors**, **copy constructors**, **destructors**, ensuring there was no memory leaks and using parameter **passing by reference** for better efficiency
- Used **cycles property** of permutations to implement **square root** and **power** functions for this class
- Used **Chinese Remainder Theorem** to implement **logarithm** function for this class

IITB PROC *Spring 2020*

Prof. Virendra Singh | Course Project, Digital Logic Design

- Designed a 16-bit multi-cycle processor with Memory, Register and Arithmetic Logic units
- Implemented a Finite State Machine for the execution of 15 instructions in a 6-staged pipeline

Quad Tree Data Structure *Autumn 2020*

Prof. Ajit Diwan | Course Assignment, Data Structures and Algorithms

- Developed C++ code for Quad Tree data structure that can efficiently *manipulate* black and white images
- Implemented functions that can efficiently find the intersection and union of two images
- Implemented functions that can efficiently resize, complement, extract sub-image of an image

Other Projects

Image Reconstruction *Spring 2020*
Prof. Ajit Rajwade | Course Assignment, Advanced Image Processing *IIT Bombay*

- Implemented **ISTA** and **OMP** over **DCT** and **HaarWavelet** basis for reconstruction of compressed images.
- Utilized **L1_LS** package to implement **CS** (Compressive Sensing) based reconstruction of images from **tomographic projections**.

TCP Variants Comparision *Spring 2020*
Prof. Vinay Ribeiro | Course Assignment, Computer Networks *IIT Bombay*

- Simulated a file transfer between nodes with **TCP-Reno** and **TCP-Cubic** connections using **socket programming** in C++.
- And observed the **Throughputs** and **WindowSize** using **Wireshark** and compared the values

Estimation of Covariance Matrix *Spring 2020*
Prof. Ajit Rajwade | Course Project, Advanced Image Processing

- Implemented MATLAB code that estimates a Covariance Matrix from Compressive Measurements using the result in this paper

XLR8 *Autumn 2019*
Electronics and Robotics Club-team of 4 *IIT Bombay*

- Built a **remotely controlled bot** capable of negotiating different kinds of obstacles in its path and completed the competition path.
- Implemented the electrical and mechanical part of a bot using differential steering mechanism.
- Utilized **AT Tiny 2313** (Integrated Circuit) for the functioning of the bot.
- Incorporated a **Bluetooth module** HC-05 and facilitated the use of an **L293D** motor driver.

Technical Skills

Programming	Python, C++, Java, Bash, Arduino
Web Development	HTML, CSS, JavaScript, Angular, Android, NodeJS
Softwares	LaTeX, MATLAB, Git, AutoCAD, SolidWorks
Packages	Numpy, Matplotlib, Pandas, FLTK, sqlite3

Courses Undertaken

Core Courses	Data Structures and Algorithms+Lab, Data Analysis and Interpretation, Advanced Image Processing, Machine Learning and Artificial Intelligence + Lab*, Software Systems Lab, Computer Networks+Lab, Digital Logic Design+Lab, Design and Analysis of Algorithms, Logic for Computer Science, Discrete Structures, Operating Systems*, Computer Architecture*,Fundamentals of Digital Image Processing*, Foundations of Intelligent and Learning Agents*, Database and Information Systems**, Automata Theory**, Implementation of Programming Languages**, Abstractions and Paradigms for Programming+Lab,Computer Programming & Utilisation
Mathematics	Linear Algebra, Calculus, **Introduction to Probability**, **Applied Stocastic Process**
Online Courses	Programming for Everybody(getting started with python)(Coursera, University of Michigan), Python Data Structures(Coursera, University of Michigan)
Others	Introduction to Electrical and Electronics Circuits, Engineering Graphics, Quantum Physics, Electricity and Magnetism, PhysicalChemistry,Economics,Psycology*

** to be completed by November 2021, ** to be completed by April 2022*

Extra-curriculars

- Volunteered to work for National Service Scheme (**NSS**) under **Green Campus Program**. *(2019-2020)*
- Secured **All India 13th** rank in **Association of Mathematics Teachers of India(AMTI)** *(2014-2015)*
- Bagged **All India Rank 19** in **Association of Mathematics Teachers of India(AMTI)** *(2013-2014)*
- Runner Up in **Department Volleyball Tournament** conducted by **CSEA** IIT Bombay *(2020)*
- Runner Up in **Department Kho-Kho Tournament** conducted by **CSEA** IIT Bombay *(2020)*
- Participated in **Telca Volleyball**, **Telca Cricket** Tournament conducted by **Sports Club** IIT Bombay *(2020)*