RAKSHITH S

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EXPERIENCE

Siemens Healthineers — Bangalore, India
Software Engineer 1 — *July 2023 – Present*

- **Built high-performance distributed microservices** in **C++**/**Go** supporting streaming data workloads; optimized concurrency and memory to reduce service latency by **25%**.
- **Implemented resilience patterns** like circuit breakers and retries, ensuring consistent system availability and data integrity for high-throughput compute infrastructure.
- **Enhanced multi-tenant data path** with **MySQL** tuning and **Redis** caching; increased ingestion throughput by **40%** for large-scale datasets.
- **Designed GPU-accelerated training pipelines** for ML/LLM workloads; implemented distributed strategies using **PyTorch Distributed** and **DeepSpeed** to scale across **HPC clusters**.
- **Optimized CUDA kernels** and compute flows for specialized hardware; performed deep performance profiling and memory analysis to eliminate bottlenecks in large-scale model training.
- **Supported containerized microservices** deployments on Linux/Azure and drove Agile delivery
- **Implemented idempotent ingestion handlers** with **retries/backoff** and deduplication keys to ensure reliable processing under failures; lowered duplicate processing by **90%** and improved recovery robustness.

Siemens Healthineers — Bangalore, India
Software Engineer Intern — *February 2023 – July 2023*

- Developed **REST APIs** and data models (C#) with **MySQL**/**Redis**; contributed to ingestion/validation modules and unit/integration tests.
- Automated developer workflows and CI tasks; participated in **code**/**design reviews**; achieved **60%** process time savings and **mentored** interns; adhered to **Agile** methodology.

SKILLS

Languages: C++, Python, CUDA, Golang, SQL, Bash, Shell, C#, Java
AI & Compute: PyTorch Distributed, DeepSpeed, HPC Clusters, Multi-GPU Systems, Parallel Processing, GenAI/LLM
Core Systems: Computer Architecture, Distributed Training Frameworks, Memory Management, RTOS, Linux Kernel
Optimization: CUDA Kernels, Performance Profiling (VTune, GDB), Lock-free Structures, High-Availability
Tools & Frameworks: PyTorch, TensorFlow, scikit-learn, Git, CI/CD, Docker, Kubernetes, AWS/Azure

PROJECTS

Distributed AI Compute Engine ([Repo](#)) | *C++, CUDA, PyTorch*

- Engineered a low-latency parallel compute engine in **C++** using **lock-free data structures** and custom memory management to minimize overhead in distributed training tasks.
- Designed a **multithreaded** architecture for concurrent data processing; optimized for multi-node clusters and integrated resilient communication protocols for scalable model training.

Secure Distributed Training Utility ([Repo](#)) | *C++, Python, DeepSpeed*

- Built a secure utility for handling large-scale ML datasets with **AES-256** encryption; implemented block-level deduplication to optimize storage and data movement across HPC nodes.
- Crafted modular compute flows and robust error handling for data integrity; refined **CUDA kernel** performance for high-throughput training operations.

AI Compute Performance Analysis Tool ([Live](#) | [Repo](#)) | *AI, ML, 3D Visualization*

- Created an AI-powered platform that predicts compute risks, detects bottlenecks, and visualizes **GPU memory** dependencies; implemented ML-based performance hotspot prediction.
- Developed pipelines for repository analysis; contributed to **architecture**/**design reviews**; delivered dashboards to guide optimization of large-scale training jobs.

EDUCATION

National Institute of Engineering — Mysore, India
B.E in Electronics and Communication Engineering — *August 2019 – July 2023*

- Coursework: Computer Networks, Computer Architecture, DBMS, Big Data, Machine Learning, DSA, REST API.
- Language fluency: Kannada, English, Hindi.

CO-CURRICULARS

Xstasis Dance Group: Siemens Healthineers. | **Project Head**: UCSP Research Group, NIE. | **Marketing Head**: Onyx E-Cell, NIE.