

SAHIL CHAUHAN

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EDUCATION

Indian Institute of Technology Delhi

July'19-May'23

B.Tech in Electrical Engineering

CGPA:8.12/10.00

Navjeevan Science School, Sikar

July'17-May'18

Class XII - Rajasthan Board of Secondary Education

80.40 %

TECHNICAL SKILLS

Programming & Libraries: C++, Golang, C, FastAPI, Python, Java, Linux, VPP, DPDK, MongoDB, PostgreSQL

Relevant Coursework: Data Structures & Algorithms, Probability & Stochastics, Linear Algebra, Operating Systems, Machine Learning. **Tools and Framework:** Linux, VPP, Docker, Websocket, Tensorflow, Keras, PyTorch, Pandas.

EXPERIENCE

Jio Platforms Limited

July'23 - Present

Software Engineer

Gurugram, India

Session Border Controller (SBC)

- Developing a user calling management system using Session Border Controller (SBC) in C, leveraging the MEGACO protocol for encoding and decoding signaling messages to manage real-time IP communications
- Implementing key SBC functionalities, such as adding, modifying (voice-to-video and video-to-voice transitions), and terminating calls, ensuring secure and efficient session control for VoIP, video, and other real-time communications
- Optimizing SBC performance with VPP for efficient packet processing, **low-latency** call and WebSocket for real-time communication

UPF development

- Developed an in-house **Internet Packet Processor** to remove third-party dependency, utilizing VPP(Vector Packet Processing)
- Implemented policies for packet classification, forwarding, consumption tracking, throttling, redirection to optimize network operations
- Utilizing multithreading and memory management in C to optimize packet processing and ensure efficient system performance

Samsung R&D Institute India-Bangalore, Inc.

May'22 - June'22

Software Engineering Intern

Bangalore, India

- Implemented EMVD, **Efficient Multi-stage Video Denoising algorithm** using Recurrent Spatio-Temporal Fusion & CNN
- Used two convolutional layers (3x3 kernels and 16 filters) followed by ReLU activation and output layers activated by sigmoid
- EMVD generates good results in both static and dynamic regions, having a complexity 573x lower than EDVR & RViDeNet

PROJECTS

GoChat - Real-Time WebSocket Chat Application

August'24

Tech Stack: Golang, Gorilla WebSocket, Redis, PostgreSQL, JWT, Docker

- Developed scalable real-time chat application with WebSocket for real-time messaging and Redis for user session & presence tracking
- Implemented private messaging, online/offline presence indicators, and persistent message storage using **PostgreSQL**
- Integrated **JWT** for secure user authentication and session management, ensuring user privacy and security in communication

Dynamic Memory Allocation

September'22

- Developed a dynamic memory allocator prototype that ensures swift and efficient handling of program memory request
- Designed a **best-fit** method to carry out allocation and free operations as efficiently as possible while minimizing fragmentation
- Implemented a balanced binary search tree (**AVL tree**) to efficiently implement the strategy along with a defragmenter

Simulating Individual Social Interactions

January'21

- Constructed **storyline graph** with 327 characters as nodes & 9891 connections as edges in **edge list representation** of graph
- Used efficient algorithms like randomized **quick sort** to calculate the average number of connections and the character ranks
- Performed **DFS** on graph to generate partition of independent storylines using Hash-Map & Array-List data structures in java

Image Enhancement Toolkit

November'19

- Programmed an image editor in Python to remove noise from images to make it more useful for computer vision application
- Implemented **Pixel averaging**, **Edge Detection**, **Path of Least energy**, Black & white conversion for PGM format Images
- Performed image convolution technique with 3x3 kernel for edge detection and Spatial filtering algorithm for noise removal

EXTRA CURRICULAR ACTIVITIES

General Secretary, Co-Curricular and Academic Interaction Council (CAIC)

July'2022 - June'2023

Overall Coordinator, Tryst'23 - Technical fest of IITD

Sep'2022- April'2023

Convenor (Electrical Engineering department), CAIC, IIT DELHI

July'2021- June'2022

Publicity Coordinator, Tryst'22- Technical fest of IITD

Nov'2021- April'2022