Vidit Jain

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EDUCATION

International Institute of Information Technology, Hyderabad (IIIT Hyderabad) India

BTech (Honors) in Computer Science & Engineering GPA: 9.69/10 (Major) 9.37/10 (Overall) Graduation Date: May 2024

- Organizations/Awards: Honors Research Program, Dean's Honors List (x4), Merit List (x2), Programming Club Coordinator.
- Teaching Assistant for Advanced Algorithms, Design & Analysis of Algorithms, and Discrete Math.
- Coursework: Data Structures, Design & Analysis of Algorithms, Database Systems, Distributed Systems, Operating Systems, High Performance Computing, Compilers, Advanced Algorithms, Game Theory, Machine Learning, Probability & Statistics, Linear Algebra.

WORK & LEADERSHIP EXPERIENCE

Capital One Dallas, Texas

Software Engineer Intern Jun 2023 - Aug 2023

- Automated the verification of rule changes for loans, implementing a cloud-based system with AWS & a Salesforce interface.
- Implemented an automated version history system for price structure rules, enabling Business Analysts to seamlessly keep track of changes, push and pull updates, while ensuring consistency of the updates made by 250+ analysts on 10k+ sets of rules simultaneously.
- Created a tool to quickly resolve out-of-order updates of the magnitude 1k-10k in the Version Control System, minimizing inconsistency.

Computer Systems Group (IIIT Hyderabad) Hyderabad, India

Undergraduate Researcher Jul 2022 - Apr 2024

- Working under the guidance of Dr. Suresh Purini, in collaboration with Intel Labs to achieve low-latency optimizations within Intel's implementation of the STAR DNA sequence aligner using vector intrinsics, instruction-level parallelism and other low-level optimizations.

IIIT Programming Club Hyderabad, India

Club Coordinator Jul 2022 - Sept 2023

- Led the organizing and problem-setting of CodeCraft-23, IIIT Hyderabad's largest event with 25k+ participants. Assisted in conducting Decode, another global contest, and organized Botomania, an event for developing a bot to win a non-deterministic 2-player game.
- Managed 15+ contests within college, took meets covering Number Theory, advanced String algorithms, and Persistent Data Structures.

MBT Infra Hyderabad, India

Software Engineer Intern Jan 2022 - May 2022

- Coded an Ethereum-network based application for insurance payouts using Flutter, secured with 2-Factor Authentication using Coinbase.
- Deployed a smart contract on the Ethereum Network & designed a system to purchase & payout insurance using crypto to 1k+ people.

ACHIEVEMENTS

- Codeforces (fangahawk) - 2113 (Master), #60 in India.
- Google Kickstart 2022 - #50/12k (Round G) and #86/5k (Round H).
- Google Hashcode - #296/10k teams globally, #21 in India.
- ICPC (Team fightFight) - #9 in 2023 Amrita Regional, #10 in India-Wide Preliminary Round for 2022 Amrita Regional, #19 in 2022 Asia-West Continental Finals, #23 in 2022 Amrita Regional.

PROJECTS

Optimizing Bioinformatics (C, C++, OpenMP, Google Benchmark Library) Link

Sped up the Needleman-Wunsch algorithm by modifying the recurrence relation processing method, optimally using the system cache, and utilizing instruction level parallelism to achieve a 130x speedup. This project was presented to Intel Labs.

Hybrid Distributed File System (GFS, HDFS, gRPC) Link

Built a Distributed File System with semantics similar to both Google File System and Hadoop File System, constructing a Consistent & Partition Tolerant Distributed System.

Database System Design (Databases, C++, Query & Storage Optimization, Indexing) Link

Extended the functionality of the RDBMS, supporting the efficient storage of matrices, with a specialized page design to improve efficiency of certain queries. Also optimized various database queries (joins, group by) using indexing with the help of B+ Trees.

xv6 & C Shell (C, Linux, Operating Systems) Link Link

Implemented and benchmarked syscalls & 3 schedulers for the xv6 OS, developed a unix shell with piping, I/O redirection & signal handling.

College Course Scheduler (Python, Optimization, OptaPlanner, Scheduling Theory) Link

Optimized satisfying hard & soft constraints using Local Search & Heuristics to achieve an optimal college-wide course timetable.

Racket Compiler (Racket, Register Allocation, Graphs, Parsing) Link

Compiler for Racket to x86asm compilation with support for functions, loops, conditional branching, used DSATUR for register allocation.

SKILLS & TOOLS

Languages - C/C++, Python, Bash, Racket, SQL

Skills - Distributed Systems, HPC, MapReduce, Pthreads, Linux, Git, Docker, MongoDB, Vim