Bhavya Ahuja

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Skills

Languages C, C++, Python, JavaScript, HTML, CSS, Assembly (Low Level), Bash

Web/App Development MERN Stack (MongoDB, Express, React.js, Node.js), Python Flask, HTML, CSS, JS, basic Kotlin

OS/ Networks Linux, Ubuntu and Networking Fundamentals

Relevant Coursework

CS DSA (Data Structures and Algorithms), Operating Systems and Networks, Automata Theory (Computation), Design and Analysis of Software Systems, Computer Systems Organization, DBMS

Math Probability and Statistics, Linear Algebra, Numerical Algorithms, Discrete Structures, Real Analysis

Education

International Institute of Information Technology, Hyderabad (IIIT-H)   **July 2023 – Present**
Bachelor of Technology (B.Tech) and Masters by Research (MS) in Computer Science Engineering
CGPA: 7.7

Projects

Point Cloud Image Classifier   **December 2024**
– Implemented an entire pipeline from image processing in **Python** to classification within a functional Android interface using **Kotlin** as part of a collaboration with IIIT-H labs **(CVIT and CVEST)**.
– It takes a Point Cloud Image and predicts if its a Human, Bike or Car.
– Performed classification of point cloud images using SVM and PCA techniques, serving as a practical demonstration of Machine Learning(ML) applications.

Network File System (NFS)   **November 2024**
– Implemented a distributed network file system from scratch in C
– Implemented data structures like **tries, LRU Cache optimization** to store, retrieve, and manage a collection files and directories
– Implemented functionalities for clients for file operations, a naming server for efficient file access, and storage servers for data management and persistence.

Built a Shell (Bash) in C   **September 2024**
– Built my own custom shell in C
– Mimics bash with custom commands with file and directory navigation, file handling, signal handling, support for foreground and background processes, and system commands

Worked on xv6 Operating System   **October 2024**
– Incorporated **Scheduling Policies** like MLFQ and LBS in the OS in C
– Implemented Copy on Write (COW), Lazy Fork, Lazy Read-Write functionality
– Implemented more system calls/commands with appropriate signal handling

Networks   **October 2024**
– Implemented a tic-tac-toe game with clients and server side features using TCP and UDP in C

Image to Video Application   **March 2024**
– Worked in a team of three to implement a full stack web application that enables users to upload images and convert them into fully customizable videos with transitions, background music and personalized settings
– **Flask** backend and **HTML/CSS** backend and a third party databse to store and retrieve images using SQL

Awards

Kishore Vaigyanik Protsahan Yojana (KVPY) Fellow   **July 2022**
My first deep plunge into science. KVPY was organized by the Department of Science and Technology, Government of India to search and encourage scientifically inclined minds studying in 11th grade, 12th grade, or freshmen.
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