

M.Thivesh Chandra

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EDUCATION

Indian Institute of Technology Bombay <i>Bachelors of Technology with Minor in DataScience Computer Science and Engineering</i>	2019 - Present CGPA : 9.1/10
Sri Chaitanya Narayana Junior College <i>Intermediate Telangana State Board of Intermediate Education (TSBIE)</i>	2017 - 2019 Percentage : 96.7 %
Narayana Concept School <i>Matriculation Central Board of Secondary Education (CBSE)</i>	Spring 2017 GPA : 10/10

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 **INMO** (2017)
- Placed among **Top 1%** in **NSEC** and received **Certificate of Merit** (2018-2019)
- 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

Software Development May 2022 - July 2022
P.Kiran Kumar | Amazon

- Gained hands-on experience with **AWS** resources like **Dynamo DB**, **S3**, **VPC**, **EMR Clusters**, **Step Functions**
- Automated the **creation** of **AWS** resources during code deployment using **CDK** (Cloud Development Kit)
- Scheduled the execution of various **pyscripts** on **EMR** clusters using **Step Functions** and **Cron Scheduler**

Web Development May 2021 - July 2021
Dr.Chandra Shekhar | The Right Doctors

- Worked on hosting servers based on the deployment of various angular apps on **GoogleCloud** Instance
- Utilised **firebase** to send push notifications and used **SQL,Mongo** Databases in conjunction with **NodeJS** application.
- Utilised **TokBox Service** to facilitate calls between doctors and patients along with **OTP** based user **authentication**

KEY PROJECTS

Plagiarism Checker July 2020 - Nov 2020
Prof. Amitabh Sanyal | Software Systems Lab IIT Bombay

- Built a rudimentary **copy checker**, which, given a bunch of source files using **Bag of Words** strategy
- Computed **signature vector** for each file and using **cosine similarity** to determine the **extent of similarity**
- Built a website with **authentication** using **Angular** in which user can upload files for checking plagiarism

Restaurant Management System Jan 2022 - April 2022
Prof. Umesh Bellur | Database and Information Systems Lab IIT Bombay

- Built a restaurant website using **React** (frontend) in which there are options for dine in and online ordering.
- Implemented access control for **permissions** for different types of users like customer, owner, delivery person etc
- Created an analytics page for owner to see the **analytics** like best dish, best delivery person, best customer etc.

IPL Website and Database Design Jan 2022 - April 2022
Prof. Umesh Bellur | Database and Information Systems Lab IIT Bombay

- Automated the insertion of IPL data into a **PostgreSQL** database using **python** scripts by parsing csv files
- Designed an **interactive** website, using **Angular**, **NodeJS** and **Postgres**, for visualizing various IPL statistics
- Presented various **statistics** about every player, match, season, and venue with an extra feature to add new venues
- Implemented **slotted page** structure for efficient storage and table **scan** operations for a toy database

SCLP Compiler Jan 2022 - April 2022
Prof. Uday Khedker | Implementation of Programming Languages IIT Bombay

- Developed an end-to-end compiler from **scratch** for **SCLP**, a C-like language to generate **TAC**, **RTL** statements
- Implemented **scanning**, **parsing** and register allocation algorithms from scratch using **lex**, **yacc** and **C++**

Operating Systems

Prof. Mythili Vutukuru | Operating Systems Lab

July 2021 - Nov 2021

IIT Bombay

- Implemented a basic shell with simple commands like **ls**, **cat**, **echo**, **sleep**, **cd**, **exit** using child processes in **C**.
- Supported **serial**, **parallel** and **background** execution of various processes along with signal handling
- Implemented Synchronization using **pthread**s on master-worker thread pool, a simple **file system** from scratch

OTHER PROJECTS

Intelligent Learning Agents

Prof. Shivaram Kalyanakrishnan | Foundations of Intelligent Learning Agents

July 2021 - Nov 2021

IIT Bombay

- Implemented **epsilon-greedy** exploration, UCB, KL-UCB, and **Thompson Sampling** for multi-armed **bandit**
- Implemented Value Iteration, Howard's Policy Iteration, determined **optimal** policies in **Anti-Tic-Tac-Toe**

Image Deblurring

Prof. Ajit Rajwade | Fundamentals of Digital Image Processing

July 2021 - Nov 2021

IIT Bombay

- Implemented **reverse heat** equation in MATLAB along with stopping thresholds based on **curvature** models
- Performed various experiments on various images to compare the result images based on MSE minimisation

Image Reconstruction

Prof. Ajit Rajwade | Advanced Image Processing

Jan 2021 - April 2021

IIT Bombay

- Implemented **ISTA** and **OMP** over **DCT** and **HaarWavelet** basis for reconstruction of compressed images.
- Utilized **L1 LS** package to implement **CS** based reconstruction of images from **tomographic projections**.

Estimation of Covariance Matrix

Prof. Ajit Rajwade | Advanced Image Processing

Jan 2021 - April 2021

IIT Bombay

- Implemented a research paper on the estimation of Covariance Matrix from **compressive** Measurements.
- Compared the standard normal **deviation** of estimated matrix for sparse matrices, numbers dataset and **real images**

TCP Variants Comparison

Prof. Vinay Ribeiro | Computer Networks

Jan 2021 - April 2021

IIT Bombay

- Simulated data transfer between nodes with **TCP-Reno**, **TCP-Cubic** connections using **socket programming**
- Simulated **FTP** and **CBR** flows with **Ethernet** and **Wifi** as link layers using **ns3** and **Wireshark** for observations

ARQ Protocol

Prof. Vinay Ribeiro | Computer Networks

Jan 2021 - April 2021

IIT Bombay

- Implemented data sender and receiver for **UDP** connections along with packet **authenticity** and **integrity**
- Implemented Automatic Repeat Request(**ARQ**) Protocol to deal with **re-transmission** in case of packet loss

Optimized Permutations

Prof. Ajit Diwan | Data Structures and Algorithms

July 2020 - Nov 2020

IIT Bombay

- Implemented **square root** and **power** functions by using **cycles property** of permutations in linear time
- Used extended Euclidean algorithms and **Chinese Remainder Theorem** to implement **logarithms** in linear time

TECHNICAL SKILLS

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

COURSES UNDERTAKEN

Core Courses	ML for Remote Sensing, CG, DeepLearning for NLP, DSA , Data Analysis and Interpretation, Digital Image Processing, AI and ML , Computer Networks, Digital Logic Design, Design and Analysis of Algorithms , Logic for CS, Discrete Structures, OS , Computer Networks , Computer Architecture, Foundations of Intelligent and Learning Agents, Database and Information Systems , Automata Theory, Implementation of Programming Languages
Mathematics	Introduction to Probability , Linear Algebra, Calculus, Regression Analysis , Introduction to Numerical Analysis, Applied Stochastic Process , Statistical Inference

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)
- Winners in **Department Volleyball Tournament** conducted by **CSEA IIT Bombay** (2022)
- Winners in **Department Kho-Kho Tournament** conducted by **CSEA IIT Bombay** (2023)
- Participated in **XLR8** competition conducted by Electronics and Robotics Club of IITB (2019)