Saksham Dhull

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Work Experience

Samsung Research, South Korea | *Software Engineer, 6G Research Team* Sep, 2021 - Jan, 2024

- Directed a 3-person team to design and ship a multimodal Speech LLM prototype, reducing pipeline complexity and TTS latency by 200ms, deployed internally as a demo.
- Built an under 1s latency video summarization microservice using oneShot-TTS and Llama, with expression cues.
- Led a 4-person team to develop a Rust-based dynamic memory profiler adopted by 30+ internal teams, replacing Valgrind to avoid licensing risks during 6G commercial release.
- Automated end-to-end model deployment with Kubeflow MLOps, enabling iterative model improvements and boosting throughput by 3.7% on a 12-node cluster with 100Gbps traffic.
- Co-authored 6G tech stack proposal and developed the L2/L3 protocol stacks with a team of 12 to attain 30Gbps throughput.

Spotnana, Palo Alto, CA | *Software Engineer, Backend Team* Jun, 2021 - Aug, 2021

- Developed an automatic REST API generation service (300+ endpoints) to reduce the release cycle from 30 to 28 days.
- Presented bi-weekly technical progress reports to investors and VCs, effectively communicating platform capabilities and supporting funding discussions.
- Implemented and managed CI/CD automation for backend APIs, reducing deployment times through regression testing.

Samsung Research, South Korea | *Software Engineer Intern, 5G Research Team* May, 2020 - Jul, 2020

- Investigated and optimized throughput bottlenecks in Linux kernel SCTP for 4+ core 5G system with 1+Gbps throughput.
- Built a lightweight tput benchmarking tool in Go for technical analysis of 3 SCTP frameworks under 10 Gbps test load.

Education

Indian Institute of Technology, Delhi – *Bachelor of Technology, Computer Science*
Awards & Achievements:

- Recipient of the IIT Delhi Semester Merit Award, Top 7% of 930 students in bachelors cohort.
- Joint Entrance Examination (JEE) Advanced, 2017: secured **All India Rank 66** among 1.6M students.
- International Olympiads, 2017: Selected among the top 30 students from India for IPhO, IChO and IOAA OCSC.

Technical Skills

- **Programming**: C++, Python, Rust, Java, Go, SQL, JavaScript
- **System & Infra**: Kubernetes, Docker, AWS, GCP, CI/CD, Distributed Systems
- **Specializations**: Software Architecutre, Distributed Systems, Agentic AI, Backend Development, System Software

Projects

Rust Ray Tracer Dec, 2024

- Built a Ray Tracer in Rust with enterprise rendering engines features.
- Reduced rendering times by 10× compared to naive baseline by using BVH Acceleration and Parallel processing.
- Published a technical blog detailing architecture, design choices and open-source contributions.

Lattecoin - Rust-based BlockChain Cryptocurrency Jul, 2024

- Designed and implemented a blockchain with Bitcoin-style PoW consensus with on-line difficulty adjustment to maintain block time of approximately 2 minutes.
- Deployed a 50+ miners, ledgers, and peers network with real-time ledger synchronization at 1K+ TPS.
- Built a Web dashboard to visualize live blockchain stats, block height, transaction throughput, and peer connectivity.

Fairness in Computer Vision | *Prof. Chetan Arora, IBM Research* Sep, 2020 - Feb, 2021

- Built a Causalty VAE model to analyze dependencies across 100+ features on the CIFAR dataset.
- Submitted a technical paper detailing the model structure, design choices and the outcomes to ICCV 2021.

PageRank using MapReduce Mar, 2020

- Developed an MPI-based MapReduce library for PageRank, resulting in a 8.8% performance enhancement over MKL.

AI Bot for Cannon board game Nov, 2019

- Created an AI bot utilizing 10 depth-bound adversarial searches with alpha-beta pruning to increase efficiency by 25%.
- Secured 3rd position in intra-branch knock-out tournament out of 43 teams.

Incremental BFS (LNCS Journal) | *Prof. Sandeep Sen, Summer Research Fellowship* May, 2019 - Aug, 2019

- Invented a theoretical technique with novel bounds for maintaining the BFS tree of a graph in incremental scenarios.
- Authored a journal paper for Springer LNCS, detailing methodology, mathematical proofs, and experiments.

Distributed Cloud Computing on LAN | *Prof. Subhashis Banerjee, DISA* May, 2018 - Oct, 2018

- Led a team of 3 to generate a cloud computing framework on LAN using KVM, libvirt, and Python.
- Demonstrated a working Proof-of-Concept on 150+ CPUs in the Computer Lab, reducing Baadal load by 7.2%.