MAHESH DORSALA

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EDUCATION

Stony Brook University — **Stony Brook, New York**
Master of Science in Computer Science — *January 2025 - December 2026 (Expected)*
Coursework: Analysis of Algorithms, Natural Language Processing, Probability and Statistics — GPA: 4.0

PES University — **Bangalore, India**
Bachelor of Technology in Computer Science — *August 2018 - May 2022*
Specialization in Machine Intelligence and Data Science

TECHNICAL SKILLS

Languages: Go, Python, C, C++, R, SQL, HTML, JavaScript, MySQL, SQL, Java.
Technologies: Debian, Linux, Kong, Jmeter, Grafana, DASH, HLS, DVB, TS, Git, Pytorch, GCP, AWS, CUDA, Hadoop.

EXPERIENCE

Dish Network Technologies — **Bangalore, KA**
Software Developer | Golang, Linux, Video Streaming — *June 2022 – December 2024*

- Architected and implemented a **DVR** system for multicast data, enabling the onboarding of over 10 new clients by converting Transport Stream (**TS**) data with DVB-SI metadata into **DASH/HLS** formats.
- Increased OnStream Streaming Server concurrent user capacity threefold, from 2,000 to over 6,000, by optimizing **Golang REST APIs** and enhancing caching, pause-on-live, and DVR functionalities.
- Expanded **streaming channel** capacity by 67% (from 72 to 120), significantly enhancing customer experience and content diversity while maintaining system stability and performance.
- Created Debian package installation with **Debconf**, reducing setup time to less than 1 minute from 10 minutes.

Software Developer Intern — *January 2022 – June 2022*

- Spearheaded and implemented a robust performance testing framework utilizing **Python, BlazeMeter,** and **JMeter**, which identified key system bottlenecks and became a critical component in qualifying 8 new features.
- Resolved scaling bottlenecks with **transient services** groups, decoupling microservices and increasing system availability to 99.99%.

Dell Technologies — **Bangalore, KA**
High-Performance Computing Intern | CFD, Linux, OpenMP, Slurm — *May 2021 – August 2021*

- Led collaborative research at **Dell Innovation Lab**, working with a team of 6 interns to benchmark and optimize **HPC server cluster performance**, resulting in 35% improved processing efficiency.
- Benchmarked and optimized **High-Performance Computing** (HPC) server cluster performance by running **computational fluid dynamics** (CFD) simulations of OpenFOAM on AMD Milan and Rome clusters, identifying optimal compiler, hardware, and **OpenMP** across 20+ configurations.

PROJECTS AND RESEARCH EXPERIENCE

Theoretical and Experimental Algorithmics Lab (TEAlab) | *Link* — *March 2025 - Present*

- Investigated the logical bounds of **Large Language Models** by analyzing their **performance** in solving over 800+ **advanced algorithms** to determine time-agnostic theoretical and practical capabilities.

Performance Analysis of Computer Systems Lab (PACE lab) | *Link* — *June 2025 - Present*

- Developed **machine learning models** to predict per-job power consumption, creating a framework to analyze the **embodied carbon usage** in computational tasks.

Text2Face: Realistic Facial Image Generator | *Publication link* — *August 2021 - February 2023*

- Built a novel **deep learning pipeline** to generate lifelike human facial images from textual descriptions, achieving 47% performance gain over state-of-the-art methods. Published research at **IVCNZ 2022.**

YACS - Yet Another Centralized Scheduler | Python, Concurrency Programming, Socket-Programming | Link

- Engineered a centralized job scheduler and resource allocator for managing **MapReduce** tasks in a distributed system supporting 3 **scheduling algorithms** (random, round-robin, and least-loaded).

Transformers Trivia | Python, PyTorch, Hugging Face Transformers | Link

- Implemented a Python-based system to evaluate and fine-tune transformer-based language models (**DistilGPT-2 and DistilRoBERTa)** for boolean question answering tasks using the **BoolQ** dataset achieving 83% accuracy.