Chinmay Sharma

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EDUCATION

INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY HYDERABAD
BTech in Computer Science, MS by Research in Computational Natural Sciences
Expected May 2027
Cumulative GPA - 9.23 / 10

DELHI PUBLIC SCHOOL RK PURAM
Grad. May 2022 | New Delhi, India

LINKS

Github: **UberMayinch**
LinkedIn: **chinmaysharma**
Twitter: **@Uber_Mayinch**
Codeforces: **Chinmay_2004**

COURSEWORK

Data Structures and Algorithms
Computing in Sciences
Machine Data and Learning
Statistical Methods in Artificial Intelligence
Systems Biology
Algorithm Analysis & Design
Design and Analysis of Software
Discrete Structures
Real Analysis & Linear Algebra

SKILLS

C++ • C • Python • Julia • Assembly
VimScript • Javascript • MySQL
LaTeX• Common Lisp • Haskell • Lua

TOOLING

Bash Scripting • SLURM and HPC
Unix/Linux • Git • Docker

AWARDS

2022-24 **Dean's List for all semesters** (top 5%) students.
2021 **KVPY SA** Research Fellowship Scholar
2020 **Indian National Mathematical Olympiad** (INMO) Finalist
2019 **A Star Youth Research Scholarship** (Among 3 awardees from India)

PROJECTS

UBERMAYINCSH - A C SHELL IMPLEMENTATION

- Implemented a **custom UNIX-style shell in C/C++** that parses user input, invokes system calls (**fork**, **exec**, **wait**), and manages built-in commands (cd, export, history).
- Engineered **piping and I/O redirection**, enabling chaining of processes and redirection of stdin/stdout/stderr.
- Integrated basic **TCP networking** features using the **socket API** to support remote command execution and simple file transfer.

NETWORK FILE SYSTEM

- Developed a **POSIX-compliant distributed NFS in C/C++** with a central naming server for metadata management.
- Leveraged LRU caching to achieve **sub-millisecond path resolution**.
- Implemented **dynamic TCP-based storage** servers featuring **asynchronous write buffering, non-blocking I/O**, and **data replication** across nodes for **low-latency fault tolerance**.
- Built a **multithreaded client library** supporting pipelined read/write, directory operations, and **high throughput**.

GPU OPTIMIZED MODELS

- Developed a GPU-accelerated ML toolkit in **Python** by integrating **NumPy** and **CuPy**, enabling seamless CPU/GPU execution.
- Implemented core algorithms including **GMMs, K-Means clustering, Linear Regression, PCA**, and **MLPs** using CuPy's array abstractions.
- Automated hyperparameter tuning with Optuna and managed experiment tracking and real-time logging via Wandb.
- Achieved **8-30× speed-ups on GPU benchmarks**, ensuring high throughput performance and reproducibility.

WORK EXPERIENCE

RESEARCH ASSISTANT IIITH

- Served as Research Assistant advised by **Prof. Chittaranjan Hens** at the Center for **Computational Natural Sciences and Bioinformatics**.
- Currently working on applying Machine Learning Techniques in the domain of complex adaptive systems, networks and NLD.

TEACHING ASSISTANT Discrete Mathematics

- Served as a TA under **Prof. Shantanav Chakraborty** . Prepared and Evaluated Problem sets, quizzes and assignments for a batch of 380+ students on topics such as **First Order Logic, Number Theory, Graphs**.

TEACHING ASSISTANT Data Structures and Algorithms

- Served as a TA under **Prof. Kshitij Gajjar**. Prepared, Tested and Evaluated Algorithmic Problem sets, quizzes and assignments for 400+ students.

LEADERSHIP EXPERIENCE

THEORY GROUP, IIITH Coordinator

- Organized the college round of the **The Integral Cup**, presented by **Optiver** - the largest integral bee challenge in India.
- Initiated the Quantum Physics, and Topology and Differential Geometry for **Theoretical Physics Reading Group**.
- Core Reading Group Member - **Cats4AI**, Myth of Sisyphus and Category Theory for Programmers Reading Groups.

MATH SOCIETY, DPSRKP President

- Organized Mathematical Crusade 2021 - an Interschool Math Competition with over 250 students participating in an online mode.