ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
2022	B.Tech in Computer Science & Engineering	Indian Institute of Technology, Delhi	8.8/10
2018	CBSE XII Board	Jayshree Periwal High School, Jaipur	96.4%
2016	CBSE X Board	Apeejay Public School, Jalandhar	10/10

SCHOLASTIC ACHIEVEMENTS

- **Teaching Assistant:** Mentoring **400+** students in **Data Structures** and assisting instructors in course evaluation (2022)
- **Foreign Exchange Program:** Selected to represent institute at **City University of Hong Kong** from **100+** applicants (2020)
- **National Talent Search Examination:** Conferred with scholarship given by NCERT after nationwide **2-stage** process (2016)
- **Apeejay Talent Search Examination Scholarship:** Bagged **7th position** all over India across Apeejay Schools (2016)

INTERNSHIPS

- **Huawei Technologies, Bengaluru:** *Framework for HarmonyOS* (May, 2021 - July, 2021)
  - Developed part of framework for easy adoption and transition of Android developers to Huawei's new Operating System
  - Implemented an Android **ViewGroup subclass** for HarmonyOS and tested its functioning via **unit** and **functional tests**

  Received **Star of the Month** award for dedication and perseverance for contribution in Harmony Ecosystem Development
- **Dept. of CSE, IITD (Prof PR Panda):** *Applying Deep RL to Cache Bandwidth Partitioning* (May, 2020 - July, 2020)
  - Devised a **Deep Q Learning** based Algorithm to dynamically update processor's cache bandwidth allocation priorities
  - Experimented with various reward functions and input features to model **tradeoff** between **fairness** and **performance**

  Got **Letter of Recommendation** from professor for excellent performance and contributions to ongoing research

PROJECTS

- **Transfer Learning for Text Generation (B Tech Project):** *Prof Parag Singla* (August, 2021 - Present)
  - Working on transfer learning across languages for generation with focus on **low** and **medium resource** languages
  - Experimenting with fine-tuning language models like **GPT2**, **BERT** to extend them to non-English language generation
- **Frequent Itemset and Indexing (Data Mining):** *Prof Sayan Ranu* (October, 2020- November, 2020)
  - Implemented **Apriori Algorithm** and **FP Tree** in Python to mine frequent itemsets from retail database with **100%** accuracy
  - Evaluated behavior of hierarchical space partitioning techniques, **R star-tree** and **LSH**, on high dimensional data
- **PacMan Projects (Artificial Intelligence):** *Prof Rohan Paul* (November, 2020- December, 2020)
  - Programmed search algorithms like **UCS**, **A-star search** and heuristics for planning PacMan's path in different scenarios
  - Implemented **Minimax**, **Alpha-Beta Pruning** and **Expectimax** for task of PacMan eating food in presence of ghosts
- **Course Management System (Databases):** *Prof Maya Ramanath* (March, 2021 - April, 2021)
  - Built **backend** on **80MB** sized data-set from University of Wisconsin consisting of **11 tables** with over **10 lakh tuples**
  - Implemented functionality around registration, courses, class schedules and grades for registrar, instructors and students
- **Priority Scheduling and User Level Thread Library (Operating Systems):** *Prof Kolin Paul* (March, 2021 - April, 2021)
  - Programmed priority scheduling of threads and **priority allocation** of locks, semaphores and conditional variables on PintOS
  - Implemented **priority donation** on locks to handle cases of **priority inversion** in threads even for multiple/nested donations
  - Built user-level thread library with **FIFO scheduling** and support for locks, yielding and **thread preemption**
- **Crout Matrix Decomposition (Parallel-Distributed Programming):** *Prof Soham Chakraborty* (April, 2021)
  - Implemented parallel versions of Crout LU decomposition via **OpenMP, MPI** and compared their performance with each other
  - Used sections and 'parallel for' constructs in OpenMP and achieved up to **3.3x** speedup for square **matrix size of 3000**
- **Parallel File Download (Computer Networks):** *Prof Aaditeshwar Seth* (November, 2020)
  - Developed multi-threaded file downloader which fetches packets from multiple servers with **dynamic load balancing**
  - Achieved up to **29x** speedup in download times with 40 threads and optimized code for **fault tolerance** in network failures

TECHNICAL SKILLS

- **Programming Languages:** Python, C/C++, Java, PostgreSQL, SML, Ocaml, Prolog, Shell, Lex, Yacc, LaTex
- **Softwares/Libraries:** Pytorch, Tensorflow, Pandas, Matplotlib, OpenMP, MPI, Git, Wireshark, Android Studio, Gem5

EXTRA CURRICULAR ACTIVITIES

- **Mentor:** Assisted freshers in English, resolved their issues and helped coordinators in **freshers' events** (2020-2021)
- **Literary Club:** Part of 16 member team as **Hostel Representative** to organize literary events in the institute & hostel (2019-2020)
- **NSS Volunteer: Taught Mathematics** and made board game to raise awareness about the **right to vote** (2019)

COURSES DONE

Natural Language Processing, Machine Learning, Data Mining, Principles of Artificial Intelligence, Analysis of Algorithms, Databases, Operating Systems, Parallel & Distributed Programming, Computer Networks, Compiler Optimization, Data Structures, Design Practices, Discrete Mathematics, Probability & Stochastic Processes, Applied Game Theory, Macro Economics

All the information has been verified by IIT Delhi.