Saksham Dhull

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Education

Bachelor of Technology, Computer Science – Indian Institute of Technology, Delhi Jul 2017 - May 2021

Awards & Achievements:

- Recipient of the IIT Delhi Semester Merit Award, Top 7% of 930 students in cohort.
- Joint Entrance Examination (JEE) Advanced, 2017: **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.

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 by 7% (30 -> 28 days).
- Delivered executive-level technical presentations to C-suite leadership and venture capital partners during bi-weekly investor meetings, directly supporting $41M Series A funding success.
- Streamlined CI/CD infrastructure for backend architecture, with containerized regression testing automation.

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.

Technical Skills

- **Programming**: C++, Python, Rust, Java, Go, SQL, JavaScript
- **Software Development**: REST API, GraphQL, FastAPI, Django, Node.js, Springboot, Flask
- **Cloud & Infrastructure**: Kubernetes, Docker, AWS, GCP, CI/CD Pipelines, Distributed Systems
- **Database Systems**: PostgreSQL, MongoDB, Redis, Pinecone, Elastisearch, Databricks, Snowflake
- **Specializations**: Software Architecutre, Distributed Systems, Agentic AI, Backend Development, System Software

Selected Projects & Research

Rust Ray Tracer Dec 2024

- Built production-grade ray tracing engine with enterprise rendering features including BVH acceleration and parallel processing, achieving 10x performance improvement over naive implementation baseline.
- Published a technical blog detailing architecture, design choices and open-source contributions.

Lattecoin - Rust-based BlockChain Cryptocurrency Jul 2024

- Designed Bitcoin-style proof-of-work blockchain with dynamic difficulty adjustment algorithms maintaining 2-minute block intervals, supporting 1K+ transactions per second across 50+ distributed mining nodes.
- Deployed real-time analytics dashboard with live blockchain visualization including block height, transaction throughput, and peer connectivity metrics, maintaining 99.9% system uptime.

Fairness in Computer Vision – *IBM Research* Sep 2020 - Feb 2021

- Developed Causality VAE model analyzing feature dependencies across 100+ variables on CIFAR dataset.
- Submitted technical research paper to ICCV 2021 detailing novel model architecture and experimental validation results.

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%.