D.Chandra Sekhara S. S. Hetha Havya
Computer Science & Engineering
Indian Institute of Technology Bombay

190050031
B.Tech.
Gender: Male
DOB: 10/17/2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	
Intermediate	Telangana State Board of Intermediate Education	Sri Chaitanya Narayana Junior Kalasala	2019	98.50%
Matriculation	CBSE	Kennedy High School Vijayawada	2017	95.00%

Pursuing Honors Degree in the **Computer Science and Engineering** Department *Jan 2021 - Present*

Scholastic Achievements

- Department **Rank 5** in a batch of **145** students of Computer Science and Engineering *(2021)*
- Secured **All India Rank 23** in **IIT JEE Advanced** among **0.17 million** candidates *(2019)*
- Secured **All India Rank 33** in **IIT JEE Main** among **1.2 million** candidates *(2019)*
- Secured **KVPY**(Kishore Vaigyanik Protsahan Yojana) fellowship with an **All India Rank 11** *(2018)*
- Achieved **Rank 2** in **TS-EAMCET** out of **2.2 lakh** students conducted by **TSCHE** *(2019)*
- Achieved **Rank 4** in **AP-EAMCET** out of **2.2 lakh** students conducted by **APSCHE** *(2019)*
- Secured **Advanced Performer**(**AP**) grade that is awarded to top 2% students in **Data Analysis and Interpretation**, **Calculus**, **Physical Chemistry** courses *(2020)*
- Secured **All India Rank 8** in **Dr C.R Rao Statistics Olympiad** by CR Rao AIMSCS *(2016)*

Olympiads

- Invited to participate in **APhO**(Asian Physics Olympiad) for being in top 6 among the 35 students who are selected for IPhO(International Physics Olympiad) training camp *(2019)*
- **INMO Scholar:** Cleared **INMO**(Indian National Mathematics Olympiad), **RMO**(Regional Maths Olympiad) and attended the **IMO Training cum Selection camp** at HBCSE, Mumbai *(2017)*
- **INPhO Scholar:** Cleared **INPhO**(Indian National Physics Olympiad), **NSEP**(National Standard Examination in Physics) and selected to attend the **IPhO Selection Camp** at HBCSE*, Mumbai *(2019)*
- **INChO Scholar:** Cleared **INChO**(Indian National Chemistry Olympiad), **NSEC*** *(2019)*
- Attended **National Science** (**Vijyoshi**) **Camp** organised by **IISc Bangalore** *(2018)*
- Participated in **APMO**(Asian Pacific Mathematics Olympiad) in which **top 100 students**(*current+previous year INMO awardees*) from India compete *(2017)*
- Amongst top 300 students selected for Indian National Astronomy Olympiad conducted by **HBCSE*** *(2017)*
- Amongst top 300 students selected for Indian National Junior Science Olympiad conducted by **HBCSE*** *(2016)*
- **RMO** (Regional Maths Olympiad) awardee consecutively for **two years** *(2015,2016)*

**NSEC: National Standard Examination in Chemistry,*HBCSE: Homi Bhabha Centre For Science Education*

Key Projects

Loan Pecking Order *December 2020 - January 2021*

Winter Internship, ***Indian School Of Business(ISB)***

- Developed an Algorithm-based tool that predicts an individual's loan preference while repayment using the borrower level characteristics and the previous loans that he has taken. This tool is highly beneficial for lending institutes as it provides a sense of risk exposure of their lending profile. It provides an added advantage to price aggressively or lend a lesser amount than demanded for risky borrowers.

Red Plag *September 2020 - November 2020*

Prof. Amitabh Sanyal | Course Project, Software Systems Lab

- Developed a Plagiarism checking webiste using **Angular** for frontend and **Django** for backend.
- Added Google Firebase based **authorisation system** so that only authorised users can access it.
- Used **Bag of Words Strategy** to obtain the signature vectors and measured the extent of copying using the normalised Euclidean distance between signature vectors of the code.
- Provided a downloadable **Heat Map** to visualize the extent of copying using **Matplotlib**.

Difference-Based Image Noise Modelling *Spring 2021*

Prof. Ajit Rajwade | Course Project, Advanced Image Processing

- Modelled pixel variability in **raw images** using the **Skellam distribution**.
- Implemented MATLAB code that uses these parameters to denoise an image, detect edges in an image, seperate background and foreground in a video.

Intelligent Chess Agent *June 2021 - July 2021*

Summer of Science | MnP Club, IIT Bombay

- Developed the frontend of chess game using pygame module in python.
- Implemented an RL-based chess agent that uses self-play and TD(0) learning to find the optimal policy.
- Used **depth-limited mini-max search** to find the optimal move. Implemented the **Treestrap** technique to improve the policy from the mini-max search results. Used α, β pruning to fasten the mini-max search.

ML GYM *March 2020 - June 2020*

Season of Code | WnCC, IIT Bombay

- Written python codes for **Linear-SVM** and **Basic-Data Processing**
- Used **Sub-Gradient Descent method** for minimizing the cost function of Linear-SVM
- Processed the data by filling the missing data and creating **one hot vector encoding** for categorical variables and normalizing the data

IITB-Proc *Spring 2021*

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

Permutation Class *Autumn 2020*

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

- Developed C++ code for permutation class that provides *square root, logarithm, power* etc of a permutation
- Used the **Cycle Decomposition technique** to optimise power, square-root, logarithm of permutation
- Used **Merge Smaller to Larger technique** and **Chineese Remainder Theorem** to efficiently compute the logarithm of a permutation

ARQ Protocol *Spring 2021*

Prof. Vinay Ribeiro | Course Assignment, Computer Networks

- Implemented data sender and receiver programs using socket programming in C++.
- Implemented ARQ(Automatic Repeat Request) Protocol to deal with packet retransmission in case of packet losses.

Technical Skills

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

Courses Undertaken

Computer Science	Data Structures and Algorithms, Data Analysis and Interpretation, Advanced Image Processing, Machine Learning and Artificial Intelligence*, Software Systems Lab, Computer Networks, Digital Logic Design, Design and Analysis of Algorithms, Logic for Computer Science, Discrete Structures, Operating Systems*, Computer Architecture*, Database and Information Systems**, Automata Theory**, Implementation of Programming Languages**, Abstractions and Paradigms in Programming
Mathematics	Linear Algebra, Calculus, Numerical Analysis**
Certificate Courses	Web Development (FrontEnd), Tinkering Bootcamp
Others	Introduction to Electrical and Electronics Circuits, Engineering Graphics, Quantum Physics, Electricity and Magnetism, PhysicalChemistry

** 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)*
- Have a max-rating of **1889** on online coding platform *CodeForces*
- One of the finalists in (**Bazinga**), a maths competition conducted by **Maths and Physics Club, IITB**. *(2019)*
- Participated in personality development sessions conducted by **MOL** (Mantra of Life) *(2020)*
- Stood as one of the **top 30 rankers** in **AMTI**(Association of Mathematics Teachers of India) *(2015)*
- Participated in Quiz competition named **Champion** conducted by popular Telugu T.V channel **E-TV** *(2014)*