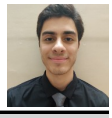
BHAVUK BHANDULA



ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech in Mathematics & Computing	Indian Institute of Technology, Delhi	9.34
2019	CBSE	Amity International School, Noida	96.2
2017	CBSE	Amity International School, Noida	10

SCHOLASTIC ACHIEVEMENTS

- **IITD Semester Merit Award**: Awarded merit scholarship for scoring **CGPA in top 7%** amongst 1000+ students (2020)
- **Joint Entrance Examination(JEE) Advanced:** Secured **All India Rank 222** among more than 2 lakh students (2019)
- **Joint Entrance Examination(JEE) Mains:** Secured **All India Rank 274** among more than 1.2 million students (2019)
- **KVPY**: Awarded the prestigious **Kishore Vaigyanik Protsahan Yojana fellowship** after obtaining **All India Rank 95** (2018)
- **UPSTSE Scholarship Program:** Awarded the state scholarship program for excellent performance in merit exam (2017)
- **Global Talent Search Examination**: Received Scholarship for securing **Rank 1** in GTSE amongst 5000 students (2017)

INTERNSHIPS

- **NK Securities, Quantitative Researcher** : *Option Pricing and Volatility Modelling* (May, 2022 - Jul, 2022)
  - Developed and analysed an **Indicator** based upon **Historic Volatility** to use underlying asset for **predicting option pricing**
  - Tracked the volatility vs strike price **Smile Curve** for movements and inconsistencies; extracted **additional profit from Hedge**
  - Explored the **call-put parity**, suggesting alt. execution w/o use of futures/equity for reducing trans. cost and generating more points
- **UNSW, Sydney** : *Mathematical Reduction Between Logic Encoding Languages* (May, 2021 - Jul, 2021)
  - Designed and Proved a **mathematical reduction** translating a logic encoding language GDL to DLPA with **OCaml**
  - Added functionality to **simulate Games** in DLPA to obtain a **winning strategy** from different game states using **AI models**
  - Assisted the **development of DLPAG**, a higher level version of DLPA by **alpha testing** for bugs and suggesting improvements

PROJECTS

- **Porfolio Optimisation using Prospect Theory** | *Prof. Aparna Mehra* (Jan, 2022 - May, 2022)
  - Designed **CVAR based filter** to identify and remove high volatility stocks giving large negative returns in short span of time
  - Improved existing state-of-the-art Sharpe Ratio minimisation by appropriately subsituting **Sortino Ratio** for **Porfolio Optimisation**
  - Created an **ETF** for tracking **Indices** using Prospect Theory, modifying it to **arrest -ve returns** while accurately tracking +ve returns
- **Indian Election Results Prediction Using Twitter Data** | *Prof. Abhijnan Chakraborty* (Jan, 2022 - May, 2022)
  - Designed sentiment analysis models based on **SVM** & **Naive Bayes**, considering **N-gram, Part-of-speech** & **Emoticon features**
  - Developed multiple sentiment-to-vote-share mapping functions, using US 2020 as validation dataset for choosing the function
  - Analysed tweets by media bodies, comparing their **Coverage and Structural Bias** to identify inclination towards dif. political parties
- **Forward Problem on EEG Source Analysis** | *Prof. Lalan Kumar* (Jun, 2020 - Aug, 2020)
  - Applied the BEM model on a real head structure **using MATLAB**, calculating the required sparse matrix for source analysis
  - Programmed a function for **interpolating** potential values at any arbitrary point using data obtained from electrodes
  - Proposed the use of **kD-trees (3-D version)** to efficiently find closest electrodes, and implemented **weighted-curve fitting**
- **Data Mining** | *Prof B.S. Panda* (Jan, 2022 - May, 2020)
  - Explored US population data using **Random Forests, Gaussian Naive Bayes & K-Nearest Neighbours** to predict incomes
  - Employed and optimised **Apriori** and **FP-Tree** in **Python** to extract association rules from the given sales database
- **Analysis of Mutant Genomic Library** | *Prof. Ashish Mishra* (May, 2020 - Jul, 2020)
  - Analysed Z.Mobilis Genomic Library with over **1000 genes** in **700 mediums** to identify roles of dif. genes in **organism's survivability**
  - Determined **functions for unknown genes**, and developed **toolbox in python** to facilitate analysis of similar datasets by biologists
- **Dynamic Memory Allocator** | *Prof. Rahul Garg* (Oct, 2020 - Nov, 2020)
  - Developed system **in Java** to allocate memory as per requests by programs, adding **defragmentation** to consolidate adj. free memory
  - Employed **AVL Tree** data structure for storing free and allocated memory blocks and **best-fit algorithm** for optimal retrieval
- **Seam Carving** | *Princeton University* (Jun, 2020 - Jul, 2020)
  - Modified **Dijkstra's algorithm** and used **index-based priority queue** to efficiently find minimum energy path(seam identification)
  - Used elimination of identified seam in reducing image's length and breadth, while preserving the most interesting features

TECHNICAL SKILLS

- **Programming Languages**: C++, Java, Python, OCaml, Standard ML, Verilog, GDL, HTML
- **Softwares and Utilies**: MATLAB, Git/Github, AutoDesk Inventor, LaTeX, Blender

EXTRA CURRICULAR ACTIVITIES

- **SAC Secretary**: Lead Yulu Project for easier travel in campus | **BSW Mentor** to Freshers, helped i
- **Negotiation Table**: secured 3rd rank in the real life **coorporate world and financial simulation** summit hosted by IIT Delhi

Disclaimer: All the information on this page is entered by student.

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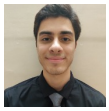

IIT COURSE

Degree	Institute	CGPA
B.Tech in Mathematics & Computing	Indian Institute of Technology, Delhi	9.34

COURSES DONE

Engg. Visualization & Comm., Linear Algebra & Diffe. Equa., Intro. To Electrical Engg., Calculus, Intro. To Computer Science, Computing Laboratory, Optimization Methods & Appl., Machine Intelligence& Learning, Digital Electronics, Real And Complex Analysis, Probability & Stochastic Pro., Data Structures And Algorithms, Discrete Mathematical Struc., Analysis &design Of Algorithms, Combinatorics, Linear Algebra & Applications, Digital Image Processing, Numerical Method S& Computation, Computer Architecture, Cryptography, Mini Project, Functional Analysis, Design And System Laboratory, Special Topics In Computer Ap., Statistical Methods, Data Mining

QUALIFYING EXAM

- **Joint Entrance Examination (JEE) Advanced Rank:** 222 (GE)

EXTRA CURRICULAR ACTIVITIES

- Participated, Symphonia'20 (March, 2020)
- Performer, Inter Hostel Group Dance Competition 2020 (January, 2020 - March, 2020)
- OCS Volunteer, Office of Career Services (August, 2019 - March, 2020)
- Volunteer, Board for Student Publications (July, 2021)

POSITIONS OF RESPONSIBILITY

- Secretary, SAC
- Mentor, BSW (July, 2021 - May, 2022)
- Activity Head, BSP (August, 2020 - July, 2021)
- Lawn Tennis - Captain, Zanskar, BHM (July, 2021 - May, 2022)